TEEN SMOKING BEHAVIOR AND THE REGULATORY ENVIRONMENT

JONI HERSCH†

Professor Hersch argues that most state regulations aimed at fighting teen smoking have had little or no effect. She provides evidence that despite widespread age restrictions on purchasing tobacco, most teens do not consider it difficult for minors to purchase tobacco products within their community. She also presents evidence demonstrating a strong correlation between smoking rates and perceptions about the addictive nature of smoking. These findings suggest that facilitating greater awareness of the addictive power of cigarettes could be effective in curbing teen smoking. She explores the potential for parental restrictions on limiting teen smoking, but provides indications that parents are not well informed about their children's smoking behavior. Finally, she examines the recent FDA regulations, which, she says, are merely a continuation of the traditional methods of attacking adolescent smoking, and are unlikely to have a significant effect.

INTRODUCTION

Most current smokers began smoking in their teens.[1] Because of this, and because the long-term health consequences are greater the earlier one begins smoking, one focus of recent anti-smoking campaigns and initiatives has been preventing teens from beginning to smoke.[2] Smoking is currently forbidden in schools,[3] and tobacco com-

† Professor of Economics, University of Wyoming; John M. Olin Senior Scholar in Law and Economics, Harvard Law School. Professor Hersch presents the arguments she first offered on March 6, 1998, at the *Duke Law Journal*'s 1998 Administrative Law Conference.

1. *See* OFFICE ON SMOKING & HEALTH, U.S. DEP'T OF HEALTH AND HUMAN SERVS., PREVENTING TOBACCO USE AMONG YOUNG PEOPLE, A REPORT OF THE SURGEON GENERAL 67 (1994) [hereinafter YOUTH & TOBACCO] (citing the 1991 National Household Surveys on Drug Abuse finding that 88% of all persons who had ever tried a cigarette had done so by age 18).

2. *See* John Schwartz, *Officials Seek a Path to Cut Into Haze of Youth Smoking; The*

parties have been under fire for advertising campaigns, such as the Joe Camel campaign, that appear to be targeted at minors.[4]

Part I provides an overview of the magnitude of the teen smoking problem and analyzes the current trends in teen tobacco consumption rates. Part II describes the current reach of the two most common regulatory efforts designed to stop teen smoking: state minimum age statutes and sanctions associated with tobacco sales to minors. The growth and extent of these regulations is summarized in Table 1. I show that unlike higher cigarette taxes, age-related smoking restrictions have little effect on teen smoking. All states currently forbid the sale of tobacco products to minors under age eighteen,[5] but despite such restrictions, the smoking rate among minors is high.

Part III describes the data I use to analyze the success of these traditional efforts to curb teen smoking. The sources of these data are the Tobacco Use Supplements of the Current Population Survey (CPS), which includes information on the smoking behavior of a sample of about 29,000 youths. I use these data—compiled in Tables 2, 3, and 4—to examine whether the state restrictions, and teens' perceptions of these restrictions, have influenced teen smoking behavior.

Bottom Line: No One Knows What Works, WASH. POST, Nov. 2, 1997, at A1 (reporting that "[s]tate and local campaigns in this country and others have tried many approaches to stop children from smoking"). The most significant of these efforts has been the FDA assertion of regulatory jurisdiction over tobacco products, an effort specifically designed to reduce teen tobacco use. *See* Nicotine in Cigarettes and Smokeless Tobacco Is a Drug aud These Products Are Nicotine Delivery Devices Under the Federal Food, Drug, and Cosmetic Act: Jurisdictional Determination, 61 Fed. Reg. 44,619, 45,238-52 (1996) (noting that new evidence reveals that most adult tobacco users began using as teens and arguing that FDA jurisdiction over tobacco would allow the FDA to restrict teen tobacco use, which would result in "substantial public health gains").

3. The Pro-Children Act of 1994 provides, in relevant part, that "no person shall permit smoking within any indoor facility owned or leased or contracted for and utilized by such person for provision of routine or regular kindergarten, elementary, or secondary education or library services to children." 20 U.S.C. § 6083(a) (1994).

4. *See* David Segal, *Joe Camel Fired; Cigarette Ads Were Accused of Luring Youth*, WASH. POST, July 11, 1997, at A1. When asked by reporters about tobacco advertising featuring Joe Camel, President Clinton asked, "Does anyone seriously doubt that a lot of this advertisement is designed to reach children?" Elizabeth Gleick, *Out of the Mouths of Babes*, TIME, Aug. 21, 1995, at 33.

5. Prior to 1992, there was a great deal of variation in minimum age laws between states. *See infra* tbl. 1. The present uniformity in state prohibitions against the purchase of tobacco by minors was largely motivated by the passage of the Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA) Reorganization Act, Pub. L. No. 102-321, 106 Stat. 323 (1992) (codified in scattered sections of 42 U.S.C.). This Act conditioned the receipt of certain federal funds by states on their adoption of vigorous measures to combat teen tobacco consumption. *See* 42 U.S.C. § 300x-26 (1994). The influence of this Act on subsequent state actions is discussed in greater detail *infra* in the text accompanying notes 90-96.

I then examine, in Part IV, two factors outside of this traditional regulatory framework that may influence teen smoking: education about the addictive properties of smoking, and parental restrictions. I demonstrate that, for teens, there is a strong relationship between smoking and perceiving smoking as non-addictive. I also show that teens who live in households where smoking is not permitted are less likely to smoke than those who live in less restrictive households.

In Part V, I present an overview of the effect of taxation and regulation on teen smoking, and conclude with a discussion of recent laws that are designed to strengthen the existing regulatory framework.

I. TRENDS IN TEEN SMOKING BEHAVIOR

For policy purposes, it is necessary to know both the magnitude of the smoking problem among teens and whether the downward trend in societal smoking rates has been reflected in a reduction in teen smoking as well. Because adult smokers generally begin smoking in their teens,[6] the behavior of teenagers largely determines the size of the future smoking population.

A. Adult Smoking

Since it is useful to compare the smoking behavior of teens to that of adults in the same period, I briefly give an overview of adult smoking rates. Since 1965, the National Health Interview Survey (NHIS) has collected data on adult (ages eighteen and older) smoking behavior. NHIS data reveal that in 1965, the smoking rate for adults was 42.4%.[7] By 1991, the overall smoking rate had declined dramatically, to 25.7% of the adult population.[8] Smoking rates in every year of the survey are highest for those ages twenty-five to forty-four.[9] Smoking rates are inversely correlated with education.

6. *See supra* note 1 and accompanying text.

7. *See* Centers for Disease Control and Prevention (CDC), *Surveillance for Selected Tobacco-Use Behaviors—United States, 1900-1994*, MORBIDITY & MORTALITY WKLY. REP., Nov. 18, 1994, at 8 [hereinafter CDC 1994].

8. *See id.* at 9. The smoking rates for the total adult population calculated from the NHIS for 1992 and 1993 are 26.5% and 25%. The definition of smoking used by the NHIS changed in 1992 to include smokers who smoked occasionally, but not every day, as current smokers. Thus, the smoking rates before and after 1992 are not entirely comparable. More recent smoking rates are reported in BUREAU OF THE CENSUS, U.S. DEP'T OF COMMERCE, STATISTICAL ABSTRACT OF THE UNITED STATES: 1996 145 (1996).

9. *See* CDC 1994, *supra* note 7, at 9.

For instance, as of 1991, the smoking rate for adults with less than a high school education was 31.4%; for those with sixteen or more years of education, the rate was 13.9%.[10]

The smoking rate for blacks exceeds that of whites over the 1965-1991 period.[11] In 1965, the smoking rates for whites and blacks, respectively, were 42.1% and 45.8%.[12] By 1991, the corresponding rates were 25.5% and 29.1%.[13] However, since about 1985, whites ages eighteen to twenty-four have been considerably more likely to smoke than blacks in the same age range.[14]

Until recently, men were considerably more likely than women to smoke. In 1965, 51.9% of men and 33.9% of women were current smokers.[15] The smoking rate among men fell at a faster rate than that among women: 28.1% of men and 23.5% of women were current smokers as of 1991.[16] The disparity in smoking rates by gender has particularly narrowed among men and women ages eighteen to twenty-four. The smoking rates in 1965 for males and females ages eighteen to twenty-four was 54.1% and 38.1% respectively; by 1991 the rates were 23.5% and 22.4%.[17]

The lower rate of change in smoking by women is troubling because women's smoking rates have broader societal implications. While smoking generally poses well-known health risks, smoking among women has unique hazards. Cigarette smoking during pregnancy has been linked to a variety of problems, including low birth weight, premature delivery and increased risk of fetal death.[18] There is mounting evidence that nonsmokers, particularly children, are affected by second-hand smoke.[19] Moreover, since women tend to be the primary caregivers within a household, children may be affected more by their mothers' smoking behavior than by their fathers'.

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10. *See id.*
11. *See id.* at 8.
12. *See id.*
13. *See id.*
14. *See id.* at 17.
15. *See id.* at 8.
16. *See id.*
17. *See id.* at 17.
18. *See* YOUTH & TOBACCO, *supra* note 1, at 28.
19. *See id.* at 28-29.

B. Teen Smoking

The 1994 report of the Surgeon General examines youth smoking in great detail.[20] It compiles smoking rates for teens from various sources. Although smoking rates differ slightly due to different samples, definitions of smoking, and survey methods used (household or school based), the trends are nevertheless largely consistent across studies. The proportion that have tried smoking increases with age: by age eighteen, about two-thirds of adolescents have tried smoking.[21] The smoking rate is lower among those who live with both parents, report better academic performance, plan to attend college, and consider religion important.[22]

A high proportion of smokers ages twelve to eighteen report trying unsuccessfully to quit smoking. For instance, data from the 1989 Teenage Attitudes and Practices Survey indicate that 74% of the smokers surveyed had seriously thought about quitting and 64% had tried to quit.[23] Similar statistics are reported in other surveys.[24]

An excellent source of information about teen smoking is Monitoring the Future, an annual survey of high school seniors that has been conducted by the University of Michigan's Institute for Social Research since 1975.[25] This survey's data can be used to give a picture of long run trends in youth smoking. The survey requests students enrolled in sample schools to provide, anonymously, information on cigarette and drug use, as well as other personal risk-taking behavior. Respondents are considered "daily smokers" if they report smoking at least one cigarette per day in the thirty days before the survey. The proportion of high school seniors who smoked daily in 1976 was 28.8%.[26] By comparison, the smoking rate for adults (as calculated from the NHIS data) was 34.1% in 1978.[27] The smoking rate for high school seniors declined to 18.7% in 1984, but largely stabilized

20. *See generally* YOUTH & TOBACCO, *supra* note 1.

21. *See id.* at 58.

22. *See id.* at 62.

23. *See id.* at 78 (citing the TAPS study).

24. For example, a 1976-84 study found that close to half of high school senior smokers wanted to stop smoking, and between 30-40% had tried unsuccessfully to do so. *See id.*

25. *See The Monitoring the Future Study* (last updated Dec. 8, 1997) <http://www.isr.umich.edu/src/mtf>.

26. *See* CDC 1994, *supra* note 7, at 34.

27. *See id.* at 8.

through 1993, with 19% of high school seniors qualifying as smokers in 1993.[28]

In contrast to the pattern for adults, in most years the daily smoking rate for female high school seniors exceeded that for males, although from 1991-93 the rate for males in twelfth grade slightly exceeded that for females.[29] Also in contrast to the pattern for adults, the smoking rate for black high school seniors was consistently lower than that for white high school seniors, and is now considerably lower: the 1976 white smoking rate of 28.8% dropped to 22.9% in 1993, whereas for blacks, the smoking rates were 26.8% in 1976 and 4.4% in 1993.[30]

More recent data on teen smoking from the Monitoring the Future Project is reported in a December 20, 1997 press release.[31] Daily smoking rates for twelfth graders rose from 17.2% in 1992 to 24.6% in 1997.[32] Overall, societal smoking rates are down, but this evidence shows that rates of teen smoking are on the rise. Since teen smokers often become adult smokers, this trend provides disturbing evidence of a potential resurgence of smoking rates.

II. REGULATIONS AFFECTING TEENS

A variety of approaches have been used in the attempt to counter smoking among teens, including education, sales and advertising restrictions, and limitations on locations where smoking is allowed. In this Part, I look at two types of state regulations related to the sale of tobacco products to minors: minimum ages of legal purchase, and the imposition of sanctions for sales to minors. In the next Part, I use survey data to evaluate the success of these regulatory efforts.

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28. *See id.* at 34.

29. *See id.*

30. *See id.*

31. *See* University of Michigan Institute for Social Research, *Monitoring the Future Study Press Release* (Dec. 20, 1997) <http://www.isr.umich.edu/src/mtf/mtfcig97.html>.

32. *See id.*

TABLE 1: MINIMUM AGE FOR LEGAL SALE OF TOBACCO, 1990 AND 1992

State	1990	1992	State	1990	1992
Alabama	19	19	Missouri	18	18
Alaska	16	19	Montana	none	none
Arizona	18	18	Nebraska	18	18
Arkansas	18	18	Nevada	18	18
California	18	18	New Hampshire	18	18
Colorado	18	18	New Jersey	16	18
Connecticut	16	18	New Mexico	none	none
Delaware	17	18	New York	18	18
District			North Carolina	17	18
of Columbia	16	18	North Dakota	18	18
Florida	18	18	Ohio	18	18
Georgia	17	17	Oklahoma	18	18
Hawaii	18	18	Oregon	18	18
Idaho	18	18	Pennsylvania	16	21**
Illinois	18	18	Rhode Island	16	18
Indiana	18	18	South Carolina	18	18
Iowa	18	18	South Dakota	18	18
Kansas	18*	18	Tennessee	18	18
Kentucky	none	18	Texas	16	18
Louisiana	none	18	Utah	19	19
Maine	18	18	Vermont	17	18
Maryland	16	18	Virginia	16	18
Massachusetts	18	18	Washington	18	18
Michigan	18	18	West Virginia	18	18
Minnesota	18	18	Wisconsin	none	18
Mississippi	18	18	Wyoming	none	18

* minimum age applies only to cigarettes

**minimum age for smokeless tobacco is 18

Table 1 presents the minimum age for legal purchase of tobacco products in each state for 1990 and 1992.[33] It shows that the eighteen-

33. Table 1 is based on information available in U.S. DEP'T OF HEALTH & HUMAN SERVS., PUB. NO. (CDC) 87-8396, SMOKING AND HEALTH: A NATIONAL STATUS REPORT 71

year-old minimum, which is now universal, is fairly recent.[34] As of 1990, six states[35] did not set a minimum age, and thirteen states[36] set a minimum age under eighteen. By 1992, the minimum age for legal purchase of tobacco was eighteen in all but three states,[37] and four states[38] set a higher minimum. Finally, by 1995, the minimum age for legal sale of tobacco products was eighteen in all states, with higher minimum ages in four states.[39]

There are two methods for dealing with violations of minimum age laws. First, there can be a penalty associated with purchase or possession of tobacco by minors, in the same way that there are currently penalties associated with purchase or possession of controlled or illegal drugs. However, few states impose such sanctions.[40]

The second method, used in a number of states, is to impose sanctions on retailers who sell tobacco products to minors.[41] The usual penalty for first violations is a small fine.[42] Some states also have laws that allow retail licenses to be revoked or suspended if the retailer sells tobacco products to minors.[43] As of June 30, 1995, thirteen states[44] and the District of Columbia had laws allowing the state to suspend or revoke the retail licenses of vendors who sold cigarettes to minors. However, it is not clear how strenuously these laws are enforced. As of June 1995, only eighteen states[45] designated a specific

(2d ed. 1990) [hereinafter USDHHS 1990] and NATIONAL INSTITUTES OF HEALTH (NIH), U.S. DEP'T OF HEALTH & HUMAN SERVS., PUB. NO. 93-3532, MAJOR LOCAL TOBACCO CONTROL ORDINANCES IN THE UNITED STATES 113-14 (1993).

34. *See infra* notes 90-96 (discussing the impact of the ADAMHA Reorganization Act).

35. Kentucky, Louisiana, Montana, New Mexico, Wisconsin, and Wyoming.

36. Age 16 in Alaska, Connecticut, Maryland, New Jersey, Pennsylvania, Rhode Island, Texas, and Virginia; age 17 in Delaware, Georgia, North Carolina, and Vermont.

37. Age 17 in Georgia; Montana and New Mexico did not have a minimum age.

38. Age 19 in Alabama, Alaska and Utah for all tobacco products; age 21 in Pennsylvania for cigarettes.

39. Alabama, Alaska, Utah and Pennsylvania.

40. As of 1990, only 13 states had prohibited the use or possession, or both, of tobacco products by minors. *See* USDHHS 1990, *supra* note 33, at 71. In six of these states, the use of tobacco is classified as either a misdemeanor or petty offense with no specific penalty described in the statute. *See id.*

41. *See* CDC, *State Laws on Tobacco Control—United States, 1995*, MORBIDITY & MORTALITY WKLY. REP., Nov. 3, 1995, at 16-17 [hereinafter CDC 1995].

42. *See id.*

43. *See id.*

44. Alaska, Arkansas, Connecticut, Florida, Iowa, Nebraska, Nevada, New York, Rhode Island, Vermont, Washington and Wisconsin.

45. Connecticut, Florida, Georgia, Iowa, Kentucky, Louisiana, Mississippi, New Hampshire, New Mexico, New York, Oklahoma, Oregon, South Dakota, Tennessee, Vermont, Vir-

agency, department, office or governing body responsible for enforcing the laws prohibiting sales to minors. Only six of the states that permitted suspension or revocation of retail licenses[46] had designated such an agency for enforcement.

III. DATA AND EMPIRICAL EVIDENCE

The Current Population Survey (CPS) is a nationally representative monthly survey of 57,000 households conducted by the U.S. Bureau of the Census.[47] This survey requests information for all household members ages fifteen and older on a wide range of demographic and labor market characteristics, and is the source for the Department of Labor's monthly unemployment statistics. A Tobacco Use Supplement was included in the September 1992, January 1993, and May 1993 surveys. These supplements, sponsored by the National Cancer Institute, requested information on the smoking behavior of all household members ages fifteen and older. If any of these household members were unavailable, the Census Bureau allowed any other responsible household member to reply to the survey questions regarding the unavailable household member.

To examine teen smoking behavior, I restricted the CPS sample to those ages fifteen to twenty, which resulted in a total of 28,928 observations. Of these observations, 18,303 were self-respondents. Since smoking rates vary considerably by race, I stratified the sample by both gender and race, where race was stratified by whether the individual was white or non-white.[48]

The key variable, smoking status, was elicited through a series of questions. Respondents (or their proxies) were asked whether they had smoked at least 100 cigarettes in their lives. Household members who had smoked at least 100 cigarettes were asked to indicate the age at which they started smoking cigarettes regularly. They were further asked whether they smoked every day, some days, or not at all. For this study, an individual was defined to be a "smoker" if he smoked every day or some days, while people who had smoked at least 100 cigarettes in their lifetimes, but who did not smoke at all at the time of the survey were defined as "former smokers."

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ginia, Washington and West Virginia.

46. Connecticut, Florida, Iowa, New York, Vermont and Washington.

47. *See CPS: Overview* (last modified May 9, 1996) <http://www.bls.census.gov/cps/overmain.htm>.

48. The sample of non-whites is statistically too small to break down further by race.

Self-respondents to the survey were asked a longer set of questions on their smoking behavior and attitudes. The self-respondents were asked whether they felt it was easy for minors to buy cigarettes in their community; whether the respondent considered smoking to be a habit, an addiction, neither, or both; and whether smoking was permitted in the respondent's home.

A. Smoking Rates

Table 2 presents smoking rates by gender, race, and age for the sample of self-respondents.[49] The smoking rate for the full sample is 16.1%. White males and females have similarly high smoking rates. The rate is 17.3% for white females, and 18.4% for white males; this difference is statistically significant only at the 7.3% level ($t = 1.79$, p-value = 0.073).[50] Non-white youths have the much lower smoking rates of 7.6% for females and 9.4% for males. This difference is significant at the 5.9% level ($t = 1.89$, p-value = 0.059).

Table 2 also presents smoking rates for self-respondents at ages fifteen through twenty, stratified by gender and race. The smoking rate for minors ages fifteen, sixteen and seventeen is 6.1%, 10.1% and 13.1% respectively. In general, the smoking rate rises with age, with the rate for males slightly exceeding that for females of the same race.[51] However, the differences between male and female smoking rates at each age for teenagers of the same race are, with one exception,[52] not significant at the 5% level.

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49. Table 2 figures are the author's calculations, which are based on a sample of self-respondents to the September 1992, January 1993 and May 1993 Tobacco Use Supplements to the CPS. The sample consists of household members ages 15 to 20.

50. The null hypothesis is that there is no difference in the actual smoking rates between groups. Since we observe ouly a sample, not the entire population, we expect some variation in smoking rates to occur simply by chance. We calculate a test statistic that allows us to measure the probability that the difference we observe would occur if the null hypothesis is true. For differeuces in means or proportions, as used in this paper, the test statistic used is the t-statistic. For a given calculated t-statistic, the difference in smoking rates is called "statistically significant at significance level α" if the probability that we would observe that value of the t-statistic, if there really is no difference in the population smoking rates, is less than α. The customary values of α are 0.05 and 0.01. The p-value is the probability of obtaining the observed value of the test statistic if the null hypothesis is true. *See generally* ROBERT V. HOGG & ELLIOT A. TANIS, PROBABILITY AND STATISTICAL INFERENCE 336-413 (5th ed. 1997).

51. The exception is non-white females, who have a higher rate at age 15 than at age 16, and a slightly lower smoking rate at age 20 than at age 19.

52. The exception is twenty-year-old non-whites.

TABLE 2: SMOKING RATES BY GENDER, RACE, AND AGE

Age	All	White Females	White Males	Other Females	Other Males	Significant Difference
Overall	16.1	17.3	18.4	7.6	9.4	c,d
15	6.1	6.1	7.5	3.7	1.4	d
16	10.1	11.1	11.9	2.3	4.8	c,d
17	13.1	13.4	16.0	6.0	7.2	c,d
18	21.2	23.0	25.2	8.6	10.2	c,d
19	24.9	26.7	27.8	13.9	16.1	c,d
20	26.0	27.2	29.7	11.0	23.5	b,c
Sample size	18,303	7,932	7,096	1,797	1,478	

Significant differences between proportions at $p < 0.05$ where

a = white female vs. white male
b = other female vs. other male
c = white female vs. other female
d = white male vs. other male

There are generally substantial and statistically significant differences between the smoking rates at each age for teens of the same gender but of different races. White females ages sixteen to twenty are two to three times as likely to smoke than non-white females of the same age group. Similarly, white males ages fifteen to nineteen are two to three times as likely to smoke as non-white males of the same age group. Further, the smoking rate for all whites ages nineteen to twenty exceeds the national rate for adults.[53] Since most

53. *See supra* note 8 and accompanying text (stating that the national adult smoking rate in 1991 was 25.7%).

adults who smoke started as teens,[54] this pattern indicates that young adult smoking rates will probably be higher in the future.

B. State regulations and perceptions of difficulty of purchase

State regulations are intended to limit minors' access to tobacco products. However, there is a general perception, supported by the high smoking rates of minors, that these laws are loosely enforced.[55]

Table 3 presents statistics on whether respondents ages fifteen to twenty consider it difficult for minors to buy cigarettes and other tobacco products in their community.[56] Table 3 also presents statistics on the perception of purchase difficulty stratified by whether retail licenses can be suspended or revoked by the state.[57]

It is notable that few respondents (12.2% of the nonsmokers and 21% of the smokers) consider it difficult for minors to purchase tobacco. The perception of difficulty varies somewhat by race, with non-white teens tending to consider purchasing tobacco more difficult.[58] Smokers generally perceive purchasing tobacco products to be more difficult than do nonsmokers,[59] with the difference significant for white teens. Because it is likely to be based on better information derived from first-hand experience, the beliefs of smokers are more pertinent to the objective of restricting smoking.

Table 3 also shows that it may be more difficult for minors to buy tobacco in states which allow suspension or revocation of retail licenses for tobacco sales to minors. White smokers living in more restrictive states report it to be significantly more difficult to purchase tobacco than those living in less restrictive states.

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54. *See supra* note 1 and accompanying text.

55. *See* CDC 1995, *supra* note 41, at 24 (concluding that "most young smokers are able to purchase tobacco products").

56. Table 3 figures are the author's calculations, which are based on a sample of self-respondents to the September 1992, January 1993 and May 1993 Tobacco Use Supplements to the CPS. The sample consists of household members ages 15 to 20. Table 3 figures reflect the proportion of respondents who reported it to be "somewhat difficult" or "very difficult" for minors to buy tobacco products.

57. In Table 3 the author refers to states that allow retail licenses to be suspended or revoked for tobacco sales to minors as "more restrictive" and those that do not as "less restrictive."

58. The exception is non-white female smokers.

59. Once again, the exception is non-white female smokers.

TABLE 3: STATE REGULATIONS AND PERCEPTIONS OF DIFFICULTY FOR MINORS TO PURCHASE TOBACCO PRODUCTS

Percent who report it is difficult for minors to purchase tobacco products:

	All states	More restrictive states	Less restrictive states	Difference significant?
ages 15-20				
All	13.7	14.0	13.6	no
All nonsmokers	12.2	11.7	12.4	no
All smokers	21.0	25.5	19.6	yes
White Females				
nonsmokers	9.9	9.7	10.0	no
smokers	21.1	27.6	19.0	yes
White Males				
nonsmokers	12.5	11.7	12.7	no
smokers	20.8	25.4	19.4	yes
Other Females				
nonsmokers	16.8	16.4	16.9	no
smokers	13.8	6.3	16.3	no
Other Males				
nonsmokers	17.1	14.9	17.7	no
smokers	28.9	24.0	30.0	no

Tests of Significance at $p<0.05$

C. Smoking rates, state regulations and perceptions of ease or difficulty of purchase

While state laws may affect whether it is difficult for teens to purchase tobacco, restrictions do not necessarily have a direct effect on smoking behavior. Moreover, how difficult it *actually* is for teens

to purchase cigarettes may not affect smoking behavior as much as how difficult teens *perceive* making such purchases to be.

Table 4 reports smoking rates stratified by: (1) individual perceptions of how difficult it is for a minor to purchase tobacco, (2) whether the state allows retail licenses to be suspended or revoked for sale to minors, and (3) the minimum legal age of purchase in 1990 and in 1992.[60] Since smoking behaviors develop over time,[61] the laws of two to three years prior to the survey may be most pertinent for older teens.

One might expect that youths who perceive it to be difficult to purchase cigarettes would be less likely to smoke. However, as Table 4 indicates, the opposite is true. The smoking rate for those who consider it difficult for minors to purchase tobacco is much higher than the rate for those who consider it easy. This result undoubtedly reflects the greater knowledge of smokers about retailers' practices; smokers have more direct experience in eucountering the obstructionist effect of regulations. However, the result is disconcerting because it indicates that difficulty in obtaining tobacco products is hardly insurmountable.

Table 4 also shows that teen smoking rates do not differ significantly[62] based on whether the state's sanctions for selling tobacco to minors are more or less restrictive.[63] Finally, Table 4 indicates that there is no consistent pattern to smoking rates based on the minimum legal age of purchase.[64] Taken as a whole, these findings suggest that regulations, at least as enforced in 1992-93, do not have a large impact on smoking rates. Given how few teens report having difficulty in purchasing tobacco,[65] these findings are not surprising.

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60. Table 4 figures are the author's calculations, which are based on a sample of self-respondents to the September 1992, January 1993 and May 1993 Tobacco Use Supplements to the CPS. The sample consists of household members ages 15 to 20.

61. *See* YOUTH & TOBACCO, *supra* note 1, at 68 (describing the continuum of smoking behavior as "one that occurs in four stages: initiation, experimentation, regular smoking, and dependence or addiction").

62. The exception is white females, who have a higher smoking rate in more restrictive states.

63. In Table 4 the author refers to states that allow retail licenses to be suspended or revoked for tobacco sales to minors as "more restrictive" and to those that do not as "less restrictive."

64. The only exception is for uon-white females, who report a substantially higher smoking rate in states without a legal minimum. However, this result is potentially misleading because the sample sizes of non-whites are very small in those states.

65. *See supra* note 55 and accompanying text.

TABLE 4: SMOKING RATES BY PERCEPTIONS OF DIFFICULTY FOR MINORS TO PURCHASE TOBACCO AND STATE RESTRICTIONS

Perceptions	White	White	Other	Other
ages 15-20				
Difficult to purchase	31.4	27.8	6.5	15.4
Easy to purchase	15.9	17.3	8.1	8.5
ages 15-17				
Difficult to purchase	19.6	19.1	4.0	6.7
Easy to purchase	9.3	10.6	4.4	4.1
State Sanctions				
ages 15-20				
More Restrictive	19.1	17.5	8.1	8.0
Less Restrictive	16.8	18.7	7.4	9.8
ages 15-17				
More Restrictive	11.3	11.1	4.2	4.5
Less Restrictive	9.8	11.7	4.0	4.2
Minimum purchase age, 1990				
ages 15-20				
None	18.2	20.2	18.0	7.4
Under 18	16.7	19.1	6.4	10.6
Ages 18 or older	17.4	17.9	7.1	9.1
ages 15-17				
None	12.4	12.5	6.8	1.6
Under 18	10.3	13.5	3.0	5.0
Ages 18 or older	9.8	10.7	4.3	4.5
Minimum purchase age, 1992				
ages 15-20				
None or under 18	12.7	19.5	16.3	7.0
Ages 18 or older	17.5	18.4	7.2	9.5
ages 15-17				
None or under 18	8.4	14.4	10.3	3.3
Ages 18 or older	10.2	11.4	3.8	4.5

Various factors other than concern about teen tobacco use affect the strength of regulations. The legal age of purchase may reflect the social norms of the state. Allowing minors to purchase cigarettes certainly seems to be a clear indicator that a state considers tobacco use by minors to be acceptable. For example, some (but not all) tobacco producing states had—in 1990—low minimum ages for the legal purchase of tobacco,[66] which may suggest that tobacco use was integrally linked to the states' economies, and was therefore socially acceptable. Smoking rates are likely to be higher in such states.[67] On the other hand, a low minimum age may simply reflect low teen smoking rates within the state and therefore the absence of a problem that needs fixing.[68] A third explanation for a state's low minimum age may be a general political tendency within the state to limit government intervention. In these states, teen smoking rates may be low or high independent of any regulatory scheme.

IV. ALTERNATIVES TO REGULATION

Regulation is only one of the tools available to combat youth smoking. Other approaches include the use of education and parental restrictions. In this Part, I provide evidence on the potential impact of these alternative tools.

A. Education: Habit versus Addiction

Although smoking has some short-term health consequences, the worst health consequences are deferred to the future.[69] Consequently, many smokers may believe that they will quit before suffering serious health effects.[70] An important component of educating youths about

66. The top five tobacco producing states are North Carolina, Kentucky, Tennessee, South Carolina, and Virginia. *See* NATIONAL AGRIC. STATISTICS SERV., U.S. DEP'T OF AGRIC., STATISTICAL HIGHLIGHTS OF U.S. AGRICULTURE 10 (1997-1998) (based on cash receipts). The respective minimum purchase ages in these states as of 1990 were 17, none, 18, 18, and 16.

67. As of 1990, the smoking rates for the top five tobacco producing states were: North Carolina, 28.0%; Kentucky, 29.1%; Tennessee, 26.7%; South Carolina, 24.9%; and Virginia, 22.6%. The median smoking rate for all states was 22.7%. *See* CDC 1994, *supra* note 7, at 29-30.

68. For example, as of 1990, the smoking rate in Montana, a state with no minimum age requirement, was only 19.4%, a rate well below the 22.7% national median. *See id.*

69. *See generally* OFFICE ON SMOKING & HEALTH, U.S. DEP'T OF HEALTH & HUMAN SERVS., REDUCING THE HEALTH CONSEQUENCES OF SMOKING: 25 YEARS OF PROGRESS, A REPORT OF THE SURGEON GENERAL chs. 2-3 (1989) (detailing the long-term detrimental effects of smoking).

70. *See* Paul Slovic, *Do Adolescent Smokers Know the Risks?*, 47 DUKE L.J. 1133, 1140

smoking is raising their awareness that nicotine is addictive, which makes it difficult to quit smoking.

As the perceived costs of quitting smoking rise, people should be less willing to begin to smoke. Consequently, an important determinant of teenage smoking rates may be whether teenagers perceive smoking as a habit, an addiction, both or neither. One would expect that youths who consider smoking neither a habit nor an addiction to be the most likely to smoke, since this suggests that they consider smoking to be a behavior that can easily be abandoned. Those that consider smoking to be strictly a habit would seem likely to have the next highest smoking rates; habits are considered difficult to change, but less so than addictions. Individuals who consider smoking to be an addiction should be among the least likely to smoke since they presumably consider smoking to cause a physical dependency that is not easily eliminated. Finally, depending on how the question is interpreted, one would expect that youths who consider smoking to be both a habit *and* an addiction would be either the least likely to smoke because they perceive it as doubly hard to quit, or less likely to smoke than those who consider smoking only a habit, and more likely to smoke than those who consider smoking ouly an addiction, because they perceive smoking to be "in between" habit and addiction.

Table 5 presents descriptive statistics on these perceptions.[71] Overall, 98% of the sample consider smoking to be a habit, an addiction, or both. It is considered to be primarily an addiction by 20.9% of the sample, while 18.5% consider it primarily a habit, and 58.5% consider it both. The near-consensus that smoking does have habituating powers, if not addictive ones, is reassuring.

(1998).

71. Table 5 figures are the author's calculations, which are based on a sample of self-respondents to the September 1992, January 1993 and May 1993 Tobacco Use Supplements to the CPS. The sample consists of household members ages 15 to 20.

TABLE 5: PERCEPTIONS OF WHETHER SMOKING IS A HABIT OR AN ADDICTION

Percent who consider smoking:

	Addiction	Habit	Both	Neither
ages 15-20				
All	20.9	18.5	58.5	2.2
All nonsmokers	22.4	17.0	58.8	1.8
All smokers	13.2	26.0	56.7	4.2
White Female nonsmokers	20.8	14.5	63.4	1.3
White Females smokers	11.9	24.9	59.7	3.4
White Male nonsmokers	24.2	16.1	58.1	1.6
White Male smokers	14.9	25.0	55.6	4.6
Other Female nonsmokers	21.3	23.2	52.8	2.8
Other Female smokers	11.6	35.7	47.3	5.4
Other Male nonsmokers	24.5	25.6	46.3	3.6
Other Male smokers	11.9	36.3	45.2	6.7
ages 15- 17				
All	21.6	16.7	59.6	2.1
All nonsmokers	22.6	15.7	59.9	1.9
All smokers	13.0	25.3	57.3	4.4
White Female nonsmokers	21.0	13.3	64.4	1.4
White Female smokers	11.2	25.0	59.1	4.7
White Male nonsmokers	24.4	14.9	59.0	1.7
White Male smokers	15.4	23.6	56.4	4.6
Other Female nonsmokers	21.6	22.4	53.7	2.4
Other Females smokers	8.3	36.1	55.6	0.0
Other Male nonsmokers	22.8	24.7	48.0	4.5
Other Male smokers	8.8	41.2	47.1	2.9

However, these overall patterns mask striking differences between smokers and nonsmokers in their perceptions. Smokers are far more likely than nonsmokers to consider smoking a habit or neither a habit nor an addiction, and are far less likely to consider smoking an addiction. Overall, 30.2% of the smokers consider smoking a habit or neither a habit nor an addiction, while only 18.8% of the nonsmokers view smoking that way. There is evidence that non-whites are less likely than whites to consider smoking to be addictive, but the difference in perceptions by smoking status appears across all age, race and gender groups.

TABLE 6: SMOKING RATES BY PERCEPTIONS OF WHETHER SMOKING IS A HABIT OR ADDICTION

	Addiction	Habit	Both	Neither
ages 15-20				
All	10.4	23.1	15.9	31.4
White Females	10.9	26.9	16.7	35.4
White Males	12.3	26.1	17.9	39.2
Other Females	4.4	11.4	7.0	14.0
Other Males	5.0	13.2	9.5	16.7
ages 15- 17				
All	6.0	15.0	9.5	20.7
White Females	5.8	17.9	9.6	28.6
White Males	7.7	17.3	11.2	26.3
Other Females	1.7	6.7	4.4	0.0
Other Males	1.7	7.1	4.3	2.9

Table 6 presents smoking rates stratified by perceptions of whether smoking is a habit, an addiction, both or neither.[72] These findings are quite dramatic. As the analysis of Table 5 suggested, the smoking rates for those individuals who consider smoking to be addictive are substantially lower than for those who do not. The magnitude of the difference in smoking rates according to perceptions are

72. Table 6 figures are the author's calculations, which are based on a sample of self-respondents to the September 1992, January 1993 and May 1993 Tobacco Use Supplements to the CPS. The sample consists of household members ages 15 to 20.

large. For the full sample, the smoking rate of those who consider smoking neither a habit nor an addiction is three times that of those who consider it an addiction. The overall smoking rate for those that consider it neither a habit nor an addiction is 31.4%; for those ages fifteen to seventeen it is 20.7%. In contrast, the smoking rates for those who consider smoking addictive is 10.4% overall, and 6.0% for those ages fifteen to seventeen. Smoking rates are particularly high for white teens who do not perceive smoking to be either a habit or an addiction.

B. Home Restrictions

Another mechanism for reducing smoking is to impose limitations on where people can smoke. For instance, smoking restrictions in workplaces and restaurants are quite common, and smoking is not usually allowed in schools.[73] Thus, most teen smoking must occur either outside or at home. Restricting smoking at home may therefore help to curb smoking. Below I examine whether smoking rates are affected by home restrictions.

Table 7 presents evidence concerning the influence of home smoking restrictions on teen smoking rates.[74] Smoking rates vary considerably with household smoking policies. Teens who are not permitted to smoke in their homes have a smoking rate that is one-third to one-half the rate of those who live in households where smoking is permitted. Among white teens who live in households where smoking is permitted, 25% smoke. Fifteen percent of those ages fifteen to seventeen smoke. The smoking rate is far lower for teens who live in households where smoking is not permitted: overall, 7.4% of the white females and 10.8% of the white males in these households smoke. The numbers show a similar pattern for non-white teens: the smoking rate is 13% for those who live in households where smoking is permitted, while less than 4% for those who live in households where smoking is not permitted.

73. *See supra* note 3 and accompanying text.

74. Table 7 figures are the author's calculations, which are based on a sample of self-respondents to the September 1992, January 1993 and May 1993 Tobacco Use Supplements to the CPS. The sample consists of household members ages 15 to 20.

TABLE 7: SMOKING RATES BY WHETHER SMOKING IS ALLOWED AT HOME

	White Females	White Males	Other Females	Other Males
ages 15-20				
Not allowed	7.4	10.8	3.0	4.0
Allowed	25.4	24.8	11.5	14.3
ages 15-17				
Not allowed	5.6	7.2	2.6	1.3
Allowed	14.4	15.7	5.3	7.5

These findings suggest that parents' restrictions can have an important influence on whether their children smoke, in part by limiting opportunities to smoke. Even parents who smoke may be able to influence their children's behavior by prohibiting smoking at home.[75] However, parents need to know whether their children smoke in order to be as effective as possible in influencing their behavior. Unfortunately, the evidence suggests that parents are not well informed about their children's smoking behavior.

C. Parents' Information

Parents can use a variety of approaches to influence their children's behavior, such as discussing the consequences of their actions with them, and withholding privileges or allowances to provide incentives to alter behaviors that parents consider undesirable. Parents can use these tools to dissuade their children from smoking—but only if they know whether or not their children smoke. However, unlike easily monitored activities such as school attendance or performance on exams, parents do not have an easy way to know about their children's smoking behavior. To investigate the extent of parents' knowledge, I compared smoking rates reported by the youths themselves to those reported by proxies.

75. While it is tempting to believe that teens who smoke have parents who smoke, the evidence on that is mixed. *See* YOUTH & TOBACCO, *supra* note 1, at 129-30. Indeed, there is evidence that indicates peer group pressure is more important than parental behavior in determining whether a teen smokes. *See id.* at 131.

TABLE 8: SMOKING RATES BY SELF VERSUS PROXY REPORTING STATUS

	All ages 15-20	All ages 15-17	White Females	White Males	Other Females	Other Males
Self report	16.1	9.7	17.3	18.4	7.6	9.4
Sample size	18,303	10,101	7,932	7,096	1,797	1,478
Any proxy	9.6	6.2	9.0	12.3	3.5	6.4
Sample size	10,625	5,226	3,858	4,573	983	1,211
Proxy is parent	8.0	5.5	7.7	10.0	3.6	4.7
Sample size	7,970	4,106	2,953	3,492	673	852

Table 8 presents smoking rates calculated from data gathered from proxy respondents and from self-respondents.[76] The smoking rate varies substantially between the self-responding sample and the sample with a proxy respondent. For the self-responding sample, the overall teen smoking rate is 16.1%. However, in the sample with a proxy respondent, the overall teen smoking rate is only 9.6%. Except as regards non-white female teens, the rate reported by parents is considerably lower than that reported by any other type of proxy respondent.[77] Since the proxy respondent is the teen's parent in 75% of the cases, it is highly likely that parents are not well-informed about their children's smoking behavior.

For each gender and race group, the difference between the self-reported rate and the proxy rate is significant at the 1% level. The disparity between self-reported smoking behavior and proxy-reported behavior is particularly pronounced for girls: the self-reported rate is nearly double the proxy rate for both white and non-

76. Table 8 figures are the author's calculations, which are based on a sample of proxy and self-respondents to the September 1992, January 1993 and May 1993 Tobacco Use Supplements to the CPS.

77. In comparison to the 9.6% overall teen smoking rate reported by any proxy, the overall teen smoking rate reported by a parent is a mere 8%.

white girls. The self-reported rate for boys is about 50% higher than the proxy rate.

The same types of parental incentives used to encourage good school performance might be effective in reducing teen smoking. These results, however, suggest a critical missing informational link. Parents are not well informed about their children's smoking behavior. Thus, they may be largely unaware of the necessity of attempting to influence smoking behavior, by restrictions or otherwise.

V. NEW POLICIES AND THEIR LIKELY EFFECT ON TEEN SMOKING

Two additional means of reducing teen smoking are currently in vogue: taxation and regulation. Each of these shows substantial promise in controlling youth smoking, and I discuss the likely effectiveness of these approaches below.

A. Taxation

One approach to controlling teen smoking is market-based: raising the price of cigarettes discourages purchase. This approach may be especially effective for teens.

The price elasticity of demand[78] for a consumer good provides information on the magnitude of the change in consumption that will result from a change in price. The price elasticity for most goods is negative, because the quantity demanded usually decreases as price increases.[79] The magnitude of the price elasticity enables one to predict how a given change in price would effect the quantity demanded.[80] For example, if the price elasticity were -2.0, a 10% increase in price would cause a 20% decrease in quantity demanded.[81]

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78. For simplicity, "price elasticity of demand" will be shortened to "price elasticity."

79. *See* MICHAEL D. INTRILIGATOR ET AL., ECONOMETRIC MODELS, TECHNIQUES, AND APPLICATIONS 242, 246 (2d ed. 1996).

80. *See id.* at 242 (defining price elasticity of demand as "giving the percentage change in the quantity demanded for a 1% change in the price of [the] good").

81. In equation form:

percent change in quantity demanded = (price elasticity)(percent change in price)

See id. Thus, for a price elasticity of demand of –2.0, a 10% increase in price would result in a 20% decrease in quantity demanded:

-20% = (-2.0)(10%)

Many studies have estimated elasticities for tobacco.[82] In general, these studies find price elasticities significantly different from zero, usually ranging from -0.4 to -1.0, with long-run elasticities tending to be greater than short-run elasticities.[83] There are fewer studies which have estimated price elasticities of tobacco for teens, but the results of these studies show little variation. Professor Lewit et al. found a large reduction in youth smoking with higher prices, with most of the effect of higher prices taking the form of a reduction in the number of teen smokers, rather than a reduction in the number of cigarettes smoked by each teen smoker.[84] This general finding has been corroborated in a number of studies.[85] The cigarette price elasticity for teens in the Lewit study was -1.44, which is about three times the value typically found for adults.[86]

Since virtually all studies find a significant negative price elasticity,[87] it is highly likely that a large increase in the tax rate on tobacco, such as the increase currently proposed,[88] would lead to a substantial reduction in smoking. Since the price elasticity estimated for teens is

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See generally id. at 238-74 (discussing demand analysis as applied to households).

82. *See* W. KIP VISCUSI, SMOKING: MAKING THE RISKY DECISION 102-05 tbls.5-6 (1992) (summarizing 41 studies estimating price elasticities for tobacco).

83. *See id.*

84. *See* Eugene M. Lewit et al., *The Effects of Government Regulation on Teenage Smoking*, 24 J.L. & ECON. 545, 560 (1981).

85. *See* YOUTH AND TOBACCO, *supra* note 1, at 275 ("Econometric and other studies indicate that increases in the real price of cigarettes significantly reduce cigarette smoking; young people are at least as responsive as adults to such price changes").

86. *See* Lewit et al., *supra* note 84, at 549, 560 (reporting a price elasticity for adults of approximately -0.4). In contrast, in estimates which include price, a regulation index and a time trend, Jeffrey Wasserman found that price is not a significant determination of either smoking participation or of the number of cigarettes consumed by either adults or teens. *See* Jeffrey Wasserman et al., *The Effects of Excise Taxes and Regulations on Cigarette Smoking*, 10 J. HEALTH ECON. 43, 55-57 (1991) (noting that estimated price elasticities are not statistically different from zero and that, using 1985 data, increasing cigarette prices by 10% would decrease overall per capita smoking by 2.3%). However, as Michael Grossman notes in his editorial remarks, the regulation index used in Wasserman's study is strongly correlated with price, which may lead the estimate of the price elasticity to be biased towards finding an insignificant effect. *See* Michael Grossman, *The Demand for Cigarettes*, 10 J. HEALTH ECON. 101, 101-03 (1991). Further, the regulation index may instead be less pertinent to teens who spend most of their time in school, and may instead be a proxy for public anti-smoking sentiment.

87. *See* VISCUSI, *supra* note 82, at 105 (noting that most price elasticities in the 41 studies summarized were between -0.4 and -1.0).

88. *See* John Schwartz, *Clinton Aides, McCain Vow Strong Tobacco Bill; Industry Lawyer Says Walkout From Legislative Process Was 'Absolutely Not' a Bluff*, WASH. POST, Apr. 13, 1998, at A2 (reporting that the McCain bill proposes an increase in tobacco taxes of $1.10 per pack of cigarettes).

generally larger than that for adults,[89] any price increase should lead to a larger reduction in the teen smoking rate than in the adult rate.

The large negative price elasticity of demand for cigarettes by teens strongly indicates that substantially higher prices should be effective in reducing smoking by minors. However, political realities may limit the magnitude of price increases, considering that an across-the-board price increase affects voting adults—who have the legal right to smoke—as well as minors. While new regulations targeted directly at minors are less controversial, they may also be less successful in reducing teen smoking rates.

B. Regulations

A second mechanism for reducing youth smoking is direct regulation of the activity. As shown above, teen smoking rates are high, and there is little relation between the smoking rate of teens and the strength of state restrictions on sales to minors.[90] This result is undoubtedly due to the fact that even in the most restrictive jurisdictions, most teens find it easy to purchase cigarettes.

However, there are two recent efforts that may lead to better enforcement of restrictions on sales to teens. In 1992, Congress enacted the Alcohol, Drug Abuse and Mental Health Administration (ADAMHA) Reorganization Act,[91] which, among other things, provided block grants to states for the prevention and treatment of substance abuse.[92] The Act contains a provision targeted at "reduc[ing] the extent to which tobacco products are available to individuals under the age of 18."[93] Under this provision, block grant funding depends upon states not only having laws prohibiting the sale and distribution of tobacco products to minors in effect by fiscal year 1994 or 1995, but also upon the enforcement of such laws: the grants are supposed to be reduced if states do not comply with the Act's enforcement and reporting requirements.[94] Those requirements mandate that states conduct random, unannounced inspections of retail establish-

89. *See supra* notes 84-86 and accompanying text.

90. *See supra* notes 62-63 and accompanying text.

91. Pub. L. No. 102-321, 106 Stat. 323 (1992) (codified in scattered sections of 42 U.S.C.).

92. *See* Pub. L. No. 102-321, § 202, 106 Stat. 323, 388-403 (codified at 42 U.S.C. §§ 300x-21 to 300x-35 (1994)).

93. 42 U.S.C. § 300x-26(b)(1) (1994).

94. *See id.* § 300x-26(a), (b), (d). The later starting date is provided to accommodate states with legislatures that did not convene regular sessions in either 1993 or 1994. *See id.* § 300x-26(a).

ments and submit annual reports detailing the effectiveness of enforcement efforts during the previous year as well as strategies for enforcement during the coming year.[95] States risk reductions in their block grants for substance abuse funding if they fail to meet goals in reducing the availability of tobacco to minors.[96]

Further regulations designed to restrict teen access to tobacco products have been imposed by the FDA. Since February 1997, retailers have been required to check the photo identification of anyone purchasing tobacco who appears to be under the age of twenty-seven.[97] The FDA has contracted with a number of states to randomly check compliance by sending adolescent customers into stores in attempts to purchase tobacco.[98] However, the penalties for noncompliance are fairly light. First-time violators will be issued a warning by the FDA and will be more likely to be inspected again; second-time violators may be fined $250.[99]

These additional enforcement mechanisms are certainly a step in the right direction. Unlike previous laws, these new regulations have well-defined mechanisms for identifying noncompliance, as well as tangible financial incentives for states to comply with the regulations.

As with previous policy efforts, however, there is no assurance of effectiveness: teen smoking has risen despite the regulatory efforts of the early 1990s. Since the majority of states had established a minimum age of eighteen by 1992, and all states did so by 1995, the next phase of regulation must involve compliance inspections and other enforcement procedures. However, states have not received additional funding for enforcement of these new regulations, and federal funds cannot be used for enforcement purposes. States may use Substance Abuse Prevention and Treatment Block Grant funds for the

95. *See id.* § 300x-26(c) (stating that failure to comply with enacting and enforcement provisions will result in a 10% reduction in block grant funding the first fiscal year with the reduction increasing by 10% each year thereafter to a maximum of 40%).

96. *See id.* § 300x-26(b)(2).

97. *See* 21 C.F.R. § 897.14(b) (1998) (effective Feb. 28, 1997).

98. *See* FDA, *Children & Tobacco: Frequently Asked Questions About the New FDA Tobacco Regulations Draft Guidance* [hereinafter *Draft Guidance*] (last modified Mar. 4, 1998) <http://www.fda.gov/opacom/campaigns/tobacco/ctfaqs.html>. The states contracting with the FDA are: Arkansas, California, Colorado, Florida, Illinois, Massachusetts, Minnesota, North Carolina, Pennsylvania, Texas, and Washington. *See Crackdown Doesn't Keep Teens From Buying Cigarettes: Buying Tobacco is Not Hard, Survey Discovers Ad Campaign Will Target Sellers*, ST. LOUIS POST-DISPATCH, Mar. 1, 1998, at A6.

99. *See Draft Guidance*, *supra* note 98, at *5.

development and implementation of random inspections,[100] but doing so reduces the amount of money available for other services. States may be unwilling to divert scarce funds towards enforcement. Without additional state funding, the chance that a retailer will receive a compliance check is likely to be small, since the law only requires that each outlet have a non-zero probability of being selected.[101] Moreover, as noted earlier, the penalties for noncompliance with the additional regulations are light.[102]

CONCLUSION

In general, the findings presented above suggest that regulations, as structured and enforced as of 1992-93, have little effect on teen smoking. Most teens do not consider it difficult for minors to purchase tobacco products within their community. There are only slight variations in smoking rates between states with different age minimums for legal purchase. In addition, the smoking rates in states with very strict sanctions on sales to minors are not lower than the smoking rates in states with lesser sanctions. Teens who consider it difficult for minors to buy tobacco products have higher smoking rates than those who find it easy. While this may reflect the greater knowledge of smokers about the difficulty of purchasing tobacco, it also suggests that additional restrictions on tobacco purchases are unlikely to have a large impact on teen smoking rates unless the new restrictions are much more effectively enforced than are those currently in place.

Beyond regulation, education and parental restriction can potentially reduce teen smoking. Teens vary in their opinion about whether smoking is an addiction or a habit and smoking rates are strongly affected by perceptions about the addictive nature of smoking. The data—summarized in Tables 5 and 6—support the conclusion that individuals who consider smoking to be a habit, rather than an addiction, are more likely to smoke because they believe that they can quit at any time. This finding suggests that facilitating greater awareness of the addictive power of cigarettes may be effective in preventing smoking among teens.

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100. *See* Substance Abuse & Mental Health Servs. Admin. (SAMHSA), *The Fact Is...* (last modified Feb. 24, 1998) <http://www.samhsa.gov/csap/synar/fctsheet.htm>.

101. *See* SAMHSA, *Frequently Asked Questions and Answers* (last modified Feb. 24, 1998) <http://www.samhsa.gov/csap/synar/faq.htm>.

102. *See supra* note 99 and accompanying text.

Moreover, parents may be able to influence smoking behavior by limiting opportunities of their children to smoke. To the extent that household smoking rules are made by parents and reflect their attitudes and behaviors, this suggests that parents' restrictions can be an important determinant of teen smoking behavior. However, parents can only effectively deter their children's smoking if they are aware of whether and how much their children smoke, and the data presented in Table 8 suggest that parents are not well informed about their children's smoking behavior.

The new FDA regulations, which target the reduction of sales to minors,[103] represent a traditional type of attack on teen smoking. Unfortunately, so far this approach has been unsuccessful, as discussed in Part III. Other avenues may be more fruitful. For example, implementing stringent penalties for possession or use of tobacco products by minors is a relatively untested strategy, although it is unclear whether this would be politically feasible.

103. *See* Regulations Restricting the Sale and Distribution of Cigarettes and Smokeless Tobacco to Protect Children and Adolescents, 61 Fed. Reg. 44,396, 44,396 (1996) ("[These regulations] will reduce children's and adolescents' easy access to cigarettes and smokeless tobacco and will significantly decrease the amount of positive imagery that makes these products so appealing to that age group.").