Article

The Costs of Cigarettes: The Economic Case for Ex Post Incentive-Based Regulation

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I. INTRODUCTION: DEFINING THE PROBLEM

A. *A Brief History of Cigarette Regulation*

Cigarette smoking causes over 420,000 deaths annually in the United States, roughly twenty percent of all U.S. deaths,¹ making cigarettes the single greatest preventable cause of death in this country.² Indeed, tobacco kills more people every year than alcohol, illicit drugs, automobile accidents, violent crime, and AIDS combined.³ And not only are cigarettes deadly to smokers; they kill nonsmokers as well. According to a recent report from the Environmental Protection Agency (EPA), the "sidestream" or "passive" smoke from cigarettes—so-called environmental tobacco smoke (ETS)—is responsible annually for approximately 3000 lung cancer deaths, between 150,000 and 300,000 lower respiratory ailments in children, and approximately 37,000 heart disease deaths.⁴

Considering the staggering social costs imposed by cigarette smoking, an outside observer might find it odd that cigarette production and consumption in this country are, to a remarkable extent, unregulated. It is true that selling

1. See U.S. DEP'T OF HEALTH & HUMAN SERVS., SMOKING AND HEALTH IN THE AMERICAS 106 (1992) (reporting an annual smoking-death rate of approximately 434,000); *Cigarette Smoking-Attributable Mortality and Years of Potential Life Lost—United States, 1990*, 42 MORBIDITY & MORTALITY WKLY REP 645, 645-49 (1993) (reporting an annual smoking-death rate of approximately 420,000, which was approximately 20% of all United States deaths in 1990); see also RICHARD PETO ET AL., MORTALITY FROM SMOKING IN DEVELOPED COUNTRIES, 1950-2000, at A.7 & tbl.1 (1994) (discussing the worldwide health effects of cigarettes and estimating that smoking kills two million people each year in developing countries alone).

2. See AMERICAN CANCER SOC'Y, CANCER FACTS & FIGURES—1997, at 23 (1997), cf. Carl E. Bartecchi et al., *The Human Costs of Tobacco Use* (pt. 1), 330 NEW ENG. J. MED. 907, 907-10 (1994) (noting many adverse health consequences of smoking); Polly A. Newcomb & Paul P. Carbone, *The Health Consequences of Smoking: Cancer*, 76 MED. CLINICS N. AM. 305, 311-24 (1992) (detailing the various types of cancer caused by cigarette smoking); Nicholas J. Wald & Allan K. Hackshaw, *Cigarette Smoking An Epidemiological Overview*, 52 BRIT. MED. BULL. 3, 3 (1996) (summarizing the health problems caused by smoking).

3. See Regulations Restricting the Sale and Distribution of Cigarettes and Smokeless Tobacco To Protect Children and Adolescents, 61 Fed. Reg. 44,396, 44,398 (1996) ("Tobacco alone kills more people each year in the United States than acquired immunodeficiency syndrome (AIDS), car accidents, alcohol, homicides, illegal drugs, suicides, and fires, combined."); J. Michael McGinnis & William H. Foege, *Actual Causes of Death in the United States*, 270 JAMA 2207, 2208 (1993). For a general summary of the ill-health effects of cigarettes, see Graham E. Kelder, Jr. & Richard A. Daynard, *The Role of Litigation in the Effective Control of the Sale and Use of Tobacco*, 8 STAN. L. & POL'Y REV. 63, 64-65 (1997). For a detailed summary of all the known or suspected ill-health consequences of smoking as of 1989, see OFFICE ON SMOKING & HEALTH, U.S. DEP'T OF HEALTH & HUMAN SERVS., REDUCING THE HEALTH CONSEQUENCES OF SMOKING: 25 YEARS OF PROGRESS 37-101 (1989) [hereinafter SURGEON GENERAL'S PROGRESS REPORT].

4. See U.S. ENVTL. PROTECTION AGENCY, RESPIRATORY HEALTH EFFECTS OF PASSIVE SMOKING LUNG CANCER AND OTHER DISORDERS 3 (1992) [hereinafter EPA, PASSIVE SMOKING], U.S. ENVTL. PROTECTION AGENCY, SETTING THE RECORD STRAIGHT: SECONDHAND SMOKE IS A PREVENTABLE HEALTH RISK 1, 44 (1994) [hereinafter EPA, SETTING THE RECORD STRAIGHT]; see also Elizabeth T.H. Fontham et al., *Environmental Tobacco Smoke and Lung Cancer in Nonsmoking Women*, 271 JAMA 1752, 1759 (1994) (confirming the EPA's 1994 conclusions in the largest case-control study ever conducted on the subject).

cigarettes to minors is illegal in every state.⁵ It is also true that a number of states and municipalities have passed laws and ordinances restricting the right to smoke in various public domains—from government buildings and health facilities to, in some cases, private workplaces.⁶ And if one compares these levels of regulation to the level of regulation imposed on, say, bubble gum consumption, cigarette smoking seems fairly heavily regulated.⁷ If, however, one compares cigarettes with other products that are considered dangerous but are comparatively less costly to society, such as heroin or cocaine,⁸ the level of cigarette regulation seems inadequate. After all, adult smoking is legal in all fifty states. Likewise, if one compares the hands-off approach to regulating cigarette companies with the hands-on approach to regulating, say, pharmaceutical companies (many of whose products treat or even cure, rather than cause, serious health problems), tobacco companies appear to be essentially unregulated. Of the tobacco regulations that do exist, many turn out to be industry-friendly.⁹ On top of all this, until very recently it appeared that

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5. See Jennifer McCullough, Note, *Lighting Up the Battle Against the Tobacco Industry: New Regulations Prohibiting Cigarette Sales to Minors*, 28 RUTGERS L.J. 709, 727 n.114 (1997).

6. See Robert A. Kagan & Jerome H. Skolnick, *Banning Smoking: Compliance Without Enforcement*, in *SMOKING POLICY: LAW, POLITICS, AND CULTURE* 69, 69-70 (Robert L. Rabin & Stephen D. Sugarman eds., 1993) [hereinafter *SMOKING POLICY*].

7. But cf. Alix M. Freedman & Suein L. Hwang, *Burning Questions: Tobacco Pact's Limits—and Its Loopholes—Presage Fierce Debate*, WALL ST. J., June 23, 1997, at A1 (arguing that cigarettes receive "less government oversight of [their] contents and marketing than ice cream").

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

9. Each of the two most significant prior efforts to regulate cigarette manufacturers—through warning requirements and advertising bans—turned out to favor the cigarette industry. See Public Health Cigarette Smoking Act of 1969, Pub. L. No. 91-222, 84 Stat. 87 (codified as amended at 15 U.S.C. §§ 1331-1340 (1994)); Federal Cigarette Labeling and Advertising Act, Pub. L. No. 89-92, 79 Stat. 282 (1965) (codified as amended at 15 U.S.C. §§ 1331-1340). Tobacco companies fought against the warning requirements imposed by Congress but ultimately used the warnings as an effective shield against some types of tort suits. See *Cipollone v. Liggett Group, Inc.*, 505 U.S. 504, 520-31 (1992) (plurality opinion); *Cipollone v. Liggett Group, Inc.*, 649 F. Supp. 664, 675 (D.N.J. 1986) ("It is ironic that the legislation which the tobacco company sought so hard to defeat now serves to substantially immunize it from liability . . ."); Margaret Jane Porter, *The Lohr Decision: FDA Perspective and Position*, 52 FOOD & DRUG L.J. 7, 9 (1997) (explaining that *Cipollone* stands for the proposition that federal law preemption provisions may apply to state tort law claims). When cigarette advertising on television was banned in 1971, see Public Health Cigarette Smoking Act § 6, 84 Stat. at 95 (codified as amended at 15 U.S.C. § 1335), manufacturers quickly shifted their advertising to other media without any significant harm to their business. One of their strategies was to place their brand imagery in key places for televised sporting events, thus ensuring continued TV exposure—without the antismoking ads that had previously been coupled with their own TV spots (pursuant to the "fairness doctrine" promulgated by the FCC in 1967). See *Capital Broad. Co. v. Mitchell*, 333 F. Supp. 582, 589 (D.D.C. 1971) (Wright, J., dissenting) ("The result of the legislation was that as both the cigarette advertisements and most anti-smoking messages left the air, the tobacco companies transferred their advertising budgets to other forms of advertising such as newspapers and magazines where there was no fairness doctrine to require a response."), *aff'd mem.*, 405 U.S. 1000 (1972). The ban also had the effect of making entry more difficult for potential competitors. Finally, the ban "ma[de] it nearly impossible for states and municipalities to restrict or ban the tobacco industry's promotional activities." Kelder & Daynard, *supra* note 3, at 68. On net, the advertising ban appears to have been to the clear advantage of the industry. See Freedman & Hwang, *supra* note 7. For a discussion of the inefficacy of previous attempts to regulate cigarette advertisements, see RICHARD KLUGER, *ASHES TO ASHES: AMERICA'S HUNDRED-YEAR CIGARETTE WAR, THE PUBLIC HEALTH, AND THE UNABASHED TRIUMPH OF PHILIP MORRIS* 279-80, 298-99 (1996). Cf. Kelder & Daynard, *supra* note 3, at 63 (observing that "the industry takes an active part in trying to pass weak, industry-friendly, tobacco control legislation

cigarette companies, unlike most product manufacturers, were effectively immune from regulation by tort law.¹⁰

How can this be? A good case can be made that the cigarette industry owes its privileged, lightly regulated status largely to the perseverance and ingenuity of its lawyers and to an unprecedented level of industry cooperation and solidarity. By amassing an immense lobbying war chest,¹¹ by developing a uniquely aggressive public relations and advertising approach,¹² and by adopting a self-described "General Patton" litigation strategy,¹³ the cigarette industry has gained a reputation as unbeatable both in the courtroom and in the public policy arena.

Consider, for instance, the industry's extraordinary ability for many years to avoid paying a penny to any tort plaintiff. Until very recently, the vast majority of decided cases and other legal authorities were hostile to the notion of cigarette manufacturer liability. Cigarette companies had managed not to pay damages (or to settle for a substantial payment) in even a single case brought against them by smoking plaintiffs, notwithstanding two "waves" of tort suits during the fifty years that scholars refer to as the "products liability revolution."¹⁴ Until very recently as well, cigarette plaintiffs could find little

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at the state level throughout the country that would preempt the authority of local governments to control the sale and use of tobacco").

10. See *infra* notes 14, 779, and accompanying text.

11. Senator Edward M. Kennedy said in 1979 of the tobacco industry "Dollar for dollar, they're probably the most effective lobby on Capitol Hill." Robert Pear, *A New Leaf: Now, the Archenemies Need Each Other*, N.Y. TIMES, June 22, 1997, at D1. Industry lobbying efforts were especially intense in 1997, including expenditures of over \$30 million and the employment of such political heavyweights as Howard Baker, George Mitchell, and Ann Richards. See Maureen Dowd, *Integrity Clearance Sale*, N.Y. TIMES, Dec. 20, 1997, at A13. For an excellent summary of the numerous ways in which the tobacco industry has historically employed its lobbying prowess to its benefit, see Kelder & Daynard, *supra* note 3, at 66-71. See also *supra* note 9 (summarizing several failed attempts to regulate the cigarette industry), *infra* note 20 and accompanying text (describing the FDA's reluctance to regulate the cigarette industry).

12. See PHILIP J. HILTS, *SMOKESCREEN: THE TRUTH BEHIND THE TOBACCO INDUSTRY COVER-UP* 17-18 (1996) (describing the tobacco industry's public relations attack on studies connecting smoking and health risks); KLUGER, *supra* note 9, at 23, 71, 292-93, 443 (detailing tobacco-industry marketing strategies, from packaging and labeling techniques to advertisements that appeal to consumer demand for youthful vigor and social and professional success). For a brief sample of the industry's advertising strategies, see *infra* notes 58, 691, and accompanying text.

13. An attorney for R.J. Reynolds (RJR) described the strategy (in an internal memo) as follows:

The aggressive posture we have taken regarding depositions and discovery in general continues to make these cases extremely burdensome and expensive for plaintiffs' lawyers, particularly sole practitioners. To paraphrase General Patton, the way we won these cases was not by spending all of [RJR's] money, but by making that other son of a bitch spend all his

Haines v. Liggett Group, Inc., 814 F. Supp. 414, 421 (D.N.J. 1993) (quoting J. Michael Jordan). Very recent evidence suggests that, in anticipation of possible liability suits against their clients, some tobacco lawyers may have stepped outside of professional ethical boundaries. See Milo Geyelin, *Lawyers Shield Tobacco Firms, Papers Show*, WALL ST. J., Aug. 7, 1997, at A3 (reporting that "lawyers are said to have curtailed research into the safety of cigarettes, cleared the release of information about health studies and even suggested the destruction of unfavorable poll results about smoking and health").

14. E.g., Kelder & Daynard, *supra* note 3, at 71-72. The first wave of tobacco lawsuits began in the 1950s, resulted in major decisions throughout the 1960s, and tapered out in the 1970s. See Robert L. Rabin, *Institutional and Historical Perspectives on Tobacco Tort Liability*, in *SMOKING POLICY*, *supra* note 6, at 110, 110. For the most part, the first wave was decided in negligence regimes. See *id.* at 114. There followed a lull in the 1970s, when few tobacco suits were brought. The second wave commenced in the

reason for hope in the more general trends in products liability law. Whereas the 1960s and 1970s were characterized by an extraordinary expansion of liability, reflecting the then-prominent theory of enterprise liability, that trend largely ended in the mid-1980s. Since then, there has been a substantial retreat from enterprise liability in the courts.¹⁵ In addition, one of tobacco plaintiffs' most promising legal theories, generic product liability,¹⁶ has lost viability. Courts that were moving toward generic product liability, condemning outright particular products as unreasonably dangerous (despite the best possible design, construction, and warnings) and therefore subjecting them to strict liability, have been repeatedly overridden by their state legislatures.¹⁷ Moreover, the reporters for the *Restatement (Third) of Torts*¹⁸ squarely rejected generic products liability.¹⁹

Similarly, for most of this time, the Food and Drug Administration (FDA) avoided any challenge to the nonregulatory status quo. That decision was due, not to a perceived lack of jurisdiction, but to a bureaucratic instinct for self-preservation. In the words of former FDA Commissioner David Kessler: "There was a sense among many within the agency that you couldn't pull it off, and the last thing you wanted was to tackle something you couldn't pull off and have the agency get killed."²⁰

1980s, see *id.* at 110, after the passage of legislation mandating warnings on cigarette packaging and advertising, see Public Health Cigarette Smoking Act, Pub. L. No. 91-222, 84 Stat. 87; Federal Cigarette Labeling and Advertising Act, Pub. L. No. 89-92, 79 Stat. 282, and after most jurisdictions had adopted strict liability, see RESTATEMENT (SECOND) OF TORTS § 402A (1965) (imposing strict liability for physical harm caused by defective products that are unreasonably dangerous to the ultimate user or consumer). At the same time, however, considerable public outcry and scholarly opinion began to emerge against strict liability. See, e.g., George L. Priest, *The Inevitability of Tort Reform*, 26 VAL. U. L. REV. 701, 701-02 (1992).

Only a few years ago, cigarette manufacturers fended off another major attack and successfully maintained their perfect record of products liability victories. See *Cipollone*, 505 U.S. at 530-31 (plurality opinion) (holding that the labeling acts preempted the plaintiff's claims based on a failure to warn, but not claims based on express warranty, some types of fraudulent misrepresentation, or conspiracy). In *Cipollone*, the industry managed to exhaust a plaintiff and a sizeable law firm that had invested large amounts of money in the futile effort. See Henry J. Reske, *Cigarette Suit Dropped*, A.B.A. J., Feb. 1993, at 30, 30.

15. See James A. Henderson, Jr. & Theodore Eisenberg, *The Quiet Revolution in Products Liability: An Empirical Study of Legal Change*, 37 UCLA L. REV. 479, 481 (1990) (noting the increasing percentage of decisions favoring defendants); Gary Schwartz, *The Beginning and the Possible End of the Rise of Modern American Tort Law*, 26 GA. L. REV. 601, 647-48 (1992) (observing a recent judicial retreat from broad liability rules).

16. This theory also goes by the terms generic product risk, categorical liability, and product category liability. See Carl T. Bogus, *The Third Revolution in Products Liability*, 72 CHI.-KENT L. REV. 3, 3 (1996).

17. See James A. Henderson, Jr. & Aaron D. Twerski, *Closing the American Products Liability Frontier: The Rejection of Liability Without Defect*, 66 N.Y.U. L. REV. 1263, 1315 & n.195 (1991); Joseph A. Page, *Liability for Unreasonably and Unavoidably Unsafe Products: Does Negligence Doctrine Have a Role To Play?*, 72 CHI.-KENT L. REV. 87, 108 & n.95 (1996).

18. RESTATEMENT (THIRD) OF TORTS: PRODUCTS LIABILITY (Tentative Draft No. 2, 1995).

19. See *id.* § 2 cmt. c, reporters' note at 94-97; see also Henderson & Twerski, *supra* note 17 at 1314-15 ("[P]roduct-category liability is not now the governing law in any jurisdiction."). But see Bogus, *supra* note 16, at 11-17 (noting strong academic criticism of the new *Restatement*). For an important recent series of articles on generic products liability, see *Symposium on Generic Products Liability*, 72 CHI.-KENT L. REV. 3 (1996).

20. Freedman & Hwang, *supra* note 7. The concern was well-founded, as Kessler was later to discover

Because of the dominant public sentiment regarding smokers and cigarette manufacturers, the prospect of altering this essentially laissez-faire market has long seemed remote. Indeed, the inhospitable legal environment reflects—and is, to some extent, the product of—the traditional American values of self-reliance and individualism, as well as pervasive public hostility toward smokers (the usual plaintiffs).²¹ For a long time, there has been a strong sense among many scholars, commentators, and members of the public that smokers who die prematurely get what they bargained for (and, perhaps, what they deserve) and should not be heard to complain, much less be compensated, when smoking causes its predictable results.²²

Whatever the explanation, cigarette manufacturers have enjoyed substantial immunities from many of the regulatory mechanisms to which almost every other product manufacturer is subject. But, as anyone who reads the newspaper knows, the story does not end there. In the last two or three years, there has been a partial shift in public sentiment, leading to the beginning of a powerful political backlash against the industry.²³ Part of the explanation for this backlash lies in recent revelations regarding the addictiveness of smoking (and the extent to which tobacco companies not only knew that smoking is addictive, but also altered the degree of cigarettes' addictiveness by controlling nicotine levels)²⁴ and regarding the cigarette manufacturers' marketing strategies (targeting children)²⁵ and public relations strategies (denying the

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when his job and the role of the FDA were threatened by the Republican backlash to the FDA's initial regulatory steps. See Jeffrey Goldberg, *Next Target: Nicotine*, N.Y. TIMES, Aug. 4, 1996, § 6 (Magazine), at 22 (describing the harsh responses of leading Republicans, including House Speaker Newt Gingrich and presidential candidate Senator Bob Dole, to Kessler's aggressive push to regulate tobacco, among other products).

21. Cf. David M. Engel, *The Oven Bird's Song: Insiders, Outsiders, and Personal Injuries in an American Community*, 18 L. & SOC'Y REV. 551, 558-59 (1984) (finding, in a study of a rural county in Illinois, strong norms of individualism and self-sufficiency running counter to norms that tend to promote litigiousness).

22. See, e.g., Stephen Chapman, *Enemies of Tobacco Pose Their Own Risks*, CHI. TRIB., Apr. 24, 1997, at 19; Richard A. Epstein, *Big Tobacco's Big Mistake*, N.Y. TIMES, June 25, 1997, at A19; Robert Samuelson, *Who Will Finance the Tobacco Settlement?*, CHI. TRIB., Apr. 25, 1997, at 31, cf. RESTATEMENT (SECOND) OF TORTS § 402A cmt. i (1965) (noting that "good tobacco is not unreasonably dangerous and therefore producers are not liable for the harms caused by it"). The public's general attitude toward trial lawyers, and the unfavorable attention that products litigation has received from commentators and political leaders, especially in Republican campaigning since the 1980s, has contributed to the inhospitable climate for all products liability plaintiffs. See Carl T. Bogus, *War on the Common Law: The Struggle at the Center of Products Liability*, 60 MO. L. REV. 1 (1995); Steven P. Croley & Jon D. Hanson, *The Nonpecuniary Costs of Accidents: Pain-and-Suffering Damages in Tort Law*, 108 HARV. L. REV. 1787, 1787-89 (1995).

23. See Glenn Frankel, *Money Is Tipping Big Tobacco's Scales*, WASH. POST, Apr. 27, 1997, at A1 (describing a "massive public backlash against the industry"). Princeton Survey Research Associates Telephone Poll, Apr. 19-25, 1996, available in WESTLAW, POLL Database, Question ID No. USPSRA.051396 R30E (indicating that, of 1751 respondents, 75% described their opinion of tobacco companies as either "mostly unfavorable" or "very unfavorable").

24. See *infra* notes 144, 161, 219.

25. See Kelder & Daynard, *supra* note 3, at 66 ("[T]he tobacco industry denies that it targets minors in its promotional campaigns, but evidence garnered from internal industry documents points to the contrary."). For a description of the most recent documents to come to light indicating that at least one manufacturer, R.J. Reynolds, aggressively targeted adolescents, see John Mintz & Sandra Torry, *Internal R.J. Reynolds Documents Detail Cigarette Marketing Aimed at Children*, WASH. POST, Jan. 15, 1998, at

health effects of smoking despite knowledge of the enormous risks).²⁶ Partially as a cause and partially as a consequence of these revelations, an immense third wave of tobacco litigation has emerged,²⁷ which, unlike either of the first two waves, appears to pose a considerable threat to the cigarette industry.²⁸ In addition, in August 1995, after more than fifty years of opting not to regulate,²⁹ the FDA finally asserted its jurisdiction over tobacco products and announced plans to regulate tobacco as a drug.³⁰ For the first time ever, cigarette manufacturers now face a substantial threat of regulation.

A1.

26. See Kelder & Daynard, *supra* note 3, at 77 ("[The evidence] makes clear . . . that the industry was well aware of the pharmacologically active, addictive, and harmful nature of its products and that it took active steps to hide this information from its customers as well as the public at large."); *infra* notes 144, 161, 219.

27. See Kelder & Daynard, *supra* note 3, at 70-88 (describing litigation as an effective alternative to legislative and administrative regulation of tobacco).

28. Previous suits had been brought primarily by smokers themselves. The plaintiffs in those suits alleged that cigarettes caused their illnesses and injuries, allegations that rang hollow for many judges and juries who apparently concluded that smokers had no one to blame but themselves. See Robert L. Rabin & Stephen D. Sugarman, *Overview*, in *SMOKING POLICY*, *supra* note 6, at 3, 16; Gary T. Schwartz, *Tobacco Liability in the Courts*, in *SMOKING POLICY*, *supra* note 6, at 131, 143; *infra* note 68 and accompanying text. The 1990s approach avoids that pitfall: New plaintiffs, such as secondhand smokers and public health insurers (representing the general population of premium payers) have brought suit. These plaintiffs have been injured by cigarettes, but cannot easily be said to have chosen to assume the risk. And the smokers who sue today have newfound evidence suggesting that cigarette manufacturers concealed the addictiveness of their products, significantly reducing the extent to which smokers can plausibly be said to have assumed the risks. See Kelder & Daynard, *supra* note 3, at 77; see also *infra* notes 144, 161, 219 (discussing evidence that cigarette manufacturers knew of cigarettes' addictiveness and even manipulated the levels of nicotine in cigarettes).

Nevertheless, even the most promising third-wave doctrinal theories are, at best, untested, and their success seems closely tied to the perceived economics of cigarette smoking. See Bob Van Voris, *AG Claims Mere Smoke?*, NAT'L L.J., Apr. 28, 1997, at A1 (describing the significance of the economic issues). Economic theory appears to be gaining in influence in other debates over tobacco policy. See, e.g., Kenneth E. Warner et al., *Criteria for Determining an Optimal Cigarette Tax: The Economist's Perspective*, 4 TOBACCO CONTROL 380, 380 (1995) (describing a 1993-1994 debate regarding whether to increase cigarette taxes and explaining that "[a]lthough political considerations undoubtedly predominated, the debate was marked by an unusual emphasis on economic theory and analysis").

29. See Sandra Torry, *Duel in a Country Courthouse, with Tobacco Regulation at Stake*, WASH. POST, Aug. 18, 1997, at F7.

30. Jurisdiction was based on the conclusions that the "nicotine in tobacco products is highly addictive, causes other psychoactive effects, such as relaxation and stimulation, and affects weight regulation" and that those "responses to nicotine are effects on the structure or function of the body within the meaning of the Act." Analysis Regarding the Food and Drug Administration's Jurisdiction over Nicotine-Containing Cigarettes and Smokeless Tobacco Products, 60 Fed. Reg. 41,453, 41,464 (1995) (referring to the Federal Food, Drug, and Cosmetic Act, 21 U.S.C. § 301 (1994)). Based on that jurisdiction, the FDA promulgated new restrictions on youth access to tobacco products, on tobacco marketing and advertising, and on product labeling. See Regulations Restricting the Sale and Distribution of Cigarettes and Smokeless Tobacco To Protect Children and Adolescents, 61 Fed. Reg. 44,396 (1996) (codified at 21 C.F.R. pts. 801, 803, 804, 807, 820, 897 (1997)). The new regulations attempt to stop the sale of tobacco products to minors by requiring manufacturers, distributors, and retailers to comply with a variety of packaging, advertising, marketing, and sales restrictions. See *id.* The tobacco industry has challenged these restrictions in federal court. See *Coyne Beahm, Inc. v. FDA*, 966 F. Supp. 1374 (M.D.N.C. 1997) (invalidating some of the new regulations). The Fourth Circuit is currently deciding the case. There now appear to be doubts not only about the regulations' legality, but also about the FDA's jurisdiction altogether. See Torry, *supra* note 29; Bob Van Voris, *Tobacco: And Now the Appeal*, NAT'L L.J., May 12, 1997, at A1.

Consequently, the tobacco companies perceive the threat as real. The once-unified industry and its take-no-prisoners litigation strategy have given way to defection in the ranks, historic settlement talks, settlements, and a host of unprecedented federal legislative proposals.³¹ By far the single most important development has been the proposed tobacco settlement reached by state attorneys general and the tobacco industry last June and now being considered by federal lawmakers.³² Although the negotiations giving rise to that proposed settlement seemed rushed, and earlier attempts to regulate have yielded only modest gains, those active in the process promise that, this time, the regulations will have teeth.³³ This Article is motivated in part by our concern that this promise will not be kept and that the regulations may fail to address the problems that sparked them in the first place. More specifically, it is motivated by the sense that the current debates over smoking policy have omitted from consideration a type of regulation—*ex post* incentive-based regulation—that may well be superior to those being considered.

B. *An Introduction to Incentive-Based Regulation and Enterprise Liability*

Legal scholars, economists, and political scientists sometimes distinguish among three types of regulation: *command-and-control* rules; *performance-based* standards; and *incentive-based* systems. Loosely defined, command-and-control rules impose specific requirements on regulated firms. For instance, a polluter might be required to adopt a particular type of technology designed to

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31. See, e.g., Placing Restraints on Tobacco's Endangerment of Children and Teens Act, S. 1530, 105th Cong. (1997); Healthy and Smokefree Children Act, S. 1492, 105th Cong. (1997); Universal Tobacco Settlement Act, S. 1415, 105th Cong. (1997); see also Judy Fahys, *Hatch Unveils Tobacco Battle Plan*, SALT LAKE TRIB., Nov. 13, 1997, at A9 (providing a brief overview and comparison of these three bills).

One key to the tobacco industry's decision to consider a national settlement was the defection of Liggett Group, Inc., which settled separately with 23 states. See Bob Hohler, *23 Ask That Tobacco Pact Spare Liggett*, BOSTON GLOBE, Sept. 14, 1997, at A10. Under Chief Executive Bennett S. LeBow, Liggett has admitted that cigarettes cause health problems and that the industry's marketing strategy targeted children. See *id.* Many state attorneys general see the Liggett settlement as crucial to the more general war against tobacco. As Minnesota Attorney General Hubert H. Humphrey III put it, "This is a little like busting a drug dealer to get at the Colombian cartel." *Id.*

32. See *Tobacco Settlement* (visited June 25, 1997) <<http://www.usatoday.com/news/smoke/smoke01.htm>>.

33. Massachusetts Attorney General Scott Harshbarger, for example, was highly self-congratulatory. Twenty months ago, when these lawsuits began, nobody would have dreamed that 20 months later we would have big tobacco on its heels, becoming the most regulated industry in this country, [paying] billions for children's health and the public health.

This . . . is a historic breakthrough. And I think anybody who wants to question it has the burden of proof to show what else could have been done to change the very nature of this industry without banning [cigarettes].

Morning Edition (NPR radio broadcast, June 24, 1997), available in LEXIS, News Library, NPR File (Transcript No. 97062402-210); see also *id.* (statement of Mississippi Attorney General Mike Moore). Some policymakers who were not involved in the negotiations were apparently persuaded by such accounts. For example, Senator Orrin Hatch, citing the proposal's public health effects, urged Congress to "seize upon [the Attorneys' General] initiative, to improve it . . . without jeopardizing any of its basic components," and to pass implementing legislation quickly. 143 CONG. REC. S12,579 (daily ed. Nov. 13, 1997).

limit the quantity of pollution. Performance-based standards tell firms what they must accomplish but leave them to decide how best to do so. Such a standard, for example, might specify the maximum quantity of pollution that a firm may produce without specifying the means by which the firm is required to comply. Finally, incentive-based systems force firms to internalize the total costs of their activities, leaving firms to decide what, if anything, to do about those costs.³⁴

Over the past two decades, the clear trend in regulation has been away from command-and-control rules and toward incentive-based (or, as they are sometimes referred to, "market-based") systems.³⁵ That trend is consistent with, and largely the result of, an emerging scholarly consensus that incentive-based regulatory systems are often the superior approach because they harness the power of the market to generate efficient outcomes and do not rely on regulators to attempt to identify and mandate those outcomes. As Susan Rose-Ackerman explains, an incentive-based system attempts to ensure only that all appropriate costs are internalized and then permits the decentralized, independent choices of individuals and businesses to shape policy outcomes.³⁶ If the institution responsible for administering the incentive-based system can determine the marginal cost associated with the underlying product (and that is a big "if"), then it can charge a fee equal to that marginal cost and let the manufacturers respond.³⁷ This approach arguably avoids the costly and imperfect process of creating fully specified command-and-control rules or performance-based standards, yet it ensures that the party with the best information—the manufacturer—is left with an incentive to self-regulate. Put differently, command-and-control and performance-based regulations seek to prohibit or discourage certain market outcomes, while incentive-based

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34. For further discussion of the three types of regulation, see *infra* Part IV.

35. See E. Donald Elliott, *Recipe for Industrial Policy: Blending Environmentalism and International Competitiveness*, 19 CAN.-U.S. L.J. 305, 313 (1993) (remarking on the worldwide trend toward "market-based and incentive-based" approaches to regulation). Moreover, there is a growing consensus among economists and other policy analysts that the movement toward incentive-based regulation is desirable, especially in the context of dealing with the external costs of pollution. See, e.g., STEPHEN BREYER, *REGULATION AND ITS REFORM* 271 (1982) ("Given the difficulties with standard setting, many economists have urged the use of taxes or other incentive-based systems to deal with spillover problems."); Bruce A. Ackerman & Richard B. Stewart, *Reforming Environmental Law: The Democratic Case for Market Incentives*, 13 COLUM. J. ENVTL. L. 171 (1988) (making the case for the use of incentive-based regulations). President Clinton endorsed the trend in a recent executive order on regulatory review: "Each agency shall identify and assess available alternatives to direct regulation, including providing economic incentives to encourage the desired behavior, such as user fees or marketable permits, or providing information upon which choices can be made by the public." Exec. Order No. 12,866, 3 C.F.R. 638, 639 (1994), reprinted in 5 U.S.C. § 601 (1997). The Supreme Court has also encouraged the use of this sort of regulatory approach by upholding the constitutionality of user fees charged by the Department of Transportation. See *Skinner v. Mid-Am. Pipeline Co.*, 490 U.S. 212 (1989). The fees were designed to internalize the costs of administering federal pipeline safety standards.

36. See Susan Rose-Ackerman, *Consensus Versus Incentives: A Skeptical Look at Regulatory Negotiation*, 43 DUKE L.J. 1206, 1215 (1994).

37. As we detail below, there are a variety of types of incentive-based regulation. See *infra* Part V.

regulations seek to eliminate the underlying market failures that give rise to undesirable outcomes.³⁸

Enterprise liability, which holds manufacturers liable for all the harms caused by their products, is one possible ex post incentive-based regime.³⁹ In other work,⁴⁰ we have argued that enterprise liability is, on efficiency grounds, the most desirable products liability regime. This type of regulation, we have argued, may be particularly appropriate when a product's characteristics make consumers *undeterrable*—that is, where tort law can do very little directly to give consumers incentives to take efficient precautions beyond adjusting their activity levels.⁴¹ In this Article, we focus on two general sources of consumer undeterrability. First, consumers may be undeterrable if they are optimistic with respect to—that is, if they systematically underestimate—the risks posed by products. Second, consumers may be undeterrable if they are able to externalize product risks to third parties. With respect to the latter, we distinguish between two types of

38. See Maureen L. Cropper & Wallace E. Oates, *Environmental Economics: A Survey*, 30 J. ECON. LITERATURE 675, 699-700 (1992) (claiming that incentive-based policies can contribute to effective regulation); Robert W. Hahn, *Economic Prescriptions for Environmental Problems: How the Patient Followed the Doctor's Orders*, 3 J. ECON. PERSP. 95, 95 (1989) (describing command-and-control regulation as an approach in which the "regulator specifies the technology a firm must use to comply with regulations").

39. As we explain *infra* Part IV, enterprise liability is one of several possible forms of incentive-based regulation. Although we conclude in that part that some type of (victim-initiated ex post) incentive-based regulation of cigarettes is likely the most desirable regulatory approach, we acknowledge that enterprise liability may not be as effective as other incentive-based regulatory options. Nevertheless, for the sake of simplicity and ease of exposition, we focus *infra* Parts II-III on an idealized enterprise liability regime (We assume, for instance, that enterprise liability is costless to administer and that causation questions do not pose a problem for courts. We relax both of those assumptions *infra* Part V and compare different incentive-based regulatory approaches in more realistic terms.) Hence, we urge the reader to remember that enterprise liability serves only as a simple and convenient placeholder for the more general concept of ex post incentive-based regulation.

40. See Jon D. Hanson & Kyle D. Logue, *The First-Party Insurance Externalities: An Economic Justification for Enterprise Liability*, 76 CORNELL L. REV. 129 (1990) [hereinafter Hanson & Logue, *The First-Party Insurance Externalities*]; Jon D. Hanson & Kyle D. Logue, *Toward Placing Products Liability in Context: The Effect of Non-Tort Systems of Deterrence and Other Sources of Undeterrability* 21-42 (Oct. 1996) (unpublished manuscript, on file with the *Yale Law Journal*) [hereinafter Hanson & Logue, *Products Liability in Context*]; Jon D. Hanson & Kyle D. Logue, *Toward Placing Tort Law in Context: Taking Non-Tort Systems of Deterrence Seriously* (Oct. 1996) (unpublished manuscript, on file with the *Yale Law Journal*) [hereinafter Hanson & Logue, *Tort Law in Context*]; see also Jon D. Hanson, Kyle D. Logue & Michael Zamore, *Smokers' Compensation: Toward a Blueprint for Federal Regulation of Cigarette Manufacturers*, 22 S. ILL. U. L.J. (forthcoming Spring 1998) [hereinafter Hanson et al.]; Croley & Hanson, *supra* note 22; Steven P. Croley & Jon D. Hanson, *Rescuing the Revolution: The Revised Case for Enterprise Liability*, 91 MICH. L. REV. 683 (1993) [hereinafter Croley & Hanson, *Enterprise Liability*]; Steven P. Croley & Jon D. Hanson, *What Liability Crisis? An Alternative Explanation for Recent Events in Products Liability*, 8 YALE J. ON REG. 1 (1991) [hereinafter Croley & Hanson, *What Liability Crisis?*]; Steven P. Croley & Jon D. Hanson, *A Defense of Pain-and-Suffering Damages and Some Thoughts on the Empirical Side of Law-and-Economics Scholarship* (Nov. 1, 1996) (unpublished manuscript, on file with the *Yale Law Journal*) [hereinafter Croley & Hanson, *A Defense of Pain-and-Suffering Damages*].

41. For a more complete discussion of the concept of "undeterrability," see Hanson & Logue, *Products Liability in Context*, *supra* note 40, at 21-42. Although we did not then use the term "undeterrable," we first discussed the idea in Hanson & Logue, *The First-Party Insurance Externalities*, *supra* note 40, at 159-68, in which we described how the first-party insurance externality produces nonoptimal care levels and activity levels in consumer product markets.

externalization: insurance externalities, which occur when consumers have imperfect first-party insurance for at least some portion of the risks posed by consumer products, and noninsurance externalities, which occur when a product causes harm to a third-party bystander.

Insofar as consumers are undeterrable, tort law should place product-accident costs on manufacturers. Because tort law cannot, by hypothesis, influence consumer decisionmaking, consumers will take too few precautions, will fail to demand efficiently safe products from manufacturers, and will consume too many inefficiently unsafe products.⁴² Shifting all the costs to manufacturers, however, would internalize the relevant costs to the manufacturers; they, in turn, would pass these costs along to consumers. This would lead to optimal manufacturer care levels and optimal activity levels.

To see why that is the case, consider as a stylized example an individual consumer faced with the choice of buying and smoking a pack of cigarettes or not. If the consumer decides to smoke the cigarettes, she faces the following costs: \$2.00, equaling the nominal price or the purchase price of the cigarettes (reflecting the production and marketing costs),⁴³ plus another \$2.00, equaling the present value of the future health-related costs to herself and to others associated with smoking those cigarettes. Ideally, the consumer would purchase a pack of cigarettes if and only if she valued a pack at \$4.00 or higher. Assume, however, that she does not internalize the health-related costs of smoking—that is, the additional \$2.00 of costs has no effect on her decision to smoke. In that case, even if she valued the cigarettes at only \$3.00, she would purchase and smoke the cigarettes. Further suppose that the cigarette manufacturer could completely eliminate the \$2.00 per pack risk by investing an additional \$1.50 per pack in safety measures. Obviously, the efficient outcome would be for the manufacturer to make the investment, thereby eliminating the risk associated with the cigarettes.⁴⁴ Assuming consumer undeterrability and the absence of manufacturer liability, however, the manufacturer would not invest the \$1.50 in risk reduction because doing so would cause the manufacturer to lose customers. Consumers would not perceive the \$2.00 reduction in risks associated with the additional cost and would instead purchase cheaper and less safe brands.

Those results would present at least two deterrence-related problems. First, too many packs of cigarettes would be purchased; in other words, *activity*

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42. By "efficiently safe products," we mean products for which manufacturers have made all cost-justified investments in safety. "Inefficiently unsafe products" are those for which not all such investments have been made.

43. We are assuming for purposes of this example that the market for cigarettes is competitive and that manufacturers enjoy only normal profits.

44. To put this conclusion in terms of Learned Hand's famous formula, *see* *United States v. Carroll Towing Co.*, 159 F.2d 169, 173 (2d Cir. 1947), because the burden of preventing the accident (\$1.50) is less than the expected accident cost (\$2.00), which amounts to the probability times the magnitude of the loss, efficiency requires that the accident be prevented.

levels would be too high. Second, manufacturers would invest too little in accident prevention; that is, *manufacturer care levels* would be too low.⁴⁵ The economic case for enterprise liability and other forms of ex post incentive-based regulation, therefore, is that they would force manufacturers, and in turn consumers, to internalize the total costs of cigarettes. As a consequence, both activity levels and manufacturer care levels would be pushed in the efficient direction. Because the nominal price would equal the total real price, consumers would purchase the efficient quantity of cigarettes.⁴⁶ There would, in short, be no welfare loss associated with the wedge between consumers' valuation of cigarettes and the total social cost of cigarettes in the market.

Our previous work analyzing these dynamics, like much of the efficiency-oriented products liability scholarship, was written at a considerable distance from real-world examples and implicitly assumed that all consumer products are alike.⁴⁷ One goal of this Article, therefore, is to begin to examine the breadth of the case for enterprise liability by analyzing a specific consumer product. For a number of reasons, cigarettes are especially worth studying. In addition to the fact that cigarette-caused harms have become the most salient products liability topic of the decade, if not of the century,⁴⁸ cigarettes present

45. A third problem is that consumers would lack incentives to take efficient levels of care in using products. As we explain *infra* Parts II-III, however, there may be little that tort law can or need do about consumer care levels, especially in the cigarette context.

46. Our consumer, who valued the next pack at only \$3.00, would not buy because the price would be \$3.50.

47. This tendency may reflect the influence of the economic analysis of law, which critics claim too often bases sweeping policy generalizations on simplistic models. Or perhaps it is a consequence of the fact that products liability law has experienced several dramatic transformations in the past fifty years, transformations that make it difficult for scholars to do anything but paint with a broad brush. Nevertheless, it seems to us that too little attention has been paid to whether and precisely how variations across products affect the analysis. Moreover, the specific examples used are often quite exceptional products. See, e.g., Croley & Hanson, *What Liability Crisis?*, *supra* note 40, at 84-90 (discussing a variety of products and services, including vaccines, that pose case-specific issues).

48. The legal literature is by no means lacking in articles on cigarette manufacturer liability. Many of the law review articles favoring cigarette manufacturer liability have been doctrinal in nature. For example, there have been numerous articles examining the preemptive effect of the Federal Cigarette Labeling and Advertising Act. See, e.g., Richard C. Ausness, *Cigarette Company Liability: Preemption, Public Policy, and Alternative Compensation Systems*, 39 SYRACUSE L. REV. 897 (1988) [hereinafter Ausness, *Cigarette Company Liability*] (arguing that the federal cigarette labeling law should not be read to preempt state products liability claims); Peter F. Riley, Note, *The Product Liability of the Tobacco Industry: Has Cipollone v. Liggett Group Finally Pierced the Cigarette Manufacturers' Aura of Invincibility?*, 30 B.C. L. REV. 1103 (1989) (discussing the possibility that *Cipollone* would overcome the industry's theretofore seemingly invincible federal preemption argument). In addition, there have been efforts to fashion new theories for holding cigarette companies liable. See, e.g., Bogus, *supra* note 22, at 46-59 (arguing for the application of generic product liability to cigarettes); Kelder & Daynard, *supra* note 3, at 64 (arguing that, notwithstanding federal labeling law, successful products liability claims against the cigarette industry are becoming increasingly likely because of several factors, including the discovery of internal industry documents detailing knowledge of the destructive properties of nicotine, industry efforts to manipulate nicotine, and the unavailability of assumption-of-risk defenses in cases filed by states); Irene Scharf, *Breathe Deeply: The Tort of Smokers' Batters*, 32 HOUS. L. REV. 615, 660-87 (1995) (suggesting the use of a battery claim against cigarette companies as a means of circumventing assumption-of-risk defenses); Alex J. Grant, Note, *New Theories of Cigarette Liability: The Restatement (Third) of Torts and the Viability of a Design Defect Cause of Action*, 3 CORNELL J.L. & PUB. POL'Y 343 (1994) (arguing that the *Restatement (Third)*'s reversal of the presumed immunity for cigarette companies and the existence of

an especially attractive subject of study because of an abundance of relevant empirical data. And because of a number of important recent developments, we regard this as an ideal moment to reevaluate the economic case for regulating cigarettes and for comparing alternative regulatory regimes.⁴⁹

C. *The Absence of Incentive-Based Regulation in the Proposed Settlement*

Despite the growing popularity of incentive-based regulation among scholars and policymakers, the proposed tobacco settlement agreement is largely devoid of incentive-based regulation. Instead, the proposal relies almost entirely on command-and-control and performance-based regulations.⁵⁰ This omission likely has something to do with the composition of the team that negotiated the settlement. Lawyers for the plaintiffs and defendants and some public health experts were present,⁵¹ but no economists or academic policy analysts participated. Public health advocates have long believed that the market for cigarettes is deeply and dangerously flawed and that the deceptive

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low-tar alternative cigarette designs provide a basis for bringing design defect claims against high-tar cigarette manufacturers); Bradley M. Soos, Note, *Adding Smoke to the Cloud of Tobacco Litigation—A New Plaintiff: The Involuntary Smoker*, 23 VAL. U. L. REV. 111 (1988) (arguing in favor of allowing passive smoke victims to bring enterprise liability claims against cigarette companies). And some commentators have—as we do in this Article—employed the tools of economic analysis to argue in favor of either some form of absolute cigarette manufacturer liability or an alternative no-fault regime that would place costs on manufacturers. See, e.g., Richard C. Ausness, *Compensation for Smoking-Related Injuries: An Alternative to Strict Liability in Tort*, 36 WAYNE L. REV. 1085 (1990) [hereinafter Ausness, *Compensation*] (proposing a no-fault compensation system on corrective justice grounds); Donald W. Garner, *Cigarettes and Welfare Reform*, 26 EMORY L.J. 269 (1977) (providing a prescient argument in favor of making manufacturers liable to welfare agencies that bear some of the costs of cigarettes); Frank J. Vandall, *Reallocating the Costs of Smoking: The Application of Absolute Liability to Cigarette Manufacturers*, 52 OHIO ST. L.J. 405 (1991) (arguing for absolute cigarette manufacturer liability on cost-internalization grounds).

49. Specifically, there have been three significant developments. First, on a theoretical level, numerous scholars have begun to employ efficiency analysis to argue in favor of the status quo and against holding cigarette manufacturers liable. See, e.g., WILLARD G. MANNING ET AL., *THE COSTS OF POOR HEALTH HABITS* (1991); ROBERT D. TOLLISON & RICHARD E. WAGNER, *THE ECONOMICS OF SMOKING* (1992); W. KIP VISCUSI, *SMOKING: MAKING THE RISKY DECISION* (1992); Schwartz, *supra* note 28; Gregory P. Tassin, *Tobacco Industry Liability for Cigarette-Related Injuries: "Smokers, Give It Up!"*, 16 J. PROD. & TOXICS LIAB. 221 (1994). More generally, an anti-tort and anti-generic-products-liability sentiment has come to dominate the products liability literature. See generally Croley & Hanson, *Enterprise Liability*, *supra* note 40, at 713-67 (summarizing the products liability literature). Second, on a practical level, a great deal of new evidence has come to light regarding the practices of cigarette manufacturers and the effects of nicotine and cigarette smoke. For some examples of that sort of evidence, see *infra* notes 64, 104, 144, 161, 219, and accompanying text. Finally, on a legal level, a third wave of cigarette litigation has emerged, see *supra* notes 27-28 and accompanying text, and dramatic new federal regulation of the tobacco market is now under consideration, see *infra* Part VI. As a result of those three developments, this is an opportune moment to reconsider whether cigarette manufacturer liability or alternative forms of regulation might be justified on economic or policy grounds.

50. See *infra* Part VI (reviewing and criticizing relevant aspects of the proposal). Given the proposal's exclusive reliance on command-and-control and performance-based regulation, it is no surprise that the debates over the proposal have centered on whether the performance-based standards are properly calibrated and whether the mandatory command-and-control prohibitions and requirements are too draconian or whether, instead, they contain too many loopholes to be effective.

51. See Sandra Torrey, *Army of Capital Lobbyists Has Drawn \$8 Million on Tobacco Fight*, WASH. POST, Sept. 11, 1997, at A4.

practices of manufacturers, coupled with the devastating health effects of smoking, are evidence enough that the underlying market is in need of substantial regulation.⁵² Perhaps because most public health advocates are not economists, however, these specialists have overlooked the potential market-correcting role of incentive-based regulation. They recognize that there is a disease but seek to treat only its symptoms.⁵³

In contrast to public health advocates, most of the economists or efficiency-minded legal scholars who have considered the issue have concluded that the cigarette market functions well and is in no need of regulatory oversight.⁵⁴ These scholars have therefore not reached the next question, which no doubt would have been pertinent to the settlement talks: Assuming that there are problems with the cigarette market, what regulatory mechanisms should be implemented?⁵⁵ Thus, economists have provided little in the way of relevant guidance.

In this Article, we hope to bridge the void that separates economics and public health with respect to tobacco regulation and, by doing so, to suggest a means of improving the imminent resolution of the long-term struggle between the cigarette industry and those who would regulate it. We offer a substantially refined version of the public health diagnosis: The unregulated market cannot be relied upon to produce the efficient level of safety in cigarette design and manufacturing or the efficient amount of smoking and is in need of significant regulation. Our prescription, however, is informed by economics: Some form of incentive-based regulation is the best cure for the underlying disease.

D. Overview

In the most general terms, this Article attempts to answer two questions: Should the cigarette market be regulated? If so, how?⁵⁶ Parts II-III are

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52. Interview with Richard Daynard, Chair of the Tobacco Products Liability Project, Northeastern University School of Law, in Boston, Mass. (Dec. 19, 1997); cf. Brian J. Fox & Stanton A. Glantz, *The National Tobacco Deal Compared with Public Health 2-6* (1997) (unpublished manuscript, on file with the *Yale Law Journal*) (outlining various public health benchmarks that were established before the proposed tobacco settlement was announced).

53. There are, of course, "public health" economists who believe that the cigarette market is flawed and in need of regulatory intervention. See, e.g., Jeffrey E. Harris, *Taxing Tar and Nicotine*, 70 AM. ECON. REV. 300, 300 (1980).

54. See, e.g., MANNING ET AL., *supra* note 49; TOLLISON & WAGNER, *supra* note 49; VISCU, *supra* note 49; Schwartz, *supra* note 28; Taxin, *supra* note 49. For an overview of that literature, see *infra* Subsection III.C.1.

55. Arguably, an answer to that question is implicit in much of the economic work assuming that a Pigouvian tax—one of several possible types of incentive-based systems—would be the appropriate regulatory approach. See *infra* notes 436-439 and accompanying text.

56. This Article leaves a number of issues for us to address in future work. For example, we do not discuss in detail the distributional effects of our proposed *ex post* incentive-based regime. Nor do we address the international ramifications of our proposal. Instead, this Article is limited to the efficiency concerns that are relevant to the questions of whether and how to regulate the cigarette market in the

devoted to the first question, and Parts IV-VI are devoted to the second. For the reader who needs to be convinced that the cigarette market requires government intervention of any kind, Parts II-III will be essential. For the reader who already holds the view that government intervention is warranted, those parts could be skimmed or even skipped, and attention focused on Parts V-VII.⁵⁷

In Part II, we respond to the argument that consumers are adequately informed of the risks of smoking. We conclude that when consumers are making the decision whether and how much to smoke they do not (and perhaps cannot) fully take into account the risks that cigarettes pose. We also point out how an ideal enterprise liability system could respond to that problem. Part III then observes that, even if smokers were well-informed of the risks of smoking, they would still ignore many of those risks because they could externalize those risks onto third parties either through imperfectly risk-classified first-party insurance arrangements or through the effects of passive smoke.

It is worth highlighting one of the most interesting challenges we face in Part III: providing a response to the economists' arguments that cigarettes do not, on balance, impose negative external costs on society but instead produce a windfall social gain because of the savings resulting from cigarette-induced premature deaths—savings mostly in the form of smokers' unclaimed pension and nursing home entitlements. Thus, the economists' argument goes, cigarette consumption should not be deterred, but should be subsidized. In Part III, we offer both an economic and a noneconomic critique of that position. Whereas some economists have concluded that cigarettes create a net social benefit of \$0.32 per pack, we conclude—using those economists' data but changing a few key assumptions—that cigarettes (at the current level of production) produce almost \$7.00 per pack of net social cost. After doing so, we demonstrate how *ex post* incentive-based regulation can respond to that problem of negative externalities.

Part IV looks more generally at potential regulatory responses to the market failures detailed in Parts II-III. Borrowing from and building upon the literature in the economics of regulation, Part IV describes the advantages of incentive-based regulation over command-and-control and performance-based regulation in dealing with the deterrence problems associated with cigarettes. Specifically, we explain why one type of incentive-based regulation—victim-

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United States.

57. A word of caution is in order here, however. In our experience, many people believe that markets fail and that regulation is therefore necessary, but do not identify the precise ways in which markets fail. Thus they do not provide any useful basis for comparing regulatory responses. See Croley & Hanson, *Enterprise Liability*, *supra* note 40, at 736-67 (making this point with respect to several prominent products liability scholars). We offer an extended treatment of market failures because doing so is, in our view, a necessary condition for offering worthwhile regulatory proposals.

initiated ex post incentive-based regulation—is generally superior to its alternatives, including ex ante incentive-based approaches such as Pigouvian taxes.

Part V then turns to several potential ex post incentive-based regimes and suggests their strengths and weaknesses. We then provide a very rough outline of a particular type of ex post incentive-based regime, which we call *smokers' compensation*. We also introduce the idea of the *cigarette card*, a technological innovation that would improve the effectiveness of any regime for regulating cigarettes, including enterprise liability and smokers' compensation. Part V also provides a brief discussion of some of the difficult issues that would arise when planning a system of ex post incentive-based regulation. In particular, we seek to address two potential transition problems, first by limiting liability for manufacturers to the particular amount of harm they caused (including, to the extent it is politically possible, the harm they caused already), and second by suggesting solutions to the problem of judgment-proof defendants. We also briefly discuss the problems of widely dispersed harm and poorly informed defendants as challenges to an ex post incentive-based regime.

Finally, Part VI applies the analysis of this Article to the proposed tobacco settlement agreement. We conclude that the proposed agreement is almost exactly the opposite of what should be implemented. If comprehensive and preemptive federal legislation is truly on the horizon, we recommend that Congress reject the current proposal in favor of a strong form of ex post incentive-based regulation. At the very least, we recommend that Congress not eliminate products liability law, as it is the only existing serious deterrent that cigarette manufacturers face. If forced to choose, we would favor the status quo over the proposed settlement.

II. THE FIRST SOURCE OF CONSUMER UNDETERRRABILITY: IMPERFECT INFORMATION

A. *Current Views of Consumer Risk Perceptions*

Most of the debate over how, if at all, cigarette manufacturers should be regulated has boiled down to a debate over who knew what when about the risks of smoking. The widely held view today, among both the public generally and legal economists specifically, is that the vast majority of consumers are well aware of those risks. It follows (at least for the legal economists) that regulation of the cigarette market is unwarranted, except perhaps on paternalistic grounds.

From the early years of this century through the 1950s, cigarette manufacturers frequently made advertising claims that would seem astonishing

today, claims that their products were innocuous or even beneficial.⁵⁸ Although literature on the ill-health effects of smoking began to appear in the 1950s,⁵⁹ it was not until the 1960s that such research came into public focus with prominent government reports.⁶⁰ Those reports established the basic links between smoking and disease that have been reinforced and elaborated ever since, giving rise to the first efforts to regulate the market for cigarettes.⁶¹ Unfortunately, those regulatory efforts did little to reduce the popular incidence or acceptance of smoking.⁶² They did serve, however, to create a widespread perception that consumers were informed of the risks associated with smoking. Indeed, it was that perception that made it difficult for smokers to win lawsuits against tobacco manufacturers: Despite the advent

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58. See Schwartz, *supra* note 28, at 137. Not all of the claims could be explained by honest naiveté about the dangers of smoking. Professor Schwartz notes that, as early as the 1930s, the hazards of cigarettes were referred to in popular discourse, suspected by many physicians, and at least tentatively indicated by medical research. See *id.*; see also Marc Z. Edell, *Cigarette Litigation: The Second Wave*, 22 TORT & INS. L.J. 90, 97 (1986). In that 20-year interim, tobacco companies also did little or no research on the possible causal connection between their products and cancer. See Edell, *supra*, at 97-98.

Tobacco industry advertising may have contributed to consumer confusion. According to Richard Kluger, for example, even after the 1955 Federal Trade Commission (FTC) promulgation of advertising guidelines, cigarette companies could advertise with language that suggested that their brands were healthy and safe while explicitly lauding their products' taste and flavor. See KLUGER, *supra* note 9, at 185.

59. See, e.g., ALTON OCHSNER, SMOKING AND HEALTH (1959) (discussing early evidence against smoking); see also Schwartz, *supra* note 28, at 137 (surveying the early literature on the health effects of smoking).

60. See, e.g., PUBLIC HEALTH SERV., U.S. DEP'T OF HEALTH, EDUC., & WELFARE, SMOKING AND HEALTH: REPORT OF THE ADVISORY COMMITTEE TO THE SURGEON GENERAL OF THE PUBLIC HEALTH SERVICE 5-7 (1964) [hereinafter 1964 SURGEON GENERAL'S REPORT]; ROYAL COLLEGE OF PHYSICIANS OF LONDON, SMOKING AND HEALTH: A REPORT OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON ON SMOKING IN RELATION TO CANCER OF THE LUNG AND OTHER DISEASES 1 (1962). The history of medical and public health reports has been reviewed at length elsewhere. See, e.g., ROBERT E. GOODIN, NO SMOKING 1-5 (1989); SURGEON GENERAL'S PROGRESS REPORT, *supra* note 3, at 5-10; see also ALBERTA D. BERTON, SMOKING AND HEALTH: A COMPREHENSIVE BIBLIOGRAPHY (1980) (providing a bibliography of sources).

61. The Surgeon General's watershed 1964 report, for example, contributed directly to changes in U.S. advertising regulations and to federally mandated package and advertising warnings. See Public Health Cigarette Smoking Act of 1969, Pub. L. No. 91-222, 84 Stat. 87 (codified as amended at 15 U.S.C. §§ 1331-1340 (1994)); Federal Cigarette Labeling and Advertising Act, Pub. L. No. 89-92, 79 Stat. 282 (1965) (codified as amended at 15 U.S.C. §§ 1331-1340). Ironically, it was these very warnings that the industry later used to fend off tort liability. See *supra* note 9; see also KLUGER, *supra* note 9, at 290 ("[W]hile the labeling law did not explicitly preclude state liability suits from being filed, it came close to providing the industry with an ironclad defense . . .").

62. Per capita sales of cigarettes to Americans over 18 actually *rose* for the first three years after the 1969 Act. See KLUGER, *supra* note 9, at 377. There are several plausible explanations for the apparent failure of the warning requirements and advertising restrictions. Some argue that tobacco companies met the new restrictions on advertising with great creativity, devising new marketing campaigns, such as the "lifestyle" campaigns featuring the rugged, individualistic "Marlboro Man." See *id.* at 377, 444. Moreover, the restrictions freed the industry of antismoking advertisements that had been required by the fairness doctrine, which was then in effect under the rules of the Federal Communications Act. See *id.* at 332-35; *supra* note 9. Another hypothesis is that consumers were already well-informed of the risks, and the additional warnings were redundant. Yet another hypothesis is that the advertisement warnings and information did not influence even uninformed consumers because of the nature of their information problems. See *infra* Section II.B.

of strict liability, juries almost invariably treated smoker-plaintiffs as wholly responsible for their actions in starting to smoke and maintaining the habit.⁶³

As a general matter, the risks of smoking are not seriously contested within the medical and scientific communities. The *weight* of evidence about adverse health effects of cigarettes continues to increase, and confidence in the conclusion that smoking poses numerous particular health risks—including various risks of cancer, cardiovascular disease, and chronic obstructive lung disease—is greater now than ever.⁶⁴

The general public appears to be getting the message. In 1986, for example, more than 70% of all adults agreed that “any amount” of smoking is hazardous to health; most of the other 30% acknowledged that “heavy smoking” is hazardous.⁶⁵ Smokers, too, are apparently aware of the hazards. In a 1985 Gallup poll, 90% of current smokers and 96% of former smokers reported believing that “[c]igarette smoking is harmful” to health.⁶⁶ Although terms such as “hazardous” and “harmful” are somewhat imprecise,⁶⁷ it is quite clear that the vast majority of consumers have not assumed that smoking is *riskless* (at least not in the recent past). Moreover, most lawmakers, courts, and juries apparently perceive consumers to be well-informed of the risks.⁶⁸

63. See, e.g., Rabin & Sugarman, *supra* note 28, at 3, 16; Schwartz, *supra* note 28, at 131, 143; Glenn Collins, *Cigarette Makers Win Verdict in Suit by a Smoker's Family*, N.Y. TIMES, Aug. 24, 1996, at 8 (describing the response of the jury in one such case); cf. *infra* note 68 (describing plaintiffs' strategies to avoid juries' blame).

64. See *supra* notes 1-4 and accompanying text. A recent international study by the Imperial Cancer Research Fund goes beyond the earlier one-country, limited-period reports. See PETO ET AL., *supra* note 1. This study compiles data on smoking mortality since 1950 in developed countries around the world, seeking the total picture of the worldwide health effects of smoking and estimating the impact of smoking on developing countries. Peto and his colleagues estimate that, in developed countries alone, smoking kills two million people each year, see *id.* at A.7 & tbl.1, and that tobacco will have figured in the deaths of approximately 60 million people between the years of 1950 and 2000, see *id.* at A.8 to 9 & tbl.2. Estimating total mortality, the authors compute that half a billion of the world's 5.5 billion people will die of smoking-related illness. See *id.* at A.103.

65. SURGEON GENERAL'S PROGRESS REPORT, *supra* note 3, at 182 tbl.4.

66. *Id.* at 203 tbl.14.

67. See VISCUSI, *supra* note 49, at 48.

68. See, e.g., Mark Curriden, *The Heat Is On*, A.B.A. J., Sept. 1994, at 60 (quoting a Philip Morris defense counsel's opinion that the fundamental flaw with plaintiffs' cases is that everyone understands that tobacco is risky, and thus cigarettes are not dangerous beyond expectations). Indeed, the defining strategy of third-wave cases is to escape the consequences of this perception. First, suits have been brought on behalf of parties who did not choose to smoke cigarettes in any sense, but who were nevertheless injured. See, e.g., *Butler v. R.J. Reynolds Tobacco Co.*, 8.1 Tobacco Prods. Litig. Rep. 3.1 (Miss. Cir. Ct. 1993) (complaint) (involving a suit over secondhand smoke); *Broin v. Philip Morris: The Class Action on Behalf of Current and Former Flight Attendants Injured by Exposure to Second Hand Smoke in Airline Cabins—Settlement Agreement* (visited Dec. 11, 1997) <<http://www.kinsella.com/broin/settagree.html>> (same). These suits may blaze trails for other plaintiffs whose health has likely been affected by proximity to smokers, either in the workplace or in the home.

Another group of parties that bears the costs of smoking without any choice is state governments and health care providers that pay for medical care for chronic injuries, many of which are linked to smoking. Suits by state attorneys general were led by *Moore v. American Tobacco Co.*, 9.2 Tobacco Prods. Litig. Rep. 3.35 (Miss. Ch. Ct. May 23, 1994), in which the Attorney General of Mississippi seeks to recover Medicaid expenses. The case was based on theories of unjust enrichment and knowing conspiracy to merchandise an unreasonably dangerous and addictive product to adults and minors, see *id.*, and was settled for \$3.366 billion over the next 25 years, see *Miss. Experts Expect Tobacco Funds This Month \$174*

Just as the public has come to perceive tobacco consumers as well-informed, so too have efficiency-minded legal scholars. As a consequence, these scholars argue, cigarette manufacturers' virtual immunity from tort liability should continue.⁶⁹ Of those scholars, however, W. Kip Viscusi is perhaps the only one to have studied carefully the nature of consumer information regarding cigarettes' risks.⁷⁰ Drawing on "detailed analysis of large bodies of empirical evidence, not . . . conjecture or anecdotal evidence,"⁷¹ Viscusi rejects the conclusion that "individuals are . . . ignorant of the hazards they face . . . [or,] if they are aware of the risks, [that] they ignore them when making their smoking decisions."⁷² He refers to the conception of uninformed consumers as the "stylized smoker" model.⁷³ Contrary to that model, Viscusi argues, the evidence suggests that "smoking rates [do not] greatly exceed what would prevail in a fully informed market context."⁷⁴ In other words, the evidence is more consistent with what he calls the "fully rational" smoker model than with the stylized smoker model.⁷⁵

Million in Settlement Coming, COM. APPEAL (Memphis, Tenn.), Jan. 2, 1998, at A12.

A second general strategy is to stage a frontal attack on the premises of the assumption-of-risk defense while continuing to represent traditional, firsthand, "elective" smokers. Under this strategy, plaintiffs attempt, first, to challenge tobacco manufacturers' professed naiveté about the health effects of smoking, both currently and in the past. This requires unearthing evidence that manufacturers know, and knew, that cigarettes can be lethal, and perhaps concealed the information, or even sponsored studies geared to show the opposite. The second prong of the attack, already tried during the second wave, *see* Rabin, *supra* note 14, at 123-125; Rabin & Sugarman, *supra* note 28, at 16, is to highlight the youth of beginning smokers and the role of addiction to illustrate the lack of free choice involved in starting and maintaining the smoking habit. The two prongs can even be combined by showing that cigarette manufacturers were aware of the addictive properties of nicotine and quietly developed the technology to manipulate nicotine levels, at least partly to encourage addiction. It was one of these third-wave cases, based on a novel cause of action alleging a willful tort, that helped lead to the unprecedented March 13, 1996, Liggett settlement. *See Castano Settlement with Brooke Group Ltd. and Liggett Group Inc.*, 11.2 Tobacco Prods. Litig. Rep. 3.147 (E.D. La. Mar. 12, 1996). *Castano v. American Tobacco Co.*, No. 94-1044 Section "B," 1994 U.S. Dist. LEXIS 7426 (E.D. La. 1994), was filed on March 29, 1994, on behalf of all nicotine-dependent persons against the five largest tobacco companies. *See also* *Castano v. American Tobacco Co.*, No. 94-1044 Section "B," 1994 U.S. Dist. LEXIS 13438 (E.D. La. 1994) (denying a motion to dismiss); *cf.* *R.J. Reynolds Tobacco Co. v. Engle*, 672 So. 2d 39 (Fla. Dist. Ct. App. 1996) (defining a class of all Florida citizens, and their survivors, who have or had a medical condition or disease caused by addiction to smoking).

69. *See, e.g.*, Schwartz, *supra* note 28, at 156-57 (concluding that strict liability doctrines "turn out to have no obvious application to cigarettes—products whose hazards (however extreme) are both inherent and reasonably well known by consumers"); Epstein, *supra* note 22 (arguing that because consumers are well-informed of the risks of smoking, "individual smokers should own up to the consequences of their actions" and "the tobacco industry's liability for smoking-related illnesses should be zero").

70. *See* VISCUSI, *supra* note 49.

71. *Id.* at 139.

72. *Id.* at 144.

73. *Id.* at 139.

74. *Id.* at 144.

75. *Id.* Viscusi imagines a third possible model: the "smoker with cognitive limitations," who is subject to certain well-recognized cognitive biases. *Id.* at 139. In his view, the fact that consumers overestimate risks is consistent with that model. Thus, the evidence does not adequately distinguish between the fully rational smoker model and the smoker-with-cognitive-limitations model. Either way, according to Viscusi, there is *not too much* smoking. *See id.* at 144.

Viscusi bases his conclusions about consumers' risk estimation primarily on the results of a study "commissioned by the defense law firms in support of tobacco litigation efforts."⁷⁶ As part of that study, over 3000 subjects in a nationally representative telephone sample were asked a number of questions, including the following: "Among 100 cigarette smokers, how many of them do you think will get lung cancer because they smoke?"⁷⁷ The average response was that forty-three of the smokers would get lung cancer, leading Viscusi to conclude that consumers consider smoking to have a 43% chance of causing lung cancer.⁷⁸ He observes that this perception substantially exceeds what he estimates to be the actual lung cancer risk of between 5% and 10%,⁷⁹ as well as his estimates of total mortality risk to the smoker (excluding danger to others from smoking-related fires, etc.) of 16% to 36%.⁸⁰ In short, "[t]he potential hazards of smoking are not a closely guarded secret, and if anything risk perceptions for some smoking risks, such as lung cancer, may be too high."⁸¹

If one takes Viscusi's figures as to the actual lung cancer mortality risk of smoking as accurate, the survey respondents do appear on average to be *pessimistic* with respect to the risks of cigarettes. A tentative inference that consumers judge smoking to carry with it a 35% to 45% risk of fatal lung cancer seems, in the abstract, plausible.⁸² Based on such an inference, Viscusi implies that there is no useful role to be served by tort liability.⁸³

Just because consumers are aware that smoking has some risk, however, does not imply that consumers are *fully informed* of those risks. In the remainder of this part, we use Viscusi's thoroughgoing empirical research as our foil as we challenge the conventional wisdom that consumers are adequately informed. Among other things, we argue that the issue of consumer information is far more complex than is commonly understood. For

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76. *Id.* at 84 n.6. Viscusi emphasizes that the underlying "survey design was quite sound" and that, in any event, he "undertook a variety of sensitivity tests," including replicating the entire survey on a sample of North Carolina residents. *Id.* at vi. "All these efforts corroborated the survey results." *Id.* Although Viscusi explains that "[r]eaders wishing to validate the survey can readily do so with the aid of a telephone," *id.*, we have opted in this Article to accept Viscusi's evidence at face value. That is, we assume that the questions on the survey were asked of a randomized national sample and that the responses that Viscusi reports are accurate. As we briefly indicate below, however, there appear to have been several significant defects in the design of the survey itself. See *infra* notes 795, 824.

77. VISCUSI, *supra* note 49, at 155.

78. See *id.* at 68.

79. See *id.*

80. See *id.* at 70.

81. *Id.* at 145.

82. Cf. *id.* at 7 (stating that, from the survey responses, "the entire population assesses this risk at .43, and even current smokers have a substantial risk perception of .37").

83. In his discussion of possible policy responses, Viscusi does not even consider a role for tort law. That is consistent with his view that tort law should be employed only in circumstances where consumers underestimate risks. See W. KIP VISCUSI, REFORMING PRODUCTS LIABILITY 64-65 (1991), see also Croley & Hanson, *Enterprise Liability*, *supra* note 40, at 743-51 (summarizing a substantial portion of Viscusi's products liability scholarship).

unregulated markets to work well, we conclude, consumers must be much better informed than they now appear to be.⁸⁴

B. *A Critique of the Conventional Wisdom*

As the previous section indicates, there are two sorts of informational arguments to which we need to respond: Viscusi's somewhat technical and survey-specific arguments and the loose common-sense notion that everyone knows smoking is dangerous. We therefore offer two types of responses. The first type is directed solely at the surveys on which Viscusi relies and the logic that he employs in drawing policy conclusions. Because the responses of the first type are survey-specific, we have opted to place them in an appendix. The thrust of the arguments in the appendix is that the survey and survey data on which Viscusi relies are misleading and that, in any case, Viscusi's interpretations of that data are, at best, dubious. In this section, we provide a second type of response, which is of more general significance. That is, we seek to rebut the view that cigarette smokers are adequately informed. We do so by exploring a number of different ways in which consumers may lack full information relevant to their individual decisions about whether to smoke. In particular, we focus on four areas of potential distortion: first, the "third-person effect" whereby consumers may fail to apply generalized perceptions of risk to themselves; second, the absence of brand- or type-specific risk information; third, the underestimation of cigarettes' riskiness relative to other products and choices; and fourth, information problems related to cigarettes' addictiveness.

1. *The Third-Person Effect*

Although consumers appear to overestimate the health risks of smoking when responding to survey questionnaires, it is not at all clear that these same consumers apply their overinflated risk perceptions to themselves. Indeed, social psychologist Martin Fishbein has criticized the use of general questions in smoking surveys (like those in Viscusi's work) on just those grounds.⁸⁵ Distinguishing between personal beliefs and general beliefs, Fishbein notes that it is beliefs about the risks to oneself, not generalized notions of risk, that affect people's behavior: "Although a person may believe that 'Smoking increases the chances of lung cancer,' this will have little influence on his or her smoking decision if he or she also believes that 'My smoking is *not*

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84. Moreover, as we argue *infra* Part III, consumer information levels are by no means the only relevant factor in deciding whether manufacturers should be liable for cigarette-caused harms.

85. See Martin Fishbein, *Social Psychological Analysis of Smoking Behavior*, in *SOCIAL PSYCHOLOGY AND BEHAVIORAL MEDICINE* 179, 183-84 (J. Richard Eiser ed., 1982).

increasing *my* chance of getting lung cancer.”⁸⁶ We refer to this phenomenon, well-known in survey research,⁸⁷ as the “third-person effect.”

Viscusi concedes that there may be “a discrepancy between the perceived risk to others and the perceived risk to oneself,”⁸⁸ but he ultimately dismisses the possible influence of such a third-person effect by pointing to evidence that “risk assessments influence smoking behavior.”⁸⁹ His point is that because smokers overestimate smoking’s risks by less than nonsmokers do, smokers’ risk perceptions partially explain their decision to smoke.⁹⁰ The third-person effect, however, refers to how people calculate personal risks and not to whether or not they respond to those risks they perceive.

Viscusi seems to assume that, if the third-party effect were present, consumers’ personalized beliefs would be that smoking is risk-free, but this is not a necessary implication.⁹¹ Suppose, for example, that personalized risk assessments tend to be, on average, one-twentieth of consumers’ generalized risk assessments. Under that assumption, Viscusi’s survey evidence would imply that consumers significantly underestimate the personal risks of smoking at the same time that his evidence regarding risk perceptions could still be said to influence smoking behavior. Because Viscusi does not disentangle the influence of the third-person effect from other factors, he may well be overstating dramatically consumers’ personalized assessments of smoking’s risks.

Recently published survey results by Michael Schoenbaum strongly suggest that at least some smokers believe the personalized risks of smoking are significantly lower than the general risks of smoking.⁹² In Schoenbaum’s study, adults ranging from fifty to sixty-two years old were asked to assess their chances of reaching the age of seventy-five.⁹³ Schoenbaum compared

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86. *Id.* at 184.

87. See, e.g., Ralf Schwarzer, *Optimism, Vulnerability, and Self-Beliefs as Health-Related Cognitions: A Systematic Overview*, 9 PSYCHOL. & HEALTH 161, 162-63 (1994) (describing psychological phenomena of “defensive optimism” and the “social comparison bias,” which give rise to beliefs such as, “My fellow smokers might get lung cancer one day, but it is less likely that this would happen to me”); Joop Van Der Pligt, *Risk Perception and Self-Protective Behavior*, 1 EUR PSYCHOLOGIST 34, 36 (1996) (“[A]lthough people seem quite aware of the *relative* risk of specific activities or behaviors, things tend to change when this knowledge is applied to their own behavior. For instance, many smokers accept the association between smoking cigarettes and disease, but do not believe themselves to be personally at risk.”)

88. VISCUSI, *supra* note 49, at 64.

89. *Id.* at 64; see also *id.* at 110 (explaining that risk perceptions do appear to play a slight role in people’s propensity to smoke).

90. See *id.* at 110. It is worth noting that Viscusi’s evidence suggests that varying risk perceptions play a de minimis role. See *id.* (reporting that smokers perceive a lung cancer risk of 37%, which is only 6% less than the average perception of the full sample, and characterizing the discrepancy as “not stark”), *id.* at 114 (calling the discrepancy a “minor disparity”).

91. Cf. *infra* notes 252-253 and accompanying text (explaining how the “stylized smoker” model, which Viscusi concludes is inconsistent with the evidence, may be a straw man because of the extreme assumptions underlying it).

92. See Michael Schoenbaum, *Do Smokers Understand the Mortality Effects of Smoking? Evidence from the Health and Retirement Survey*, 87 AM. J. PUB. HEALTH 755 (1997).

93. See *id.* at 756.

those assessments of perceived survival chances with epidemiological predictions for such individuals, controlling for smoking status. In doing so, he found that survival expectations of “never,” “former,” and “current light” smokers were quite close to actuarial predictions.⁹⁴ In contrast, among “current heavy smokers”—those who smoked twenty-five cigarettes (that is, 1.25 packs) or more per day—expectations of reaching the age of seventy-five were approximately twice as high as actuarial predictions.⁹⁵ Specifically, heavy-smoking men predicted a 50.1% chance of reaching seventy-five, despite actuarial chances of just 26.3%, while heavy-smoking women predicted a 60.1% chance of surviving to seventy-five, despite actuarial chances of only 30.8%.⁹⁶ Contrary to Viscusi’s suggestion, Schoenbaum’s evidence demonstrates that heavy smokers underestimate, without discounting entirely, the risks to themselves.⁹⁷ Moreover, Schoenbaum notes, younger smokers may be even more optimistic. Schoenbaum’s sample was aged fifty and over,

an age group in which most smokers have been smoking for more than 3 decades and have presumably begun suffering adverse health effects of smoking. . . . That respondents in this sample apparently underestimated their risk of premature mortality, possibly to a large extent, suggests that typical new smokers may be making even less well informed decisions.⁹⁸

Schoenbaum’s study, therefore, raises significant doubts about Viscusi’s data and the conclusions that he draws from it. In upcoming sections, we elaborate on Schoenbaum’s findings by providing further evidence that all smokers (and, perhaps, especially younger smokers) are ill-informed.

2. *The Problems of Imperfect Brand-Specific Information*

Even if consumers did know the generic health risks associated with smoking, they would need considerably more information in order to ensure that market outcomes would yield optimal deterrence. In particular, they would also need to know the risks of individual brands and types of cigarettes. In the absence of this information, the market for cigarettes would fail in a number of ways. First, smokers would assume that all cigarettes are equally risky, which would remove any incentive that manufacturers otherwise had to make their particular brands less dangerous.⁹⁹ Investments in safety could not be

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94. *See id.* at 757 tbl.2.

95. *See id.*

96. *See id.*

97. *See id.* at 758. Also in contrast to Viscusi’s findings, Schoenbaum found that “no smoking group appeared to overestimate the likely mortality effect of smoking.” *Id.*

98. *Id.*

99. This may help explain the failure of the Premier cigarette. *See infra* Subsection II.B.4.c.i.

recovered on the market because, by hypothesis, consumers would not appreciate them. Manufacturers, in fact, would have an incentive to cut their safety investments because, by doing so, they could lower their costs of production without lowering consumers' willingness to pay for their product. An "unraveling" of cigarette safety might then occur, as each manufacturer chose to make the smallest possible safety investment.¹⁰⁰

In addition to this lowering of manufacturer care levels, the inability of consumers to identify the risks of specific cigarette brands would also have deleterious activity level effects. That is, even if product safety unraveling did not occur, consumers would nevertheless underestimate the risks of some relatively risky brands of cigarettes and overestimate the risks of relatively safe brands. As a consequence, they would consume too many or too few cigarettes.¹⁰¹

Viscusi emphasizes that low-tar cigarettes are safer than standard cigarettes¹⁰² and indicates that consumers correctly perceive them as such.¹⁰³ It is not clear, however, that so-called "light" cigarettes are any safer than their "regular" counterparts.¹⁰⁴ Indeed, the mistake that Viscusi and

100. For more thorough accounts of this unraveling problem and of how enterprise liability would eliminate it, see Croley & Hanson, *Enterprise Liability*, *supra* note 40, at 776-78, 791-92, and Hanson & Logue, *The First-Party Insurance Externality*, *supra* note 40, at 177-79, 181. The unraveling phenomenon is well-recognized in the products liability literature. See, e.g., 1 AMERICAN LAW INST., ENTERPRISE RESPONSIBILITY FOR PERSONAL INJURY 227 (1991); Howard A. Latin, *Problem-Solving Behavior and Theories of Tort Liability*, 73 CAL. L. REV. 677, 695 (1985); Steven Shavell, *Strict Liability Versus Negligence*, 9 J. LEGAL STUD. 1 (1980); see also Duncan Kennedy, *Distributive and Paternalistic Motives in Contract and Tort Law, with Special Reference to Compulsory Terms and Unequal Bargaining Power*, 41 MD. L. REV. 563 (1982) (noting that consumers tend to "generate fantasies of safety," which leads to the systematic underpricing of goods). The seminal article describing the unraveling phenomenon is George A. Akerlof, *The Market for "Lemons": Quality Uncertainty and the Market Mechanism*, 84 QJ ECON 488 (1970). As we indicate below, however, the phenomenon has often been overlooked in discussions of how best to regulate the market for cigarettes. See, e.g., *infra* Subsection IVC 2 (describing the unraveling problem created by ex ante excise taxes); *infra* note 602 (describing how class action suits may create the same problem); *infra* text accompanying note 641 (explaining how the proposed settlement might lead to unraveling).

101. For a discussion of a closely related activity level inefficiency and of how an enterprise liability regime would eliminate it, see Hanson & Logue, *The First-Party Insurance Externality*, *supra* note 40, at 177-79, 181; and Croley & Hanson, *Enterprise Liability*, *supra* note 40, at 778, 791-92.

102. See, e.g., W. Kip Viscusi, *Cigarette Taxation and the Social Consequences of Smoking*, in TAX POLICY AND THE ECONOMY 51, 69 (James M. Poterba ed., 1995).

103. See, e.g., VISCUSI, *supra* note 49, at 37-41 (describing the health-related comparative advertising that has been fairly common in the cigarette industry, especially with respect to tar levels); VISCUSI, *supra* note 102, at 67 ("Individuals who express concerns about the health consequences of smoking are much more likely to smoke low-tar cigarettes . . .").

104. See Mirjana V. Djordjevic et al., *Self-Regulation of Smoking Intensity: Smoke Yields of the Low-Nicotine, Low-'Tar' Cigarettes*, 16 CARCINOGENESIS 2015, 2018-19 (1993); Lynn T. Kozlowski et al., *Blocking Cigarette Filter Vents with Lips More Than Doubles Carbon Monoxide Intake from Ultra-Low Tar Cigarettes*, 4 EXPERIMENTAL & CLINICAL PSYCHOPHARMACOLOGY 404, 406-07 (1996); Lynn T. Kozlowski et al., *Smokers Are Unaware of the Filter Vents Now on Most Cigarettes: Results of a National Survey*, 5 TOBACCO CONTROL 265, 267-68 (1996); Richard Saltus, *Makers To Reveal Cigarette Additives*, *Massachusetts Order Is First in the Nation*, BOSTON GLOBE, Aug. 20, 1997, at B1 (paraphrasing Gregory Connolly, head of the Massachusetts Tobacco Control Program of the state Department of Public Health, in stating that "most cigarettes advertised as being very low in nicotine actually deliver about as much of the substance as a regular cigarette because they are smoked more intensely").

many smokers appear to be making is evidence of our basic point: Smokers (and, at least to date, administrative regulators and scholars) cannot recognize the riskiness of individual brands of cigarettes.¹⁰⁵ Moreover, the mistake is a consequence of a third problem of imperfect brand-specific information: The incentive of manufacturers is not to make their cigarettes safer—as Viscusi has claimed and as it would be were consumers truly well-informed—but to make their cigarettes *seem* safer.¹⁰⁶ To the extent that manufacturers have succeeded in creating such an impression, it seems likely that many smokers have been lulled into underestimating the risks to themselves of smoking and, thus, into smoking too much.¹⁰⁷

3. *The Problem of Imperfect Relative-Risk Information*

Even if smokers overestimate the absolute risks to themselves of smoking their particular brand of cigarettes, it does not follow that they will be well-informed. To know whether consumers are making truly well-informed decisions, it is necessary to know their assessments of the relative risks of smoking.¹⁰⁸ If, in fact, consumers tend to overestimate some or all of the

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105. The Surgeon General's 1989 progress report summarizes an "Adult Use of Tobacco Survey," conducted in 1986. See SURGEON GENERAL'S PROGRESS REPORT, *supra* note 3, at 181, 247. According to that survey, 50% of then-current smokers believed that "[a]ll cigarettes are probably about equally hazardous," and 45% believed that "[s]ome kinds of cigarettes are probably more hazardous to health than others." *Id.* at 181 tbl.3. There were four subcategories of responses among those in the latter category. Of all smokers, 21% believed that their brand was "less hazardous than others," and 13% believed that their brand was "about the same" as other brands. Only 8% believed that their brand was "more hazardous than others." The remaining 2% did not know. Even that small percentage of smokers (29%) who believed that their cigarettes were more or less dangerous than other cigarettes may well have been wrong. See *infra* note 106 and accompanying text. Viscusi does briefly acknowledge this evidence and its potential significance. See VISCUSI, *supra* note 49, at 149-50.

106. This was a distinction that the industry apparently understood and may have exploited with respect to tar and nicotine levels. Recently released documents regarding a conference of tobacco company scientists in 1968 demonstrates that several of the scientists at the conference emphasized the distinction between a "[h]ealth image" or "health reassurance cigarette," such as "a low tar-low nicotine cigarette which the public accepts as a healthier cigarette," and a "[h]ealth-oriented" cigarette, which is intended to be truly safer. STANTON A. GLANTZ ET AL., THE CIGARETTE PAPERS 129 (1996) (emphasis omitted).

A very similar story can be told with respect to the introduction and eventual dominance of filter-tipped cigarettes in the 1950s. See Kenneth E. Warner et al., *The Emerging Market for Long-Term Nicotine Maintenance*, 278 JAMA 1087, 1088 (1997) (explaining that filters were introduced primarily as a "public relations gambit" in reaction to newly emerging evidence of the link between smoking and lung cancer and that their introduction reversed what had been a decline in per capita cigarette consumption). Cigarette manufacturers continue to market seemingly safer cigarettes that, in fact, may not be safer. The most recent example is the current campaign for Winston cigarettes, which are controversially being marketed as free of additives. See Rajiv M. Rao, *All Natural Killers: RJR's Controversial Additive-Free Cigarettes*, FORTUNE, Dec. 8, 1997, at 40; cf. *infra* notes 210-218 and accompanying text (raising doubts about the health benefits of RJR's "cleaner" cigarette, the Premier).

107. This source of optimism would enhance the third-party effect described above. See *supra* Subsection II.B.1.

108. Indeed, for the reasons that we provide in this subsection, so long as consumers properly assess relative risks, consumers may act as if well-informed even when they grossly underestimate the absolute risk levels. Put differently, consumer estimates of absolute risk levels may be irrelevant to the policy analysis.

other risks to which they are exposed, they may well behave *as if* they underestimate the risks of smoking. That is, insofar as individuals perceive nonsmoking activities as substantial threats to their health or life, they will give less significance, other things being equal, to the risks of smoking.¹⁰⁹

The problem of imperfect relative-risk information is particularly important where smokers significantly overestimate the risks of not smoking relative to the risks of smoking. For example, smokers commonly claim that smoking helps them to keep weight off or reduces their stress levels.¹¹⁰ If those smokers believe the risks of obesity or stress are greater than or comparable to the risks of smoking, then those smokers' decisions are dangerously misinformed.

As it turns out, there is a substantial amount of evidence suggesting that smokers misestimate the relative risks of cigarettes. In 1989, the Surgeon General summarized numerous studies indicating as much.¹¹¹ Between 1970 and 1978, for example, Roper conducted five surveys in which it asked respondents whether they agreed that certain risks "make a great deal of difference in longevity."¹¹² In each one of those surveys, roughly 30% more of the respondents answered "yes" when the risk was "a lot of *tension and stress*" than answered "yes" when the risk was "smokes a pack of cigarettes a day."¹¹³ In 1983, Louis Harris & Associates conducted a national telephone survey of 1254 randomly selected adults.¹¹⁴ Respondents were asked: "In helping people in general to live a long and healthy life, how would you rate the importance of" each of twenty-four health and safety factors on a scale of one to ten?¹¹⁵ The low end of the scale represented the response, "of low importance," and the high end represented "of utmost importance."¹¹⁶ The study yielded several interesting results. For instance, the lowest mean health ranking for all the safety factors among respondents was 6.42 (for "drinking no alcohol"), well above the midpoint of the scale, suggesting that virtually all health factors were viewed as substantial, including "[g]etting 7-8 hours [of] sleep" (8.04) and "[e]ating breakfast daily" (7.61).¹¹⁷ More important, the perceived mean health ranking of "[n]ot smoking" (8.32) indicated that consumers had imperfect relative-risk information. Of the twenty-four health factors, "not smoking" had the tenth highest ranking, placing it somewhere

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109. See *infra* notes 249-250 and accompanying text.

110. See, e.g., Scharf, *supra* note 48, at 641 (noting that the tobacco industry has capitalized on such factors and that one manufacturer encouraged smoking as a weight-loss method with the slogan "Reach for a Lucky instead of a Sweet"); McCullough, *supra* note 5, at 721 (noting that some people smoke to relieve stress).

111. See SURGEON GENERAL'S PROGRESS REPORT, *supra* note 3, at 207-12.

112. *Id.* at 207; see also *id.* at 208 tbl.16 (summarizing the Roper surveys).

113. *Id.* at 208 tbl.16 (emphasis added).

114. See *id.* at 207; see also *id.* at 209 fig.1, 210 fig.2 (summarizing the Harris survey).

115. *Id.* at 209 fig.1.

116. *Id.*

117. *Id.*

near the middle, immediately above "[h]aving friends, relatives, neighbors" (8.18) and below "[n]ever driving after drinking" (9.25), "[k]eeping air quality acceptable" (9.11), "[k]eeping water quality acceptable" (8.95), "[h]aving smoke detectors in home" (8.89), "[k]eeping close to recommended weight" (8.54), "[h]aving blood pressure reading annually" (8.51), "[t]aking steps to control stress" (8.36), "[g]etting enough vitamins, minerals" (8.37), and "[e]xercising regularly" (8.32).¹¹⁸

Those studies, and many others since,¹¹⁹ indicate that consumers' relative-risk information is quite imperfect.¹²⁰ The most recent relevant study that we came across was completed in 1993 by the American Cancer Society.¹²¹ That study found that "[a]lthough Americans are generally aware of the personal health risks associated with tobacco use, the public seriously underestimates the magnitude of the impact cigarette smoking has on the health of the country as a whole" as compared to other health risks.¹²² When asked what they consider to be the country's most serious health risk, for example, 36% of respondents mentioned the AIDS virus, whereas only 9% answered smoking.¹²³ When asked to select from a list of various health risks the single risk that they believe is responsible for the greatest number of deaths, 28% of respondents identified car accidents, 16% named illicit drugs, 12% named AIDS, another 12% answered alcohol abuse, and 7% said murders.¹²⁴ Only 21% identified cigarettes as the number one killer.¹²⁵ Cigarettes, however, kill significantly more than all the other causes of death put together.¹²⁶

When consumers make poor relative risk estimates, even accurate cigarette-specific risk estimates may not prevent them from smoking too much. Thus, studies that examine only cigarette risk estimates may substantially overstate the rationality of smokers' decisions. Unless smokers understand that gaining, say, ten pounds from quitting smoking is healthier than continuing to smoke, they will not make appropriate risk calculations.

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118. *Id.* (emphasis added). As part of the project, Louis Harris & Associates also sampled 103 health experts and asked them to rank the same 24 health factors with respect to the "overall health of the general population." *Id.* at 207, 210 fig.2. Unsurprisingly, they ranked "[n]ot smoking" as by far the most important factor (with a mean ranking of 9.78). *See id.* at 210 fig.2.

119. The Surgeon General's report, for example, summarizes five more recent studies, all of which confirm the conclusions of the Roper and Louis Harris & Associates studies. *See id.* at 207-12.

120. Unsurprisingly, there is also evidence that the problem is particularly acute among smokers, which may help explain why they are smokers. *See id.* at 207, 211 tbl.17.

121. *See* Marttila & Kiley, Inc., Highlights from an American Cancer Society Survey of U.S. Voter Attitudes Toward Cigarette Smoking (Sept. 9, 1993) (unpublished manuscript, on file with the *Yale Law Journal*).

122. *Id.* at 21.

123. *See id.*

124. *See id.*

125. *See id.*

126. *See id.* at 21-23; *see also supra* notes 1-4 and accompanying text.

4. *The Potential Significance of Addiction and Other Related Sources of Imperfect Information*

In addition to the third-person effect, the absence of brand-specific information, and the presence of imperfect relative-risk information, cigarettes' addictiveness has major implications for consumer awareness and deterrability.¹²⁷ Before examining these implications, it is worth highlighting the increasingly abundant evidence that cigarettes are addictive, evidence that has accumulated despite industry claims to the contrary. At the end of 1994, for example, the Office on Smoking and Health at the Centers for Disease Control and Prevention reported the results of a survey conducted on a sample of some 20,000 adults.¹²⁸ The survey found that, of the American adults who currently smoke, 70% "said they would like to quit completely," and 34% try to quit in any given year.¹²⁹ Of the 34% who try to quit in any given year, the study revealed, only 8% are successful.¹³⁰ Similar statistics were reported in 1993 following the Massachusetts Tobacco Survey, which found that 88% of current Massachusetts smokers were at least thinking about quitting, and 75% had attempted to quit at some time in their lives.¹³¹ The Massachusetts survey also found that 43% of smokers had "quit" for at least one day in the past year only to resume smoking subsequently, while 28% of smokers claimed (optimistically, in light of the survey's findings) that they were planning to quit smoking within thirty days.¹³²

That evidence—and a great deal more evidence like it¹³³—poses a sticky challenge for economists, who for the most part have failed to provide a plausible account of the apparent conflict between smokers' revealed

127. Addiction can be understood as a type of information deficit because it leads smokers to underestimate the harms of the marginal cigarette.

128. See Spencer Rich, *Study Says Adult Smoking Dropped to 25% in 1993, Researcher Describes Results as Encouraging*, WASH. POST, Dec. 23, 1994, at A6.

129. *Id.*

130. See *8% of Smokers Who Try To Quit Succeed, Survey Says*, L.A. TIMES, Dec. 23, 1994, at A4.

131. See LOIS BIENER ET AL., 1993 MASSACHUSETTS TOBACCO SURVEY 6 (1994).

132. See LOIS BIENER ET AL., 1993 MASSACHUSETTS TOBACCO SURVEY APPENDIX TABLES 101b1 A3-A (1994).

133. See, e.g., AMERICAN PSYCHIATRIC ASS'N, DIAGNOSTIC AND STATISTICAL MANUAL OF MENTAL DISORDERS 181-82 (3d ed. rev. 1987) (describing "nicotine dependence" and the fact that "[p]eople with this disorder are often distressed because of their inability to stop nicotine use"); *Cigarette Smoking Among Adults—United States, 1993*, 43 MORBIDITY & MORTALITY WKLY REP 925 (1993) (reviewing results of the "National Health Interview Survey," which indicated that roughly 70% of smokers want to quit smoking completely and roughly 34% attempt to quit each year).

Viscusi finds remarkable some related survey evidence. See VISCUSI, *supra* note 49, at 90 ("One would have expected almost all individuals who currently purchase a product to be enthusiastic about it. What we find instead is that there are a large number of negative mentions of cigarettes from the smoking population."); *id.* at 88 ("What is most stunning is the overwhelmingly adverse sentiment against the product, even among current product users. . . . The diversity of the adverse reactions to cigarettes is quite striking and is possibly unequaled by any other widely used consumer product.") Nevertheless, Viscusi gives this type of evidence short shrift when he argues that the consumption of cigarettes is basically indistinguishable from the consumption of ordinary consumer products. See *infra* notes 233-237 and accompanying text.

preferences and their stated preferences.¹³⁴ The possible explanations for this conflict, it turns out, undermine the conclusion that consumers overestimate the risks of smoking. To the contrary, those explanations suggest that consumers underestimate those risks considerably. We explore several of those explanations in the subsections that follow. But first we respond to the claim made by tobacco industry officials that cigarettes are not actually addictive.¹³⁵

a. *The Industry's Claims*

Most cigarette manufacturers have consistently challenged the proposition that cigarettes are addictive.¹³⁶ For instance, in response to a question about the addictiveness of cigarettes, William Campbell, CEO of Philip Morris, answered that "Smoking is not intoxicating. No one gets drunk from cigarettes."¹³⁷ The problem with that response is that there is no reason that a substance's ability to addict users should necessarily be linked to the substance's ability to intoxicate users. As Dr. Jack Henningfield, a scientist at the Addiction Research Center, observes, the full spectrum of characteristics of nicotine that relate to addiction put it "right in the top tier with cocaine, heroin and alcohol."¹³⁸ Cigarette manufacturers also defend their position with the following interesting statistic: Approximately 50% of smokers manage to quit.¹³⁹ This figure derives from evidence that there are about as many living ex-smokers as current smokers. Even discounting the inherent inflation

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134. There is disagreement regarding whether to measure people's preferences according only to what they *do* or according also to what they *say* they want to do. Compare RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* 13-14 (4th ed. 1992) (explaining that evidence of "willingness to pay can be determined with great confidence only by actually observing a voluntary transaction"), with ELIZABETH ANDERSON, *VALUE IN ETHICS AND ECONOMICS* 200-03 (1993) (criticizing the assumptions underlying the use of cost-benefit analysis for policymaking and arguing that what matters normatively are people's "attitudes," not their "revealed" preferences), Elizabeth Anderson, *Values, Risks, and Market Norms*, 17 *PHIL. & PUB. AFF.* 54, 59 (1988) ("[R]evealed preference theory can make claims only about what people choose, not about how they view their choices."), and Amartya Sen, *Behaviour and the Concept of Preference*, 40 *ECONOMICA* 241, 258 (1973) (arguing that "there remains a fundamental question of the relation between preference and behavior"). The fact that smokers trying to quit have spent a lot of money on only somewhat effective smoking cessation programs and products, see *infra* notes 160, 375, and accompanying text, indicates that even if one looks solely at revealed preferences, smokers' conduct is not easily reconciled with the rational actor model.

135. In Subsection II.B.4.e.ii *infra*, we respond to specific claims made by Viscusi that cigarettes are no more addictive than other products or activities.

136. See *infra* note 161.

137. *Frontline: The Nicotine War* (WGBH radio broadcast, Jan. 3, 1995) (transcript on file with the Yale Law Journal).

138. *Id.*; see also U.S. OFFICE ON SMOKING & HEALTH, DEP'T OF HEALTH & HUMAN SERVS., *THE HEALTH CONSEQUENCES OF SMOKING: NICOTINE ADDICTION, A REPORT OF THE SURGEON GENERAL* at iv-v (1988) (reporting that "the processes that determine tobacco addiction are similar to those that determine addiction to other drugs" such as cocaine and heroin).

139. See Robert L. Rabin, *A Sociolegal History of the Tobacco Tort Litigation*, 44 *STAN. L. REV.* 853, 871 & n.114 (1992); cf. Epstein, *supra* note 22 (suggesting that "claims of addiction failed [in tobacco lawsuits] because too many smokers had already quit").

caused by the greater mortality of smokers compared to ex-smokers, the 50% figure remains impressive.¹⁴⁰ But it also appears inconsistent with the emerging body of evidence indicating that only a small percentage of people who attempt to quit succeed.¹⁴¹

Actually, however, the two bodies of evidence are not necessarily inconsistent. The industry's 50% figure is cumulative, presenting the number of smokers who manage to quit, before dying, over all of their years of smoking, and often after many unsuccessful attempts. That is, if 34% of current smokers attempt to quit each year, but only 8% of those attempts are successful,¹⁴² then about 2.7% of smokers will quit each year, leading to a cumulative 50% quitting rate over about twenty-five years.¹⁴³ In twenty-five years, that is, fifty of 100 smokers will have quit smoking, but those 100 smokers will have made a total of 575 attempts to quit—11.5 failed attempts for each success. This average figure, of course, represents a more complicated reality: A few smokers are able to quit successfully the first time they try, others require several attempts, and the majority are unable to quit even though they try time after time. Properly understood as cumulative, then, the industry's 50% figure may dramatize the difficulty, not the ease, of quitting smoking.¹⁴⁴

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140. The evidence may be misleading inasmuch as people who smoke cigarettes seem less likely to call themselves "smokers" in survey settings (or otherwise) than people who stop smoking are to call themselves "ex-smokers." See Edwin T. Fujii, *The Demand for Cigarettes: Further Empirical Evidence and Its Implications for Public Policy*, 12 APPLIED ECON. 479, 480 (1980) ("The understatement of the extent of cigarette smoking in surveys is exactly what we might expect. Long experience with survey evidence suggests that respondents tend to provide interviewers with a favorable picture of themselves and hence, in this case, to understate their extent of cigarette smoking."); Kenneth E. Warner, *Possible Increases in the Underreporting of Cigarette Consumption*, 73 J. AM. STAT. ASS'N 314, 314-15 (1978) (suggesting that evidence of underreporting of cigarette consumption might be explained by the increasing social undesirability of smoking).

141. See Tara Parker-Pope, *Facts About the Global Tobacco Business*, WALL ST. J., June 23, 1997, at B1; *supra* notes 128-133 and accompanying text.

142. See *supra* text accompanying notes 129-130.

143. We arrived at this estimate by raising .973 (because 97.3% of smokers remain each year) to the 25th power (based on the number of years)—a calculation that yields .504. This rough calculation provides some explanation for how the 50% cumulative quitting figure and the 8% likelihood of quitting success are consistent. This calculation assumes that the same percentage of smokers tries to quit each year, even though some have already succeeded and thus have left the pool (requiring that, each year, at least an additional 1.9% of smokers attempt to quit, having never tried before). It also assumes no difference in mortality rates between smokers and former smokers. Moreover, 25 years may understate the number of years that some smokers smoke before successfully quitting. Estimates of attempts and successes at quitting are from a Centers for Disease Control and Prevention study. See *8% of Smokers Who Try To Quit Succeed, Survey Says*, *supra* note 130.

144. Their public denials notwithstanding, manufacturers seem to understand this perfectly well. The consensus view of the industry's own researchers appears to be that nicotine is addictive. See K. Michael Cummings et al., *What Scientists Funded by the Tobacco Industry Believe About the Hazards of Cigarette Smoking*, 81 AM. J. PUB. HEALTH, 894, 894-96 (1991). Indeed, the recent release of documents from Brown & Williamson and other cigarette manufacturers strongly suggests that manufacturers have long known of the addictive properties of nicotine. See Philip J. Hilt, *Tobacco Company Was Silent on Hazards*, N.Y. TIMES, May 7, 1994, at A1; see also Sheryl Stolberg, *Defectors Helping To Crack Wall Around Tobacco Firms*, L.A. TIMES, Apr. 3, 1996, at A1 (discussing the affidavits of former Philip Morris employees to the FDA, which state that company executives interfered with research on cigarettes' health harms and lied to Congress about addiction). The Brown & Williamson documents are surveyed exhaustively in several articles in the July 19, 1995, issue of the *Journal of the American Medical Association*, see 274 JAMA 219

The question to which we now turn is the economists' response to the issue of nicotine addiction. Economists have not offered a convincing explanation of the disparity between smokers' revealed preferences (the fact that they smoke) and their stated preferences (that they want to quit).¹⁴⁵ In the next three subsections, we explore several explanations for this conflict, explanations suggesting that consumers underestimate rather than overestimate the risks of smoking. Then, in Subsection II.B.4.e, we respond specifically to evidence offered by Viscusi that cigarettes are not in fact addictive.

b. *Identifying the Relevant Margin: The Problem of Path Dependence*

Typically, economists describe consumption choices of rational actors as taking place on an incremental or marginal basis.¹⁴⁶ The question facing the consumer is typically said to be of the following sort: Should she purchase one (more) widget? If the answer is yes, that does not imply that the consumer should continue to purchase widgets on a regular basis in perpetuity. Indeed, it does not even imply that the consumer should purchase a second widget. Owing to, among other things, budget constraints and the law of diminishing marginal returns, the decision whether to purchase each new widget requires its own independent analysis.

In contrast, Viscusi seems to imagine that consumers conduct a different sort of marginal calculus. He suggests that consumers compare all of the benefits that they will receive from the "marginal" decision to become a "smoker" with "the *incremental lifetime* death risk from lung cancer to a smoker."¹⁴⁷ The question of how consumers frame the smoking decision is

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(1995), and are also available on the World Wide Web, see *Tobacco Control Archives: Brown and Williamson Collection* (visited Nov. 13, 1997) <<http://www.library.ucsf.edu/tobacco/index.html>>. Then-FDA Commissioner David Kessler testified to Congress that Brown & Williamson had spent several years growing a genetically altered variety of tobacco that contains very high doses of nicotine and had used ammonia as a cigarette additive to increase the amount of nicotine delivered to smokers. According to Kessler, this new information lays to rest "any notion that there is no manipulation and control of nicotine undertaken in the tobacco industry." Philip J. Hilts, *Tobacco Company Chief Denies Nicotine Scheme in Testimony*, N.Y. TIMES, June 24, 1994, at A1. Commissioner Kessler also pointed to numerous patents illustrating that the industry has been working to sustain addictive nicotine levels in tobacco products. These include patents to increase nicotine content by adding nicotine to the tobacco rod, filters, and wrappers; patents on the extraction of nicotine from tobacco; and patents to develop new chemical variants of nicotine. See *Companies' Alleged Nicotine Manipulation Is Issue for FDA, Kessler Tells House Panel*, PRODUCTS LIABILITY DAILY (BNA), Apr. 8, 1994, available in LEXIS, BNA Library, PLD File (discussing patents that illustrate the industry's intent to increase the nicotine content of cigarettes); see also Kelder & Daynard, *supra* note 3, at 77 ("[The] evidence [from the FDA, whistleblowers, and internal tobacco company documents] . . . indicates that the tobacco industry manipulates nicotine levels in their products with the intent of addicting or maintaining the addiction of consumers.").

145. See *supra* notes 128-133 and accompanying text.

146. See, e.g., ROBERT COOTER & THOMAS ULEN, *LAW AND ECONOMICS* 25-26 (1988); RICHARD G. LIPSEY & PETER O. STEINER, *ECONOMICS* 131-37 (6th ed. 1981); PAUL A. SAMUELSON & WILLIAM D. NORDHAUS, *ECONOMICS* 447-48 (13th ed. 1989).

147. VISCUSI, *supra* note 49, at 34 (emphasis added). Perhaps Viscusi frames the consumer decision

critical. As Viscusi briefly acknowledges, perceptions of per cigarette risks may differ from perceptions of long-term smoking risks. He writes:

Lifetime risks are substantial, but the risks from a pack of cigarettes or a single cigarette are relatively small, producing a tendency to overestimate the risk level. An open issue that will affect the direction bias for smoking behavior is the extent to which individuals are thinking of the lifetime risk or the individual cigarette risk when making smoking decisions.¹⁴⁸

Thus, Viscusi apparently justifies framing the consumer decision in the unusual way that he does by claiming that if, indeed, consumers do make their decisions to smoke on a per cigarette basis, then, for that very reason, consumers likely overestimate the risks. We disagree.

Even assuming Viscusi is correct that consumers would overestimate smaller risks, the actual risk of one cigarette or one pack is probably infinitesimal.¹⁴⁹ Even a consumer who egregiously overestimates this risk is likely to find it insignificant. In the cigarette-at-a-time decision model, the health risk from the marginal cigarette is not Viscusi's 43% perceived risk of lung cancer from being a smoker; it is more likely to be that figure divided by the number of cigarettes smoked over a "smoker's" lifetime, something on the order of .0001% or .0002%.¹⁵⁰ Even if the smoker were to overestimate this risk by a factor of two, five, or ten, it would appear trivial. Contrary to Viscusi's suggestion, however, there is conflicting evidence and theory on whether people exaggerate such small risks. Some scholars argue that, below a certain threshold, consumers *discount* risks altogether, treating them as if they were zero.¹⁵¹ Other scholars argue that, because of certain biases and

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in the unusual way that he does because the survey upon which he relies was itself implicitly conducted from the standpoint of a one-shot, long-term decision model of smoking. Survey respondents were asked about the health risks to a "smoker." To most respondents, this likely connoted long-term and frequent consumers of cigarettes. See *infra* notes 789-791 and accompanying text.

148. VISCUSI, *supra* note 49, at 25.

149. As far as we know, no one has attempted to measure the risk posed by smoking one cigarette

150. This figure is derived by dividing the 43% lifetime perceived risk by one 20-cigarette pack per day for 60 years (.0001%) and 30 years (.0002%). It assumes, of course, that the smoker perceives the total lung cancer risk as a strictly linear function of the amount smoked, so that the marginal risk from each cigarette is invariant. That assumption, though questionable, is common (and often implicit) in the literature. See W. Kip Viscusi, *Secondhand Smoke: Facts and Fantasy*, 18 REGULATION 42, 43 (1995) (explaining that government agencies such as the EPA and OSHA have focused "on linear dose-response relationships"). The assumption is implicit in the recent efforts to estimate the per pack costs and benefits of cigarettes. See, e.g., MANNING ET AL., *supra* note 49, at 82-85; VISCUSI, *supra* note 102, at 67-94.

151. See, e.g., HOWARD KUNREUTHER ET AL., DISASTER INSURANCE PROTECTION: PUBLIC POLICY LESSONS 248-49 (1978) (indicating that individuals often underestimate low-probability risks, such as those presented by earthquakes and floods, and often do not worry about risks that are below a certain threshold). Howard Kunreuther, *The Economics of Protection Against Low Probability Events*, in DECISION MAKING: AN INTERDISCIPLINARY INQUIRY 195, 209 (Gerardo R. Ungson & Daniel N. Braunstein eds., 1982) (noting that consumers may actually ignore low-probability events and their consequences until they perceive that the probability of such an event's occurring has risen above a threshold level), cf. Francis W. Irwin, *Stated Expectations as Functions of Probability and Desirability of Outcomes*, 21 J. PERSONALITY 329, 333 (1953).

heuristics,¹⁵² consumers are likely to underestimate risks associated with products with which they previously had uneventful experiences; thus, consumers may not associate the overall harms of "smoking" with the individual harmless cigarette.¹⁵³

The question of how a smoker frames his or her smoking decision is, at bottom, a question of how well consumers are informed. Market outcomes will not be efficient, of course, if consumers underestimate a product's risks. But even if consumers accurately estimate, or overestimate, those risks when framed as a durable decision, the market will still lead to an inefficient outcome if consumers rarely or only partially apply those estimates to their own consumption choices. The frame, we submit, will turn in part on a consumer's perceptions of cigarettes' addictiveness. A rational actor who believes that cigarettes are addictive—such that any smoking today will very likely be replicated, if not amplified in the future—will frame the decision as Viscusi does.¹⁵⁴ In contrast, a rational actor who believes cigarettes to be nonaddictive will likely frame the decision as a comparison between the marginal benefit of one cigarette (or pack of cigarettes) and its marginal cost.

(providing evidence that people are more likely to state higher expectations of drawing a "favorable" outcome and significantly underestimate expectations of drawing a "negative" outcome when asked to give probability ratings in a card-drawing psychology study).

152. For a compendious and influential collection of essays describing the various biases and heuristics, see *JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES* (Daniel Kahneman et al. eds., 1982).

153. Howard Latin, for instance, argues that, because of the "representativeness heuristic," "[w]hen consumers use particular products without injury, the 'input' in their assessment of product safety—these safe experiences—will lead to an expected 'outcome' of continued safety." Howard A. Latin, "Good" Warnings, Bad Products, and Cognitive Limitations, 41 *UCLA L. REV.* 1193, 1230, 1232 (1994). As a result of such biases, according to Latin, "people often ignore low-probability risks." *Id.* at 1245. From a cognitive capacity perspective, ignoring small risks makes sense. See Howard Kunreuther & Paul Slovic, *Economics, Psychology, and Protective Behavior*, *AM. ECON. REV.*, May 1978, at 64, 67 ("Unless we ignored many low-probability threats, we would become so burdened that any sort of productive life would become impossible."); see also COOTER & ULEN, *supra* note 146, at 416 (describing how the "availability heuristic" may have a similar effect).

Viscusi briefly acknowledges the evidence suggesting that individuals will sometimes underestimate low-probability events such as earthquakes. See VISCUSI, *supra* note 49, at 25. He downplays the significance of the evidence, however, by describing the underestimated events as "hidden" and pointing to other studies in which respondents overestimated these risks once the risks were called to their attention. See *id.* Therefore, Viscusi concludes, "[t]o the extent that cigarettes are among the most-discussed risks in our society, one would expect there to be an overestimation of these hazards." *Id.* We have doubts about Viscusi's attempted reconciliation of the studies. It is not clear that the risks of earthquakes are any more "hidden" than are the risks of individual cigarettes. Moreover, evidence that survey respondents overestimate risks that are made salient to them by survey takers simply highlights a weakness in the survey data on which Viscusi relies. The fact that consumers ignore the same small risks when making consumption choices that they overestimate when responding to survey questions should make one suspicious of survey results of the sort on which Viscusi relies. Cf. Latin, *supra*, at 1246 ("One explanation for the disparity between experimental evidence that low-probability risks are overweighted and observations that people often ignore these risks is that experimental methodology forces high salience for the risks under study while 'real life' experiences seldom make low-probability risks available.").

154. Note that by assuming the frame that he does, Viscusi is implicitly assuming that cigarettes are addictive, an assumption that he rejects elsewhere in his analysis. See *infra* Subsection II.B.4.c.

The latter is true because the decision to purchase a pack of cigarettes by a person who believes cigarettes are nonaddictive does not implicate the long-term calculations that might go with a decision to become a long-term smoker. If the tobacco consumption decision is made strictly one cigarette at a time, only the marginal risks and benefits of that cigarette are relevant. The *marginal benefit* of the next cigarette is likely substantial. The enjoyment of the next cigarette is not much, if at all, diminished by the number that one has consumed in the past or expects to consume in the future. It may not be too much to say that, when a cigarette is consumed, the marginal benefit of that cigarette equals the total benefit, at that moment, of being a smoker.¹⁵⁵ The *marginal cost* of the next cigarette, on the other hand, is tiny. It is quite artificial and most likely not reflective of medical reality to compute the marginal risk for a single cigarette or pack, given that the harmful consequences of smoking seem to be caused by regular smoking over a period of years, not by any single cigarette.¹⁵⁶ Consumers may therefore, correctly, view a single cigarette or pack of cigarettes as posing virtually no health risk. A smoker could smoke one cigarette at a time over the course of a lifetime without ever making a conscious decision to encounter a health risk perceived as significant.¹⁵⁷

Consumers may be capable of producing lifetime mortality rate estimates when someone surveys them, but our argument is that the conditions of their everyday lives—in particular, the incremental, recurring nature of decision points—will not produce such estimates. At the margin, the benefit of the next

155. Cf. OSCAR WILDE, *THE PICTURE OF DORIAN GRAY* 87 (Modern Library 1931) (1891) ("A cigarette is the perfect type of a perfect pleasure. It is exquisite, and it leaves one unsatisfied.")

156. See, e.g., OFFICE ON SMOKING AND HEALTH, U.S. DEP'T OF HEALTH & HUMAN SERVS., *THE HEALTH BENEFITS OF SMOKING CESSATION: A REPORT OF THE SURGEON GENERAL* 92 (1990) (discussing the harms of regular smoking and the benefits of quitting at any point in life); R.G. Rogers & E. Powell-Griner, *Life Expectancies of Cigarette Smokers and Nonsmokers in the United States*, 32 *SOC. SCI. MED.* 1151, 1154 (1991) (same).

157. Professors Rabin and Sugarman make a related point

Unlike the sky-diver, skier, or even the alcoholic, the typical smoker has no feedback mechanism in the course of her daily routine to trigger a sense of imminent jeopardy to physical condition. Indeed, given the long-term nature of the harm from smoking, and the potential for avoiding serious physical consequences by quitting "soon," tobacco use takes on an especially sinister character: cumulative physical debilitation goes largely unnoticed, and, whenever extrinsic risk information is assimilated, a rationale is at hand for discounting one's concern—the risk can be addressed at a later point in time

Rabin & Sugarman, *supra* note 28, at 11-12.

Unfortunately, one of the federally mandated cigarette warnings—"Quitting Smoking Now Greatly Reduces Serious Risks to Your Health," 15 U.S.C. § 1333(a) (1994)—may exacerbate the effects of these phenomena. Viewed from the perspective of Viscusi's idealized smoker, who is making a decision whether or not to continue smoking cigarettes for the indefinite future, the warning sounds like an inducement to quit. The smoker can eliminate many of the ill-health effects of previous smoking simply by quitting. Viewed from the perspective of the one-cigarette-at-a-time smoker, however, the warning sounds more like an inducement to smoke another. The message seems to be that if the next cigarette is the last cigarette, then there is virtually no health-related reason not to have it. Not only will one cigarette pose only de minimis potential health risks, but by not having another cigarette after that one, even that much risk will be substantially reduced, if not eliminated.

cigarette may easily outweigh the harm, resulting in a consumption decision that might be irrational from the perspective of the one-shot decision that Viscusi posits. Any new smoker, therefore, who assumes that smoking is nonaddictive (or who, more likely, underestimates its addictiveness) may well make an inefficient choice to smoke.¹⁵⁸ For such smokers, the costs of deciding to smoke will likely be underestimated given the unanticipated costs of quitting.¹⁵⁹ Since addiction seriously raises such costs, a person might decide to forego the health benefits of quitting in order to avoid the costs of quitting (even if the person would never have smoked the first cigarette if he or she had understood the addictiveness of smoking).¹⁶⁰ In sum, because of the potentially substantial unanticipated costs of quitting (created by the addictiveness of cigarettes), individuals may well choose to endure costs (of continued smoking or of quitting) that greatly exceed any benefits that they might have anticipated when initially deciding to smoke.¹⁶¹ The initial choice

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158. Arguably, consumers who accurately estimate (or overestimate) the addictiveness of cigarettes could make an "efficient" choice when they decide to begin smoking. That also assumes, of course, that those consumers do not underestimate health risks and that there are no other information problems, including those described in this Article. If consumers, fully informed of cigarettes' health risks and addictiveness, decide to start smoking, presumably they have done so because the benefits of doing so outweigh the costs. See VISCUSI, *supra* note 49, at 18, 119-20.

It is not clear to us, however, how consumers could, *ex ante*, accurately estimate the strength of their addiction to smoking. And even if consumers are fully informed of the strength of cigarettes' addictiveness, if manufacturers could have made nonaddictive or less addictive cigarettes but chose not to, then the choices made by some consumers to smoke may well be inefficient. Under a rational choice model, consumers must be presumed to take whatever costs are associated with becoming addicted to cigarettes into account when they commence smoking. If they assumed that addiction was an inevitable property of cigarettes, however, consumers volunteered to become addicted only because they wrongly assumed that smoking entailed becoming addicted. If they were aware that the pleasures of smoking were available without addiction, it is doubtful that they would have chosen to smoke addictive cigarettes. Therefore, it is not clear that consumers' decisions should be treated as informed, even if consumers accurately estimate the addictiveness of the cigarettes they were smoking.

159. Viscusi briefly acknowledges this potential source of inefficiency. See *id.* at 119-20.

160. To be sure, there may be times when continuing to smoke becomes so costly that a person will quit, but that does not imply that the person will not have to endure the substantial costs of quitting.

The unanticipated costs of quitting may help explain the survey evidence that most smokers regret having started smoking but cannot manage to quit, see *supra* notes 128-133 and accompanying text, and why smokers spend \$417.7 million annually in the United States on products to help them quit, see Parker-Pope, *supra* note 141.

161. This model of the choice to smoke can be understood as a form of "path dependence." Path dependence occurs when actors continue to use an inefficient path long after the circumstances warranting its use have disappeared. See Mark J. Roe, *Chaos and Evolution in Law and Economics*, 109 HARV. L. REV. 641, 643-44 (1996); cf. HENRY HANSMANN, *THE OWNERSHIP OF ENTERPRISE* 25-27 (1996) (describing the problem of "lock in"). The path dependency model of cigarette consumption may be well understood—and perhaps exploited—by the cigarette industry. In a 1973 memorandum, Claude E. Teague, Jr., the assistant director of research and development for R.J. Reynolds, noted the need to get young smokers past the initial discomfort of smoking so that they would become habituated:

For the pre-smoker and "learner" the physical effects of smoking are largely unknown, unneeded, or actually quite unpleasant or awkward. The expected or derived psychological effects are largely responsible for influencing the pre-smoker to try smoking, and . . . [to] keep the "learner" going, despite the physical unpleasantness and awkwardness of the period.

In contrast, once the "learning" period is over, the physical effects become of overriding importance and desirability to the confirmed smoker . . .

RJR Confidential Research Planning Memorandum on Some Thoughts About New Brands of Cigarettes for the Youth Market (visited Dec. 9, 1997) <<http://www.gate.net/~jcannon/documents/730202rl.txt>> [hereinafter

to smoke, therefore, may often be inefficient when consumers underestimate the addictiveness of smoking.¹⁶²

On the important question of whether consumers know about cigarettes' addictiveness, consider survey evidence from the Monitoring the Future Project,¹⁶³ regarding the extent to which young smokers see their decision to smoke as a lifelong decision. In that study, high school seniors were

RJR Memorandum].

In light of this path dependency model of addiction, consumer information levels in recent years lose some of their significance. Whatever consumers knew about smoking in 1985, when the study on which Viscusi primarily relies was conducted, may provide little insight into the decisions of many individuals to start smoking sometime in the past and to keep smoking today. After all, many of the smokers surveyed likely began smoking well before that date, at a time when the average consumer might well have perceived a significantly lower risk of smoking. Cf. Rabin & Sugarman, *supra* note 28, at 4 (discussing the steady increase in public perceptions of the danger of smoking). Viscusi points out that there has long been a fairly widespread perception that smoking poses health risks. See VISCUSI, *supra* note 49, at 48-53. As he concedes, however, the opinion poll questions on which he bases his empirical conclusion "cannot resolve the issue of whether the absolute level of risk perceptions is sufficient." *Id.* at 48.

In addition, courts as late as the 1960s found manufacturers not liable because plaintiffs could not prove cigarettes caused their health problems. See, e.g., *Lartigue v. R.J. Reynolds Tobacco Co.*, 317 F.2d 19 (5th Cir. 1963) (holding for manufacturers partially on causation grounds). The first major studies indicating the potentially harmful effects of smoking did not appear until the 1960s. See *supra* notes 59-60 and accompanying text. Information about addiction has been even more recent, much of it coming to light in the last several years (after Viscusi's book was published). See *supra* notes 128-133 and accompanying text. Moreover, any information that has been made available to the public has arguably been contradicted through the marketing and public relations efforts of cigarette manufacturers, see *supra* note 12, not to mention in the congressional testimony of their CEOs, see Alix M. Freedman, *The Deposition: Cigarette Defector Says CEO Lied to Congress About View of Nicotine*, WALL ST. J., Jan. 26, 1996, at A1, John Schwartz, *Tobacco Firm Chief Denies FDA Charges: House Subcommittee Told Cigarettes Were Never Spiked*, S.F. CHRON., June 24, 1994, at A1.

162. Viscusi would likely respond to all of this by arguing that the issue of addiction is irrelevant. As we detail below, Viscusi argues that cigarettes are not in fact any more "addictive" than most other consumer products. See *infra* Subsection II.B.4.e. That conclusion, however, is inconsistent with a growing body of medical research indicating that cigarette smoking is quite addictive. See *supra* notes 138, 144. Even putting that evidence to one side, Viscusi has a problem inasmuch as he himself implicitly assumes that cigarettes are addictive in some meaningful sense when he treats the marginal decision as the "incremental lifetime death risk" of smoking. VISCUSI, *supra* note 49, at 34; see also *supra* notes 149-154 and accompanying text (describing how Viscusi's model of consumer decisionmaking differs from the standard economic model).

Furthermore, the possibility that consumers may vary in their estimates of the addictiveness of smoking might explain one of Viscusi's more striking findings. According to Viscusi, smokers and nonsmokers have roughly similar estimates of the riskiness of smoking. See VISCUSI, *supra* note 49, at 110; Viscusi, *supra* note 102, at 67. Viscusi concludes that the decision whether to smoke, therefore, turns significantly on consumers' varied preferences for risk. See VISCUSI, *supra* note 49, at 110; Viscusi, *supra* note 102, at 67. The difference in consumption patterns, however, could as easily be explained by variations in estimates of addictiveness: Consumers who believe that cigarettes are relatively nonaddictive are more likely to begin smoking, other things being equal.

163. The project is being conducted by the Institute for Social Research at the University of Michigan. The study results referred to in the text are unpublished, but are summarized in U.S. DEPT. OF HEALTH & HUMAN SERVS., PREVENTING TOBACCO USE AMONG YOUNG PEOPLE: A REPORT OF THE SURGEON GENERAL 84-87 (1994) [hereinafter PREVENTING TOBACCO USE]. The only potentially relevant survey evidence that Viscusi discusses comes from a 1974 study that reported that approximately 75% of children between the ages of 7 and 14 agreed with the statement that "[i]t is very hard to stop smoking." VISCUSI, *supra* note 49, at 121 tbl.6-1 (citing F.W. Schneider & L.A. Vanmastrig, *Adolescent Preadolescent Differences in Beliefs and Attitudes About Cigarette Smoking*, 87 J. PSYCHOL. 71 (1974)). Of course, that figure implies that 25% of those children did not agree that it is hard to stop smoking, significantly more than the current national teenage smoking rate of 16%. See Andrea Adelson, *Is Anybody Getting the Picture? Despite Ads, Teen-Age Smoking Is Unabated*, N.Y. TIMES, July 17, 1997, at D1.

surveyed each year for one decade—from 1976 to 1986—and then again five years later after graduating. In the first stage of the survey, seniors were asked “Do you think you will be smoking cigarettes in five years from now?”¹⁶⁴ At the second stage of the survey, respondents were again asked about their current smoking status. Of those respondents who smoked at least one pack per day as high school seniors, 32% of them predicted at the first stage that they would “probably” or “definitely” stop smoking within five years.¹⁶⁵ At the second stage of the survey, however, only 13% of those graduates had quit, while nearly 70% continued to smoke more than one pack per day.¹⁶⁶ Of those high school seniors who smoked about one half pack per day, 42% predicted that they would probably or definitely quit within five years; only 19% actually did.¹⁶⁷ Moreover, nearly half of those seniors had increased their habit to more than one pack per day five years out.¹⁶⁸ Finally, of the seniors who smoked only one to five cigarettes per day, 61% believed that they would probably or definitely quit within five years.¹⁶⁹ As it turned out, only 30% managed to quit, while nearly half at least doubled their smoking rates.¹⁷⁰

As the Surgeon General’s Report summarized: “When earlier smoking behavior is controlled, seniors’ expectations to smoke had very limited power to predict subsequent smoking behavior.”¹⁷¹ “[T]he expectation to abstain from smoking in the future seemed overwhelmed by the strong forces that tend to maintain or advance smoking behavior once it is established.”¹⁷² This evidence suggests that Viscusi’s view that beginning smokers base their decision on their perceptions of the “incremental lifetime risks” of smoking is fundamentally flawed. Of all the respondents who smoked as seniors, only around 8% believed that they would “definitely” be smoking five years later,¹⁷³ and thus only that many might have considered the risks of smoking even for five years.

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164. PREVENTING TOBACCO USE, *supra* note 163, at 84.

165. *Id.* at 84 tbl.19.

166. *See id.* at 85 tbl.20.

167. *See id.* at 84 tbl.19, 85 tbl.20.

168. *See id.* at 85 tbl.20.

169. *See id.* at 84 tbl.19.

170. *See id.* at 85 tbl.20.

171. *Id.* at 84.

172. *Id.* at 87.

173. *See id.* at 84 tbl.19; *cf. TV Spots Hit Smoking with Graphic Visuals*, BOSTON GLOBE, Dec. 28, 1997, at A22 (“When I speak to smokers, almost all of them say they will quit within two years . . . . When I ask if they expect to quit within the next two weeks, the answer is invariably no.” (quoting Howard K. Koh, Massachusetts Public Health Commissioner)).

c. *Temporal Separation of Benefits and Costs:
The Problem of Myopia*

Even if Viscusi were correct that smoking is viewed by smokers as a long-term decision (in other words, that consumers do somehow understand the extent of cigarettes' addictiveness even before they are addicted), there are additional attributes of the cigarette consumption context that may lead consumers to underestimate smoking's risks. Again, the challenge is to explain how a person's revealed preferences (e.g., smoking a cigarette) can conflict so dramatically with that person's stated preferences (e.g., "I want to quit smoking"). Economists have offered several plausible explanations for the seemingly contradictory behavior, all of which relate to the context or structure of the smoking decision. In the next two subsections, we discuss two such explanations.¹⁷⁴

FIGURE 1

The most common explanation relies on the fact that the health effects of smoking are temporally distant from the pleasures of smoking individual cigarettes. The intertemporal choice literature suggests that the discount rate

174. In addition to the features of cigarettes described in the next two subsections that might contribute to their addictiveness, there is a growing body of evidence indicating that cigarettes are addictive because of their physiological and pharmacological effects. The Surgeon General first addressed the issue of addiction in 1988, drawing the following three conclusions: "1. Cigarettes and other forms of tobacco are addicting. 2. Nicotine is the drug in tobacco that causes addiction. 3. The pharmacologic and behavioral processes that determine tobacco addiction are similar to those that determine addiction to drugs such as heroin and cocaine." U.S. OFFICE ON SMOKING & HEALTH, *supra* note 138, at 9. In 1964, the Surgeon General had stated that "[t]he tobacco habit should be characterized as an habituation rather than an addiction." 1964 SURGEON GENERAL'S REPORT, *supra* note 60, at 34.

that some consumers use to measure the long-term health effects of smoking (or the costs of quitting) is greater than the discount rate used to measure the short-term benefits of satisfying a craving to smoke.¹⁷⁵ George Ainslie, a psychologist, illustrates the point graphically, as depicted in Figure 1.¹⁷⁶

Suppose that the individual is choosing between two rewards: a smaller, earlier reward *S*, which occurs at t_1 , and a bigger, later reward *B*, which occurs at t_2 . More concretely, imagine that *S* is the satisfaction that a consumer would receive if she were to smoke a pack of cigarettes today and that *B* is the incremental increase in long-term health that the smoker would enjoy if she did not smoke that pack. The lines depict the present utility of the rewards that the consumer enjoys over time. As George Loewenstein and Richard Thaler explain:

If the individual discounts the future at a constant rate, that is, if discounting is constant for different time delays, then the curves will never cross. However, if discounting decreases as a function of time delay, as the empirical research suggests, then the curves may cross, leading to a reversal of preference. When both rewards are sufficiently distant, the individual prefers *B*, but as *S* becomes more proximate, its relative value increases until at t^* , *S* abruptly comes to dominate *B* in terms of present utility. The significance of the crossing curves is that behavior will not generally be consistent over time.¹⁷⁷

There is considerable evidence to suggest that this sort of dynamic inconsistency is common.¹⁷⁸ Loewenstein and Thaler, for example, highlight the following anecdote: In West Virginia, the passage of a law mandating that students under the age of eighteen who drop out of school lose their driving permits led, in only one year, to a reduction in the dropout rate of one-third.¹⁷⁹ It seems unlikely that the expected costs of losing drivers' permits for a few years could tip so many potential dropouts' rational human capital investment decisions toward completing high school. Instead, the results suggest "extremely myopic preferences."¹⁸⁰ Similarly, many more people

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175. Note that this phenomenon, if true, violates the predictions of economic theory. See George Loewenstein & Richard H. Thaler, *Anomalies: Intertemporal Choice*, J. ECON. PERSP., Fall 1989, at 181, 183. Nevertheless, there is considerable evidence that the phenomenon is real. See *id.*

176. See George Ainslie, *Specious Reward: A Behavioral Theory of Impulsiveness and Impulse Control*, 82 PSYCHOL. BULL. 463, 471 fig.1 (1975). The diagram provided is a slightly modified version of the Ainslie original.

177. Loewenstein & Thaler, *supra* note 175, at 185.

178. See Ainslie, *supra* note 176.

179. See Loewenstein & Thaler, *supra* note 175, at 182.

180. *Id.* Commentators often suggest—as do the examples offered by Loewenstein and Thaler—that this tendency for myopic behavior is especially acute during adolescence. In that light, it bears noting that "[e]ighty-two percent of adults who ever smoked had their first cigarette before the age of 18, and more than half of them had already become regular smokers by that age." Regulations Restricting the Sale and Distribution of Cigarettes and Smokeless Tobacco To Protect Children and Adolescents, 61 Fed. Reg. 44,396, 44,398 (1996) (citing PREVENTING TOBACCO USE, *supra* note 163, at 65).

avoid sun exposure to prevent large pores and blackheads in the short term than will act to minimize the long-term, much more significant risk of skin cancer.¹⁸¹ Because of this sort of intertemporal myopia, even smokers who fully anticipate the addictiveness and health effects of smoking may be making irrational decisions.¹⁸²

d. *Disaggregated Benefits and Pooled Costs:
The Problem of Multiple Selves*

Some scholars prefer an alternative to the discount rate explanation for the conflict between what smokers say and what they do.¹⁸³ For example, Thomas Schelling, one of the first economists to focus on the issue, demonstrates that “[p]eople behave sometimes as if they had two selves, one who wants clean lungs and long life and another who adores tobacco.”¹⁸⁴ To understand smoking behavior, Schelling argues, it is useful to view individuals as comprising at least two selves who “are in continual contest for control.”¹⁸⁵ With respect to most consumption choices, there is a “dynamic programming self”—a sort of referee—that manages continually changing wants and desires, harmonizing them over time in an evenhanded manner.¹⁸⁶ But with respect to some consumption choices, that referee does not exist. Instead, there is a series of impermanent selves. Each has its own needs and desires, and some have preferences about what should be done when other selves are in command. Thus, the nicotine addict wants to smoke when he is in charge, but another self is concerned about health and wants not to smoke even when the addict is in command.¹⁸⁷

In the wake of Schelling’s path-breaking work,¹⁸⁸ numerous scholars have offered similar multiple selves models.¹⁸⁹ It is critical to recognize that

181. See Loewenstein & Thaler, *supra* note 175, at 182.

182. Viscusi describes an extreme version of myopia—one in which “[t]he smoker simply ignores the risk component since these risks are remote.” VISCUSI, *supra* note 49, at 21. According to his version, “[o]nly the immediate gratification provided by cigarettes drives consumer behavior.” *Id.* Contrary to Viscusi’s suggestion, however, the fact that consumers may apply a larger discount rate to more remote risks does not imply that consumers ignore those risks or that only the immediate gratification of smoking matters to consumers. See *infra* notes 251-256 and accompanying text (arguing that Viscusi has provided an extreme, straw man version of “addiction”).

183. One perceived problem with the discount rate explanation is that it implies that people have an astronomically (and, perhaps, implausibly) high discount rate in some circumstances, even when the future, t_2 , is only a few hours away. See THOMAS C. SCHELLING, CHOICE AND CONSEQUENCE 62-63 (1984).

184. *Id.* at 58.

185. *Id.*

186. *Id.* at 86.

187. See *id.* at 86-87. Schelling is unwilling to commit regarding the extent to which his multiple selves model is merely metaphorical. See *id.* at 96.

188. See also T.C. Schelling, *Economics, or the Art of Self-Management*, AM ECON. REV., May 1978, at 290; Thomas C. Schelling, *Self-Command in Practice, in Policy, and in a Theory of Rational Choice*, AM. ECON. REV., May 1984, at 1.

189. See, e.g., JON ELSTER, ULYSSES AND THE SIRENS 103-11 (rev. ed. 1984); George Ainslie, *Beyond Microeconomics, Conflict Among Interests in a Multiple Self as a Determinant of Value*, in THE MULTIPLE

these models do not assume that consumers are ignorant of the fact that cigarettes are risky or that consumers completely ignore their risk perceptions in making consumption choices. Indeed, the models acknowledge that smokers are reflective creatures who do, at least partially, take into consideration the long-term risks and benefits of smoking. Moreover, they acknowledge that other variables, including price, can affect consumption decisions in predictable ways. A major advantage of multiple selves models, however, is that they help to make sense of common behavior that, at least on its face, does not comport with the basic rational actor model. As Schelling puts it:

Many of the skills and maxims and stratagems for coping with one's own behavior become less mystifying and more familiar if we can recognize them as the same principles and stratagems that apply to managing someone else—someone in a close relation, with a paternalist or senior-junior quality like that between parent and child, teacher and pupil, missionary and convert, master and apprentice, or guide and follower.¹⁹⁰

Individuals “struggle for self-command” through the application of tactics that are essentially variations on the Homeric episode in which Odysseus ordered that his hands be tied to the ship's mast so that he could not be seduced by the song of the Sirens.¹⁹¹

Anecdotal evidence suggests that such tactics are routinely employed by smokers. Some smokers, for example, limit themselves to smoking only cigarettes that are given to them; they have a “rule” against buying cigarettes, a practice that many admit is not easily sustained. Similarly, closet smokers conceal their habits from some or all of their friends and loved ones, a strategy that can reduce the number of cigarettes smoked but can also have the unintended effect of reducing the smoker's social encounters. Other tactics include enlisting the aid of a trusted friend to allocate cigarettes in limited quantities or smoking only in a limited number of predefined circumstances. Thomas Schelling, for instance, reports his own rule of smoking only after an “evening meal,” a strategy that ultimately failed.¹⁹² Many heavier smokers also apparently attempt to “tie their hands.” As Loewenstein and Thaler have

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SELF 133 (Jon Elster ed., 1986); Jon Elster, *Weakness of Will and the Free-Rider Problem*, 1 *ECON. & PHIL.* 231 (1985); Ian Steedman & Ulrich Krause, *Goethe's Faust, Arrow's Possibility Theorem and the Individual Decision-Taker*, in *THE MULTIPLE SELF*, *supra*, at 197; Richard Thaler, *Toward a Positive Theory of Consumer Choice*, 1 *J. ECON. BEHAV. & ORG.* 39 (1980); Richard H. Thaler & Hersh M. Shefrin, *An Economic Theory of Self-Control*, 89 *J. POL. ECON.* 392 (1981); Gordon C. Winston, *Addiction and Backsliding: A Theory of Compulsive Consumption*, 1 *J. ECON. BEHAV. & ORG.* 295 (1980).

190. SCHELLING, *supra* note 183, at 63.

191. *Id.* at 76-82 (describing ways in which individuals manage or discipline their many selves).

192. *See id.* at 77.

observed, many "smokers buy cigarettes by the pack (rather than by the carton which is cheaper)."¹⁹³

For many, these sorts of efforts to smoke in moderation fail, driving smokers to attempt quitting entirely. As Schelling explains, "Just as it may be easier to ban nuclear weapons from the battlefield *in toto* than through carefully graduated specifications on their use, zero is a more enforceable limit on cigarettes . . . than some flexible quantitative ration."¹⁹⁴ Efforts to quit, too, are often fashioned in a self-binding way such that the common self can justify singling out the current self to bear the initial burden of the decision to quit. *Resolutions* to quit smoking are an example. The common self does not fully control the current self's decision to smoke, but it can raise the costs to a future self by publicly resolving to stop smoking on a date certain sometime in the future, invoking shame as an aid to self-government.¹⁹⁵ Another feature common to many smokers' attempts to quit is that they occur at special moments, such as on smokers' birthdays or on New Year's Day.¹⁹⁶ The multiple selves model may also explain some of the logic behind the annual "Great American Smokeout," in which smokers are urged to stop smoking even for just the day.¹⁹⁷

With those tactics in mind, it seems plausible that the *desire* to quit smoking (or not to start smoking) might itself raise consumers' estimates of the risks of smoking. Survey data showing that respondents overestimate the risks of smoking, therefore, might reflect merely a desire on the part of many consumers to trick themselves into overestimating those risks. The problem with any instrumental attempt to inflate the underlying risks in that way is that the current self is not easily fooled. The person whose watch is set ahead of the true time, for instance, will often adjust for that fact. As Schelling puts the point, "There is one family of tactics common in interpersonal relations that

193. Loewenstein & Thaler, *supra* note 175, at 186.

194. SCHELLING, *supra* note 183, at 77.

195. See *id.* at 76.

196. See *id.* The American Cancer Society (ACS) last year sponsored a sweepstakes for smokers who purchased Nicorette Gum or Nicoderm patches. The tear-off shelf flyer read in large and bold print "For Mother's & Father's Day, Commit to Quit!" AMERICAN CANCER SOCIETY COMMIT TO QUIT' (advertisement, on file with the *Yale Law Journal*).

197. The ACS has been sponsoring the Great American Smokeout, on the third Thursday of each November, since 1977. As part of their "Commit to Quit plan," the ACS encourages smokers to choose a date for quitting and to mark that date on their calendar. American Cancer Society, *Great American Smokeout, Commit To Quit* (visited Dec. 9, 1997) <<http://www.cancer.org/gasp/contract.html>> Similarly, the ACS encourages smokers seeking to quit to put their intention "in writing—and sign it" and makes available a "Contract to Quit." *Id.* In their "Quit Smoking Tips," the ACS explains that "[c]old turkey is the most successful" method of quitting and then advises quitters to "[t]hrow away all cigarettes and matches" and "[h]ide lighters and ashtrays." American Cancer Society, *Quit Smoking Tips* (visited Dec. 9, 1997) <<http://www.cancer.org/tobacco/tr8.html>>. The ACS then encourages those who prefer a more gradual approach to make it harder for themselves to smoke cigarettes—for instance, by buying one pack at a time and by wrapping up that pack and putting elastic bands around it. See *id.* Another tip for the smoker is to "[s]moke with your left hand if you usually smoke with your right"—a nearly literal analogue of tying one's hands to the mast. *Id.*

is peculiarly unavailable, or nearly so, in dealing with oneself. That is deceit."¹⁹⁸ Even so, we think it common that individuals *attempt to deceive* themselves, even if they are only partially successful.

For a variety of reasons, these strategies for binding the current self are likely to be especially ineffective in the cigarette context.¹⁹⁹ Cigarettes are widely available and relatively inexpensive. Moreover, a smoker can often conceal the fact that he or she has smoked cigarettes. Therefore, the multiple selves model of smoking behavior leads to a prediction that is extremely difficult to square with the basic rational actor model. Specifically, some smokers favor policies that help smokers precommit to quit or curtail smoking. Indeed, as Schelling observes, "[i]f there were some way that cigarettes could be reliably put beyond reach, and people could vote on whether they would like that done, my guess is that a majority of smokers would elect to deny themselves the possibility of lighting another cigarette."²⁰⁰ In contrast, if smokers were rational actors of the sort imagined by most economists, they would be squarely against policies that made smoking more difficult.

As far as we know, there has not been an extensive empirical test of Schelling's prediction. That 70% of smokers say they want to quit and many try to quit but fail,²⁰¹ however, should give pause to those who assume that smokers are making decisions based on a single, stable set of preferences. The multiple selves conception of consumers may also help explain a result that Viscusi finds remarkable: Even smokers in the surveys he reports had predominantly negative things to say about smoking and very few positive things to say.²⁰² The artificiality of the survey context, where the respondent is not making an immediate consumption decision but is invited to consider his or her habit abstractly and in the long term, generates an emphasis on the negative side of the equation. It may be that in the real world (e.g., at the convenience store counter), exactly the opposite side of the equation is implicated.²⁰³

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198. SCHELLING, *supra* note 183, at 78.

199. *Cf. id.* at 69-73 (describing various relevant product dimensions that may affect how difficult self-command is likely to be).

200. *Id.* at 74; *see also id.* at 78 ("Doctors report that when patients are flatly told that their condition makes it imperative they cease smoking at once, the patients quit not only more reliably than when they are left any choice, but far more comfortably. Continual indecision . . . aggravates both the discomfort and the temptation . . .").

201. *See* Parker-Pope, *supra* note 141.

202. *See* VISCUSI, *supra* note 49, at 88-95; *supra* note 133.

203. On the day that the tobacco settlement was announced, some newspapers included among the stories on the settlement a public reaction section. The samplings of public opinion were by no means scientific; nor were they intended as a test of the multiple selves model. Still, the responses of smokers to the news seem to suggest that, indeed, some smokers would support a settlement that made quitting easier. In the *Boston Globe*, for example, three of the six interviewees were regular smokers, and only they seemed clearly to favor the settlement. They did so, it appears, because they believed the settlement might help them quit. *See "How Do You Feel About the Settlement with the Tobacco Industry?"*, BOSTON GLOBE, June 21, 1997, at A10; *see also* Lynda Richardson, *The Smokers: Reacting with Skepticism but Also with Some Hope*, N.Y. TIMES, June 21, 1997, at 8.

In sum, the multiple selves model is important in two ways to understanding the results of Viscusi's survey evidence. First, it makes less relevant the underlying estimate of smoking's costs (because the current self does not take into account the full costs to future selves), and second, it helps to explain why respondents might artificially inflate those estimates.

e. *The Economists' Response*

The issues discussed in this section might be characterized as "addiction" problems inasmuch as they create a conflict between what a consumer wants to do and what the consumer actually does. Once one takes seriously the evidence that cigarette smoking is addictive, the claim that a smoker's decision to keep smoking is efficient is less easily maintained. In this subsection, we discuss specific evidence put forward by Professor Viscusi in support of his claim that cigarettes are not addictive in any meaningful sense. In our view, the evidence he presents is either unconvincing or, in some instances, actually supports our contention that cigarettes are addictive.²⁰⁴

i. *The Premier Experiment*

Viscusi draws his first evidence from the market for cigarette substitutes, which he sees as inconsistent with the predictions made by the sorts of models of cigarette addiction discussed above. Responding to Schelling in particular,²⁰⁵ he points out that such substitutes have been offered but have failed, suggesting that consumption choices are not driven by any sort of addiction:

[I]t appears that most consumers enjoy smoking as a consumption decision. In 1988 R.J. Reynolds introduced the Premier cigarette . . .

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204. Of course, if cigarettes are not addictive, then the fact that most current smokers began smoking as minors loses some of its significance. Viscusi dedicates a chapter to reviewing survey results and arguing that the smoking decisions of teenagers are just as "sensible" as those of adults. See VISCUSI, *supra* note 49, at 10-11, 119-37.

The observations that we make above and below regarding Viscusi's evidence, arguments, and policy conclusions regarding the smoking decision of adults apply equally to his evidence, arguments, and policy conclusions regarding that of children. We would add also that the evidence with regard to children's assessment of risk seems especially inapposite. Viscusi at one point acknowledges the possibility that the young smoker may not "fully recognize how his or her future self will value health as compared with smoking," though he concludes that young people make risk-sensitive smoking decisions. *Id.* at 119.

205. See W. Kip Viscusi, *Strategic and Ethical Issues in the Valuation of Life*, in STRATEGY AND CHOICE 359, 372 (Richard J. Zeckhauser ed., 1993). Schelling conjectures that smokers would be willing to pay a great deal, on the order of \$100 billion, for "a reliable way to quit cigarettes—to quit even wanting them—without torment or suspense or loss of privacy or any restrictions on mobility or any physical side effects." SCHELLING, *supra* note 183, at 74. The path dependence model implies the same prediction. If an inexpensive way to leave the current path were discovered, decisionmakers would be much more likely to take the new path. Cf. Parker-Pole, *supra* note 141 (describing current expenditures on smoking cessation aids).

[which was] [e]xternally indistinguishable from a traditional cigarette . . . . Smokers of the Premier could enjoy the physical movements of holding a cigarette and the oral gratification achieved through cigarette smoking as well as the nicotine that smokers presumably desire. . . . Perhaps the only attribute on which the Premier fell short was its taste. The result was a marketing disaster, and the new product was withdrawn from the market.

The Premier provided an *almost perfectly controlled experiment*. . . . Surely if cigarette purchases were driven by "addiction" alone, this product would have dominated the market. It seems clear that some fundamental taste on the part of consumers for the smoking experience is at play.²⁰⁶

At first blush, the evidence from the "perfectly controlled experiment" seems compelling. The failure of the Premier seems to prove that the *taste* of cigarettes, and not addiction, is the primary reason for smoking. Under closer scrutiny, however, the experiment appears less than perfect. Even assuming that the Premier experiment unfolded exactly as Viscusi describes, it would prove little with respect to the addiction models we discussed above. Those models, recall, depend not so much on nicotine-based addiction, but on, among other things, the fact that the *good taste* is delivered with each cigarette while the ill-health effects are incurred much later—or, if the smoker quits in time, possibly never.²⁰⁷ To treat the Premier as a test of, for example, Schelling's model is to misunderstand that model.²⁰⁸ If the Premier tasted bad, then it would not be a viable cigarette "substitute" within Schelling's conception. If each puff is unpleasant, none of a person's "selves" would have any interest.

The Premier experiment nevertheless may indicate that consumers do not smoke solely because of chemical addiction.²⁰⁹ In numerous ways, however, the experiment was far from "perfectly controlled"; it was badly flawed. First, it is questionable whether the Premier's purported health advances were

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206. Viscusi, *supra* note 205, at 372 (emphasis added).

207. See *supra* notes 155-157 and accompanying text. The path dependence model does depend in part on nicotine-based addiction. Specifically, because consumers underestimate the costs of quitting (that is, the addictiveness of nicotine) when initiating their smoking habits, their choice to begin or continue smoking may not be a welfare-enhancing choice.

208. In a 1993 article, Viscusi described the Premier experiment to help sort out questions Schelling raised about smoking behavior. Viscusi's framing of questions, however, suggests that he mistakenly takes Schelling as explaining smoking as the consequence of chemical addiction to nicotine: "Is the authentic self the smoker or the person who claims to want to be a nonsmoker? What does it mean when individuals express a desire to quit smoking? Are they *physically dependent on nicotine*, or is it the act of smoking that they cannot quit?" Viscusi, *supra* note 205, at 372 (emphasis added). Limiting himself to those dichotomous alternatives, Viscusi ultimately concludes that, for reasons we examine and criticize in this subsection, "there is at least some evidence that cigarette smoking is an action of one's authentic self." *Id.* at 373-74.

209. This assumes, contrary to our arguments above, that smokers are in fact well informed of the health risks that they face and would have been willing to trade seemingly trivial taste concerns to reduce health risks while still getting their nicotine fixes.

substantial²¹⁰ or whether the new cigarettes were *perceived* by consumers as substantially safer.²¹¹ In addition, a host of nonhealth differences between the

210. As compared to traditional cigarettes, the Premier contained fewer of what RJR called "controversial compounds" like tar. John Helyar, *RJR Plans To Market Smokeless Cigarette as Breakthrough with Hefty Price Tag*, WALL ST. J., Aug. 30, 1988, at 25 [hereinafter Helyar, *RJR Plans*]. It was to produce no ash, less sidestream smoke, and less nicotine than 97% of the brands on the market. *See id.* The number of chemical compounds was not eliminated, but reduced by 82% to 96% compared to low-tar cigarettes. *See* John Helyar, *Scientists Give the Smokeless Cigarette Good Reviews in Preface to RJR Report*, WALL ST. J., Sept. 8, 1988, at 36. More specifically, RJR's 744-page scientific compendium stated that there were 6.0 mg of tar per cigarette compared to 8.2 to 12.0 mg for leading low-tar brands. *See Firm Introduces the 'Clean' Cigarette*, ST. PETERSBURG TIMES, Sept. 26, 1988, at D3. As a consequence of these sorts of changes, the Premier was expected to be less offensive to nonsmokers, *see* Betsy Morris & Alix M. Freedman, *'Smokeless' Cigarette Is Expected To Pose Big Marketing Challenge*, WALL ST. J., Sept. 18, 1988, at 39; Betsy Morris & Peter Waldman, *The Death of Premier*, WALL ST. J., Mar. 10, 1989, at B1; Peter Waldman & Betsy Morris, *RJR Nabisco Abandons 'Smokeless' Cigarette*, WALL ST. J., Mar. 1, 1989, at B1, to ease "the social pressure and guilt many smokers suffer," Morris & Freedman, *supra*, and to appeal particularly to women, *see* Morris & Waldman, *supra*.

The continued presence of nicotine suggests that the Premier was not substantially safer. Although tar is believed to elevate the risk of cancer in smokers, nicotine is believed to create higher risk of heart disease and is suspected to play a role in the metastatic spread of cancer. *See* Howard Wolinsky, *Pseudo-Cigarettes Still Have Toxins*, CHI. SUN-TIMES, Sept. 20, 1987, at 14. Further, reduced nicotine levels, researchers suggested, would not necessarily reduce the level of nicotine-based risk as compared to conventional cigarettes. In RJR's studies, test rats exposed to smoke from the Premier were reported to have twice the level of nicotine in their blood as test rats exposed to regular cigarettes. *See Firm Introduces the 'Clean' Cigarette*, *supra*. Moreover, RJR's claim that it reduced the nicotine level in Premier below that of 97% of the brands on the market casts doubt on the status of the Premier as an adequate "substitute." *See* Helyar, *RJR Plans*, *supra*.

211. RJR did not promote the Premier as a "healthier" cigarette because of the uncertainty regarding its health effects and because such advertisements might have implicitly indicted other tobacco products and invited FDA regulation. *See* Don Colburn, *'Cleaner,' But Is It Safer? R.J. Reynolds Touts a New High-Tech Cigarette—Very Carefully*, WASH. POST, Sept. 6, 1988, at Z6. Instead, RJR suggested only that the Premier was "cleaner," hoping that the consumer would read between the lines. *See Firm Introduces the 'Clean' Cigarette*, *supra* note 210. Health claims made by RJR would also have done little to distinguish the Premier from conventional cigarettes, given that cigarette manufacturers had long denied that conventional cigarettes have any significant ill-health consequences. *See supra* note 26, *cf. supra* notes 99-101 and accompanying text (arguing that if consumers do not have brand-specific information, manufacturers will have reduced incentives to market relatively safe cigarettes).

In addition, regulators, health groups, and consumer groups did not treat Premier cigarettes as riskless. Potential FDA regulation of the Premier as a drug, *see FDA Warns R.J. Reynolds That Smokeless Cigarettes Could Be Classified a Drug*, ORANGE COUNTY REG. (Cal.), Sept. 3, 1988, at A8, and its ongoing review until the Premier was withdrawn from the market in February 1989 could have hindered the new cigarette's acceptance by customers. The hostile response of health groups and antismoking groups similarly doused the chances that consumers might consider it safer. *See Firm Introduces the 'Clean' Cigarette*, *supra* note 210. These groups joined the Surgeon General in labeling the Premier a "drug-delivery system" and in raising a range of criticisms. *New 'Cigarette' Really a Drug, Koop Claims*, L.A. TIMES, Oct. 21, 1988, at 2; *see also* *Smokeless Cigarette Announcement Reportedly Set for Monday*, AP, Sept. 13, 1987, available in 1987 WL 3174997 ("We don't know what else is going to be given off. Once you put plastics in there you have to be concerned about the compounds in the plastics" (quoting a research scientist at the Georgia Institute of Technology)); Scott Ticer & Reginald Rhein Jr., *The Burning Question at RJR: Now What?*, BUS. WK., Sept. 28, 1987, at 28 ("[I]t's merely a newfangled drug-delivery system for nicotine"); Michael Waldholz & John Helyar, *FDA Feels Heat on Smokeless Cigarette*, WALL ST. J., Oct. 21, 1988, at B1 (reporting that the Premier is seen as easily adaptable for the use of crack cocaine).

Regardless of its veracity, the Premier's bad press likely influenced consumers' subjective perceptions of risk, which are what count in consumer decisions. *Cf. Viscusi*, *supra* note 49, at 5 (explaining that "the effect of these risk perceptions on their decisions . . . is the main matter of interest"); Joni Hersch & W. Kip Viscusi, *Cigarette Smoking, Seatbelt Use, and Differences in Wage-Risk Trade-Offs*, 25 J. HUM. RES. 202, 226 (1990) (explaining that "individuals' subjective perceptions of the riskiness of their job . . . is the relevant factor governing individual decisions regarding potentially hazardous jobs"). In a claim that appears to be in tension with his suggestion that Premier provided a "perfectly controlled experiment," Viscusi

Premier and traditional cigarettes undermines the view that the experimental cigarettes were a viable substitute. The Premier's taste was not merely a "drawback," as Viscusi would have it, but a fundamental flaw. According to test marketers, the Premier "smell[ed] like burning garbage,"²¹² and "taste[d] like shit."²¹³ Furthermore, contrary to Viscusi's reckoning, the Premier did not retain the "look and feel" of conventional cigarettes. "Smoking is a complex psychological, emotional and mechanical process, 'a total activity'. . . . 'Smokers like taking out the cigarette, tapping it, playing with it, blowing smoke.'"²¹⁴ With the Premier, there was no ash and therefore no flicking.²¹⁵ For many smokers, "[t]he smoke itself is part of the satisfaction," and many were not eager to become mere "puffers."²¹⁶ More generally, smokers found the Premier cigarettes to be difficult and unpleasant to consume.²¹⁷ Finally, beyond these issues of "look and feel," Premier

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suggests that the government's regulatory interference with the marketing of Premier cigarettes was largely, if not entirely, to blame for the failure of that and other potentially safer cigarette substitutes. See VISCUSI, *supra* note 49, at 147-48 (concluding that "government policies now in place actively discourage safety innovations in cigarettes.").

212. Melissa Turner, *The 'Cleaner' Cigarette Will Make Its Premiere*, ATLANTA J.-CONST., Aug. 31, 1988, at C1.

213. BRYAN BURROUGH & JOHN HELYAR, *BARBARIANS AT THE GATE: THE FALL OF RJR NABISCO* 112 (1990); see also Bradley Johnson, *Cigarette May Fuel Heated Debate*, GREENSBORO NEWS & REC. (N.C.), Sept. 5, 1988, at C8 (reporting that the Premier tasted like "singd hair"); Douglas C. McGill, *Consumers Give 'Smokeless' Cigarette Unfavorable Reviews*, ST. PETERSBURG TIMES, Nov. 19, 1988, at A4 ("It tastes like burning plastic."); John Riley, *Smoker Carries a Torch; Aficionado Reflects on 'Weird,' New Smokeless Cigarettes*, NEWSDAY (N.Y.), Sept. 7, 1988, at 2 (stating that Premier cigarettes were at first fine, but then "harsh in the mouth and sickening in the nose" and "gave me headaches."); *Smokeless Cigarette Gets Varied Marks in Informal Taste Test*, AP, Sept. 4, 1988, available in 1988 WL 3808039 (stating that the Premier smelled "like a tennis shoe burning"). RJR was not entirely surprised by the reviews. Indeed, its own ambition was apparently not to attract currently satisfied smokers to switch to Premier cigarettes. According to an RJR executive responsible for the Premier's initial development, the firm "hoped [the cigarette] would keep smokers from quitting and draw ex-smokers back to Reynolds." BURROUGH & HELYAR, *supra*, at 74. That RJR did not target Premier for consumption by currently satisfied smokers may further impeach the claim that it was a "substitute" for other cigarettes.

214. Morris & Freedman, *supra* note 210 (quoting Leo Shapiro, a Chicago-based marketing consultant).

215. See Johnson, *supra* note 213.

216. *Smokeless Cigarette Announcement Reportedly Set for Monday*, *supra* note 211 (quoting Dave Brenton, head of the Smoker's Rights Alliance).

217. A host of practical complications made the Premier potentially unappealing. To begin with, Premier did not mix well with matches or even cheap lighters, which only exacerbated the cigarette's bad taste and smell. See BURROUGH & HELYAR, *supra* note 213, at 112. RJR's own CEO at the time, Ross Johnson, was quoted as saying that when lit with a match, the Premier smelled "like a fart." *Id.* Even with a quality lighter, Premier cigarettes took longer than normal to light, and an inadequate lighting caused the smoker to experience what became known as the "hernia effect," the need to overexert on the inhale because the cigarette was not lit properly. See Morris & Waldman, *supra* note 210. To overcome those problems, RJR provided consumers with four pages of directions on how to smoke the Premier. Each cigarette was good for around 10 to 12 solid drags before the heat source ran out, but who was counting? Disposal of spent cigarettes also proved a problem, which RJR endeavored to solve by including with each pack a plastic case to carry unpleasant cigarette carcasses, but that solution, according to one investigator, had a negative psychological effect because it reminded the smoker of a junkie's discarded hypodermic needles. See Riley, *supra* note 213.

cigarettes were priced 15% to 20% higher than conventional cigarettes—"at a time when discount brands [were] taking off."²¹⁸

In light of this history, it seems doubtful that the "marketing disaster" provides any evidence that cigarettes are not addictive. If anything, the Premier experiment and other efforts to provide a viable cigarette substitute provide some evidence of the addictiveness of nicotine. In each of these cases, the manufacturer has chosen to leave nicotine in its product, despite an ability to remove the substance and despite knowledge of the hazards it poses.²¹⁹

ii. *Evidence of Rational Decisionmaking*

Viscusi offers a second type of argument to suggest that "smoking behavior follows patterns similar to that of other types of consumption goods,"²²⁰ or, in other words, that cigarettes are not addictive. For instance, Viscusi emphasizes that the elasticity of consumer demand with respect to both cigarette price and consumer income is "not entirely dissimilar" to those of other products.²²¹ Specifically, Viscusi summarizes forty-one studies that were "able to generate estimates that indicated a negative elasticity of demand

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218. Ticer & Rhein, *supra* note 211. It is worth noting finally that, although consumers had plenty of good reasons not to switch to Premier cigarettes, it was ultimately RJR's decision to pull the product from the market after only a very brief trial. A number of internal corporate issues may help to explain the "marketing disaster," including uncertainty, disagreement as to RJR's true motives and the Premier's chances of success, concerns over the readiness of the product for market, and corporate maneuvering relating to the leveraged buyout of RJR. See BURROUGH & HELYAR, *supra* note 213, at 111-12, 119-22; Bradley Johnson, *Up in Smoke*, GREENSBORO NEWS & REC (N.C.), Mar. 13, 1989, at 8; Morris & Waldman, *supra* note 210.

219. A sworn statement given to the FDA in March of 1996 by Dr. Ian Uydess, a former associate scientist for Philip Morris, is enlightening on this point:

Tobacco companies like Philip Morris learned a long time ago that it was hard to get people to stay with a good tasting product if the nicotine level was too low. It is fairly safe to say that while taste is a very important component of a smoker's experience ("satisfaction") with a cigarette, that good taste alone does not sustain a market. Philip Morris clearly understood this relationship between nicotine level and product acceptability (e.g., that they could develop a market for a medium to high nicotine product that had marginal taste, but that they would have trouble sustaining the sales of a good-tasting product that was too low in nicotine).

Declaration of Ian L. Uydess, Ph.D. to the Food and Drug Administration, 112 Tobacco Prods. Litig. Rep. (TPLR) 8.1, 8.6 (1996); see also *Internal Memos Show RJ Reynolds Tobacco Company Targeted Underage Smokers and Viewed Nicotine as a Drug*, 10.6 Tobacco Prods. Litig. Rep. 1157, 1157 (1995) [hereinafter *Internal Memos*] ("Happily for the tobacco industry, nicotine is both habituating and unique in its variety of physiological actions." (quoting an internal RJR memo)) Smokers choose brands according to their "individual nicotine dosage requirements and secondarily by a variety of other considerations, including flavor." *Internal Memos*, *supra*, at 1.157; see also *supra* note 144 (describing what the tobacco industry has known about the addictiveness of cigarettes and how the industry may have manipulated that addictiveness). In short, the fact that taste may play a role in people's choices among cigarette brands does not—even the industry seems to recognize—indicate that cigarettes are not addictive. This sort of evidence led FDA regulators to suspect that nicotine had been manipulated for its addictive effect, prompting the FDA to enter the "tobacco wars." See HILTS, *supra* note 12, at 102-12.

220. Viscusi, *supra* note 102, at 66.

221. VISCUSI, *supra* note 49, at 101; see also Viscusi, *supra* note 102, at 52, 66 (substituting the phrase "similar to").

for cigarettes" ranging from -0.4 to -1.4.²²² The latter extreme was an estimate of the price elasticity for teenagers, "who appear to be most sensitive to the price."²²³ Viscusi finds "striking[]" that *all* the studies would provide evidence that "as the price of cigarettes declines, consumers increase their demand for the product" and that "price increases for cigarettes will reduce consumer demand."²²⁴ He concludes that such evidence "implies that smoking decisions satisfy a basic but fairly undemanding test of rationality."²²⁵

Viscusi also makes a closely related observation that "the character of individual risk perceptions" also affects a consumer's smoking propensity.²²⁶ "Higher assessed smoking risk probabilities decrease the probability that an individual will smoke."²²⁷ For instance, "smokers assess the lung cancer risk as being .37, which is .06 lower than the societal perception of .43."²²⁸ This finding is "also consistent with rational decision making."²²⁹ This is true because rational actors would treat perceived increases in risk as tantamount to price increases.²³⁰

Still more evidence of rational decisionmaking can be found in smokers' selection of cigarettes. Although a majority of all smokers in the survey expressed concern about the health risks of smoking, a disproportionate percentage of those who expressed such concern smoke putatively healthier "low-tar" cigarettes.²³¹ Thus, risk perceptions seem to have a predictable effect on decisionmaking *among* smokers, just as they do *between* smokers and nonsmokers.²³²

According to Viscusi, "The character of the tradeoffs that smokers make in other contexts," such as in the workplace, is "consistent with risk-taking decisions in the smoking domain."²³³ Nonsmokers require more compensation to bear job-related risks of serious injury.²³⁴ This is probably

222. VISCUSI, *supra* note 49, at 106-07.

223. *Id.* at 106.

224. *Id.*

225. *Id.* He also points out that the evidence "highlights the potential role of taxes as a policy instrument for influencing cigarette smoking behavior." *Id.*

226. *Id.* at 110; *see also* Viscusi, *supra* note 102, at 67.

227. Viscusi, *supra* note 102, at 67; *see also* VISCUSI, *supra* note 49, at 110.

228. VISCUSI, *supra* note 49, at 110.

229. Viscusi, *supra* note 102, at 67.

230. It is noteworthy that Viscusi's own findings suggest that risk perceptions are not especially influential in a person's decision to smoke. *See, e.g.*, VISCUSI, *supra* note 49, at 110 (explaining that differences in risk assessments should help explain consumption choices and then conceding that differences in smoker and nonsmoker risk perceptions were "not stark"); *id.* at 114 (describing the "disparity in the perceptions of smokers and nonsmokers" as "minor").

231. *See* Viscusi, *supra* note 102, at 67.

232. *But cf. supra* notes 104-105 and accompanying text (describing how "light" cigarettes may be deceptively dangerous).

233. Viscusi, *supra* note 102, at 66.

234. *See* VISCUSI, *supra* note 49, at 110-115, 143; Viscusi, *supra* note 102, at 66-67; Viscusi, *supra* note 205, at 373.

the most important evidence, in his view, because it indicates "that smokers differ systematically from non-smokers in terms of their valuation of the health effects of smoking."²³⁵

Based on this evidence that the decision to smoke is responsive to price and risk perceptions and that smokers appear more willing to take risks than nonsmokers, Viscusi suggests that the purchase of cigarettes is indistinguishable from the purchase of "automobiles . . . or books."²³⁶ Put differently, "there is at least some evidence that cigarette smoking is an action of one's authentic self."²³⁷ This evidence, however, is perfectly consistent with the addictive models that we described above.²³⁸ The general message of those models is that some consumers who now smoke might not if the risks and benefits were presented to them simultaneously in an aggregated fashion at the moment of decision. Indeed, those models would predict that price increases and risk perceptions *would* influence aggregate smoking patterns.

To be clear, it may be helpful to describe in slightly more detail Thomas Schelling's multiple selves model, which Viscusi's arguments seem specifically intended to refute.²³⁹ In Schelling's view, self-management is equivalent to the management of someone else—"someone in a close relation, with a paternalist or senior-junior quality like that between parent and child."²⁴⁰ Sticking with Schelling's parent-and-child analogy, one would predict that, other things being equal, the greater the perceived price or risk facing a child's decision, the more control a parent would seek to exert. Moreover, a great deal of Schelling's discussion of how individuals manage the contest for self-control, as well as how the law might assist them, involves altering the "prices" and the perceived risks associated with smoking.²⁴¹ Indeed, that effect is what leads some consumers to try to trick themselves into overestimating the risks of their choice—not unlike the common and more observable habit of setting one's watch a few minutes fast.²⁴² The same point

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235. VISCUSI, *supra* note 49, at 112.

236. *Id.* at 109.

237. Viscusi, *supra* note 205, at 373-74. Viscusi concedes that many smokers surveyed expressed a desire to quit, but states that "the full implications of the survey responses are not clear" *Id.* at 374

238. See *supra* Subsections II.B.4.b-d.

239. See *supra* note 205 and accompanying text

240. SCHELLING, *supra* note 183, at 63.

241. Thus, Schelling is unsurprised by the fact that when the Surgeon General went public with findings about the risks of cigarettes, smoking decreased. See *id.* at 82

242. See *id.* at 78-80. One might explain Viscusi's findings in just these terms. That is, consumers may attempt to trick themselves into believing that cigarettes are extremely dangerous as a means of maintaining some self-control. If that were true, then Viscusi's evidence could be understood as the symptom, not the absence, of a problem.

Schelling does, from time to time, emphasize that his conception of the individual is different from the rational actor conception. He writes, for instance, that "the ordinary human being is sometimes not a single rational individual . . . [but] more like a small collectivity" *Id.* at 93. Consequently, "individuals may not make decisions in accordance with the postulates of rationality" *Id.* A person's choices may fail to "display the qualities typically imputed to rational decision, like transitivity, irrelevance of 'irrelevant' alternatives, and short-run stability over time." *Id.* at 94. But, again, Schelling does not mean to suggest that price or risk perceptions will not influence consumers' conduct in predictable ways. Those variables

can be made with respect to George Ainslie's time-discounting model.²⁴³ That model also predicts that price increases and perceived risk increases would lead to decreases in consumption levels. To be sure, the more immediate the increase, the more dramatic will be the response, but at the margin, average consumption levels will always be inversely related to price and risk perceptions: When consumers face a higher price or perceive an increase in the risks of cigarettes, they will, other things being equal, smoke less (or switch to a brand that they perceive to be less risky).

Viscusi's evidence is also consistent with the path dependence model of addiction. In terms of the decision to smoke, the point of the metaphor was not that smokers would fail to alter their smoking behavior in the face of new costs. Instead, it was that some smokers would continue to smoke only because earlier decisions raised the costs of quitting. In the aggregate, however, if price or perceived risk levels of smoking were to increase, the model would predict that more smokers would quit.

In addition to the evidence that smokers respond to price variations in cigarettes, Viscusi presents findings that smokers are, other things being equal, less likely to wear seat belts and more willing to accept job risks than nonsmokers.²⁴⁴ These findings, he suggests, support the conclusion that smokers are less risk averse than nonsmokers, a conclusion that is consistent with the rational smoker model. These findings, however, are also consistent with the addiction models that we have considered. The possibility of varying tastes across consumers is not unique to Viscusi's rational actor model. Tastes could just as easily vary across consumers under our addiction models, with similar effect. Consumers who are especially sensitive or insensitive to risk in one context will likely be the same in other contexts.²⁴⁵ For example, returning to Schelling's parent-child metaphor, if the parent self is especially

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will influence which of the multiple selves wins the contest. The self who wants to stop smoking gains some advantage in the contest for control, other things being equal, when cigarette prices increase. The type of "irrational" behavior that Schelling has in mind is that of the individual who in one moment is cursing and forswearing cigarettes as he crumbles a pack in his hand and, in the next moment, is lighting the bent and busted remains of one of those cigarettes. *See id.*

243. *See* Ainslie, *supra* note 176, at 471, 492-93. Schelling also describes the person whose multiple selves differ along "the dimension of time preference—of the discount rate to compare present with future, near future with far future, imminent with remote, or permanent with transient. The idea is that the person who . . . lights that cigarette . . . is merely discounting the future with a high interest rate." SCHELLING, *supra* note 183, at 62.

244. *See* VISCUSI, *supra* note 49, at 113-14.

245. It may be worth emphasizing in this regard that social scientists have long recognized that personal or behavioral characteristics likely play a significant role in the smoking habits of individuals. The Surgeon General's 1989 report summarized that evidence as follows: "Studies have linked initiation of smoking with rule breaking in school, general delinquency, age at first intercourse, inadequate contraceptive use, low levels of child compliance within the family, low levels of responsibility, nonconventionality, impulsivity, rebelliousness, and previous use of alcohol and other substances." SURGEON GENERAL'S PROGRESS REPORT, *supra* note 3, at 336 (citations omitted). Such correlations are analogous to those observed "with other drug addictions," *id.*, and as such do not imply that cigarettes are not addictive.

lax in controlling the child self with respect to one type of risk, then it seems likely that the parent self would be lax with regard to all types of risk.

There may be another problem with Viscusi's evidence—a problem of interpretation. In his view, the evidence “is consistent with differences in individual tastes driving choices in a rational economic manner.”²⁴⁶ In an earlier article (with Joni Hersch), however, Viscusi seems to identify two other viable explanations for the evidence, neither of which suggests that smokers smoke simply because they value their lives less than nonsmokers, as measured by job-risk premiums. One “hypothesis that generates similar patterns of influences is that cigarette smoking and seatbelt use serve[] as proxies for the production of safety.”²⁴⁷ Alternatively, Hersch and Viscusi concede, the evidence is consistent with systematic differences across individuals in estimations of the *magnitude* of the health loss: “If individuals underestimate the severity of all adverse health risks from jobs, cigarettes, or automobiles, they will be more likely to engage in all of these forms of risky behavior.”²⁴⁸ Though Viscusi once recognized these other potential explanations for his evidence, he does not, so far as we can determine, consider them in his work on smoking policy.

Moreover, there is another viable interpretation of the evidence that Viscusi seems nowhere to consider. Contrary to Viscusi's implicit assumption, for instance, tastes may not be completely exogenous—that is, fixed and uninfluenced by consumer's smoking decisions and other risky decisions. Instead, a consumer's decision to encounter one risk may well influence the consumer's willingness to encounter another. Accepting for the sake of argument that smokers believe they face a substantial risk of illness, disability, or premature death from smoking, it seems plausible that smokers will have less distaste for other types of health risks than will nonsmokers. The greater the chance that a person will grow ill or die prematurely from one type of risk, the less willing that person should be to invest in avoiding illness or death

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246. VISCUSI, *supra* note 49, at 113.

247. Hersch & Viscusi, *supra* note 211, at 225; *see also id.* at 205 (explaining the intuition behind the hypothesis). A similar partial explanation that Hersch and Viscusi do not consider is that smokers may be less productive or more costly (or perceived as less productive or more costly) on the job, other things being equal, than nonsmokers. For instance, smokers probably take more breaks than do their nonsmoking counterparts, for obvious reasons. For summaries of a number of studies that have purported to find that smokers are less productive or more costly to employ, *see* David B. Ezra, “Get Off Your Butts” *The Employer's Right To Regulate Employee Smoking*, 60 TENN. L. REV. 905, 910-16 (1993), and Jimmy Goh, “Smokers Need Not Apply”: Challenging Employment Discrimination Against Smokers Under the Americans with Disabilities Act, 39 U. KAN. L. REV. 817, 823 (1991). *See also infra* note 278 (describing the potential savings in health insurance costs to employers who institute smoking bans in the workplace). Some scholars, however, have challenged the evidence that smokers are less productive than nonsmokers. *See, e.g.,* Alfred Vogel, *Are Smokers Really Less Productive Than Nonsmokers?*, LEGIS. POL'Y, Summer 1985, at 6.

248. Hersch & Viscusi, *supra* note 211, at 205. The evidence is inconsistent, however, with the hypothesis that “health-related activities capture differences in risk perceptions.” *Id.* (emphasis added)

from another type of risk, other things being equal.²⁴⁹ To the extent that consumers' risky decisions affect their other risky decisions as we have described, it no longer follows that "it is largely . . . differences in taste that drive the differences in smoking decisions."²⁵⁰

In sum, it seems that none of the evidence Viscusi highlights rules out the possibility that consumers are addicted to cigarettes, at least as we have defined "addiction." Perhaps the only model of addiction that Viscusi's evidence contradicts is the model that assumes that "addicted" smokers are simply incapable of not smoking at some fixed rate, no matter the price and no matter the risk. Indeed, it appears that Viscusi has that model in mind. For example, in a very recent article, he explains that he is responding to those "observers [who] have hypothesized that even if people understand the risk of smoking, they may . . . be addicted to smoking and *unable to alter their behavior*."²⁵¹ His definition of the stylized smoker model—which he describes as the "main characterization of smokers underlying the smoking debate"—also seems to include that extreme notion of addiction.²⁵² We are doubtful that such an extreme position is as common as he suggests.²⁵³ Similarly, we have nowhere encountered a claim that smokers, in the aggregate, will not lower their smoking rates in response to price increases and we do not believe that anyone holds such a view.²⁵⁴

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249. The basic intuition underlying our point here has an analogue in the cynical bumper sticker that reads, "Eat Well, Exercise, and Get Hit by a Truck," and is related to the argument above regarding imperfect relative-risk information. See *supra* Subsection II.B.3.

250. VISCUSI, *supra* note 49, at 114. Finally, we are suspicious about the study results in light of the absolute wage-compensation amounts that Hersch and Viscusi found. It seems to us implausible that a sample of blue collar employees of three manufacturing firms (a wholesale warehouse, a laundry, and a gardening firm), would implicitly value an injury that caused a worker to miss *one workday* at \$83,217.39—even if the worker is a nonsmoker and a non-seatbelt-user. The point is even more clear when one takes into account that the "compensating differentials may be biased downward" by at least \$12,608.70. Hersch & Viscusi, *supra* note 211, at 221. Again, it seems odd that workers would demand what is likely to be well over one year's salary as implicit compensation for the risk of an injury leading to the loss of one day of work. These results suggest that something is wrong with the methodology of the study or with the rationality of the subjects studied. Hersch and Viscusi do not, as far as we can tell, address this issue.

251. Viscusi, *supra* note 102, at 66 (emphasis added); see also VISCUSI, *supra* note 49, at 5, 18, 101.

252. VISCUSI, *supra* note 49, at 5; see also *id.* at 18 (stating that "if they are cognizant of the hazards, they ignore these risks in making their decisions"); *id.* at 21 ("Only the immediate gratification provided by cigarettes drives consumer behavior").

253. Indeed, Schelling, the only scholar whom Viscusi mentions by name, devotes considerable attention to understanding the mechanisms that individuals commonly employ to help with the battle of self-control. Implicit in Schelling's discussion is the notion that different consumers will have different amounts of self-control. See T.C. Schelling, *Self-Command: A New Discipline*, in CHOICE OVER TIME 167 (George Loewenstein & Jon Elster eds., 1992) (noting that people vary in their ability to stop using cocaine or cigarettes, to get out of bed at a chosen time, and to do many other things that they know they should do).

254. After cursorily surveying 41 studies of price elasticity, Viscusi concludes that "most of the demand elasticities are clustered in the range from [-0.4 to -1.0]," implying that a 10% increase in price would reduce consumption by 4% to 10%. VISCUSI, *supra* note 49, at 105. His argument seems to be that if cigarettes were truly addictive then price increases would have little or no effect on overall consumption rates.

We have a variety of responses. First, it is not clear that any plausible model of addiction could lead to the conclusion that addicted consumers will be wholly price insensitive. As Gary Becker demonstrated in a classic article, "[N]egatively inclined market demand curves result not so much from rational behavior per se as from a general principle which includes a wide class of irrational behavior as well." Gary S. Becker, *Irrational Behavior and Economic Theory*, 70 J. POL. ECON. 1, 4 (1962). It is thus unclear why Viscusi stresses that the "most striking[]" insight from his survey of studies may be that all the studies indicate downward-sloping demand or why he asserts that "[t]he price responsiveness of cigarette demand implies that smoking decisions satisfy a basic but fairly undemanding test of rationality." VISCUSI, *supra* note 49, at 106.

Still, Viscusi's bigger point may be simply that addiction implies that demand curves would be extraordinarily steep. *See id.* at 101. The claim that cigarettes are addictive, however, does not necessarily lead to such a prediction. Instead it may suggest only that demand for cigarettes will be less price elastic among current smokers than it would be were cigarettes stripped of their addictive features (e.g., nicotine). But even if Viscusi were correct, we believe the evidence is quite consistent with Viscusi's notion of "addiction."

To see why, it is necessary initially to point out that, as far as we can tell, Viscusi inappropriately truncates the lower end of the price-elasticity estimates that he surveys. From what we can observe, it is more accurate to state that the estimates cluster between a range of -0.2 and -1.0. *See id.* at 102-05 tbl. 5-6 (summarizing the studies). Indeed, it appears to us that roughly one-third of the studies that Viscusi summarizes include estimates of less than -0.4. *See id.*

Another problem with Viscusi's interpretation is that it seems to assume that all smokers are equally addicted to cigarettes. Elasticity studies, however, typically measure average responses to price changes. It may well be that for a sizable percentage of smokers, price plays little role in the decisions of whether and how much to smoke. If enough smokers are highly price sensitive, however, their price reactions will dilute some of the price insensitivity of other smokers, when the quantity reactions to price increases are averaged. In other words, averaging may understate the significant problem that many people have in quitting. To get some sense of the variance of price elasticities, it might be illuminating to divide the market into different groups. Long-term smokers, one might predict, are likely to be more addicted and thus to evince much less responsiveness to price than the average smoker and, especially, the short-term smoker. Evidence that young people have the most elastic demand seems to confirm this claim. *See, e.g., id.* at 104 tbl. 5-6 (summarizing an elasticity study of children ages 12 to 17 that estimated a price elasticity of -1.4, which made children by far the most price-sensitive group in all of the studies surveyed).

It is important to note as well that changes in sales will reflect several variables, including how many nonsmokers do not begin smoking because of price increases. The decision not to become a smoker is, obviously, unaffected by the addictive quality of cigarettes, because those who are not yet smokers cannot be addicted. Consequently, the price elasticities that Viscusi summarizes may overstate the ease of quitting (or understate the addictiveness of smoking), given that they also reflect the decisions of nonsmokers to remain nonsmokers.

In light of these criticisms, it is illuminating to look closely at the real-world significance of Viscusi's elasticity figures. What are the implications of his findings on, say, a typical long-term smoker who smokes two packs (40 cigarettes) per day? Suppose that the price increases by \$0.20 per pack (representing a 10% increase over the current pack price of approximately \$2.00). Our smoker, who smokes 730 packs (or 14,600 cigarettes) per year, would have to shell out an additional \$146.00 per year to maintain current levels of consumption. According to the elasticity studies that Viscusi surveys, however, consumption levels will, on average, likely be reduced by between 2% and 10%. Suppose that our smoker will respond to the price increase as an average smoker would. Under the low 2% estimate, the price increase will lead to a decrease of fewer than 15 packs per year to a total of 715 packs (which is equivalent to 14,300 cigarettes per year or 39.17 cigarettes per day—a decline of less than one cigarette per day). Under the 10% estimate, the total number of cigarettes consumed per year will drop to 657 packs (13,140 individual cigarettes or 36 cigarettes per day). Either way there is plenty of smoking.

Still more can be said about price effects on smoking habits. Assume that only half of the overall reduction in consumption will be on the part of those smokers who continue to smoke. And suppose that the other half of the total reduction will be made up of those smokers who quit and those nonsmokers who choose not to start. Assume, finally, that quitting and not starting occur in roughly equal measure, so that each is responsible for about one quarter of the overall elasticity response. Under those assumptions, the lower and upper benchmarks would be closer: The elasticity would be between -0.15 and -0.75, which would imply an expected reduction from 40 cigarettes to between 39.4 and 37 cigarettes per day. Moreover, those who did not quit would decrease their smoking levels by significantly less than that in light of the fact that one quarter of the total effect is, by assumption, the consequence of smokers who quit smoking altogether.

Given that Viscusi's evidence refutes, at most, the straw man model that assumes all consumers completely ignore risk and price information, it is not clear why Viscusi believes his evidence regarding the *aggregate* effect of information has any relevance to the underlying question. Viscusi himself stresses that "[e]ven addictive drugs, such as heroin, exhibit price responsiveness so that the existence of some price elasticity does not rule out all addictive properties."²⁵⁵ Ultimately, therefore, the evidence that Viscusi offers to demonstrate that the decision to smoke is like the decision to purchase other consumer goods fails to demonstrate why that decision is not equally analogous to the decision to inject heroin. The evidence does not help answer the question that motivated it.²⁵⁶

This discussion should help to put Viscusi's elasticity figures into perspective. The price sensitivity of smokers, particularly long-term smokers, is likely more consistent with even Viscusi's extreme addiction model than Viscusi gives it credit for being. In any event, other economists who have looked at such evidence have indicated that, contrary to Viscusi's conclusion, demand for cigarettes is unusually inelastic and entirely consistent with medical evidence that cigarettes are addictive. For example, although Manning et al. concede that "[e]stimates of the price elasticity of demand for cigarettes vary enormously from study to study," MANNING ET AL., *supra* note 49, at 170, they also indicate that cigarettes are especially price inelastic when they explain that "cigarette taxes cause relatively less distortion and tax evasion behavior than other taxes," *id.* at 24. Moreover, they make the following observation with respect to *income* elasticities: "Apparently the demand for cigarettes is income inelastic, with the estimates ranging from a low of -0.002 to a high of 0.93. This suggests that cigarettes may in fact be considered a necessity (at least among smokers), probably because of the addictive nature of smoking." *Id.* at 171. Another group of economists recently summarized the price-elasticity evidence as follows: "Cigarettes are widely regarded as having a relatively low elasticity of demand, with a consensus estimate in the vicinity of -0.4 in many of the major industrialised nations." Warner et al., *supra* note 28, at 381; *see also* Craig Howell et al., *Pricing Practices for Tobacco Products, 1980-94*, MONTHLY LAB. REV., Dec. 1994, at 3, 10 (noting the "generally low responsiveness of consumer demand for cigarettes to price changes, at least in the short run"); Jeffrey E. Harris, *What Can the Cigarette Industry Afford? Structuring a Long-Term Settlement* (visited July 28, 1997) <<http://web.mit.edu/jeffrey/harris/afford.html>> ("Economists generally regard the demand for cigarettes as not very sensitive to price."). It is fair to say that although other economists recognize that there is a range of estimates, they also view the evidence as indicating that demand for cigarettes is relatively price inelastic and as entirely consistent with medical evidence that cigarettes are addictive.

255. VISCUSI, *supra* note 49, at 101.

256. *Cf.* Croley & Hanson, *A Defense of Pain-and-Suffering Damages*, *supra* note 40 (making a similar critique).

A third and final way in which Viscusi attempts to demonstrate that cigarettes are no different from "almost all economic commodities" is by pointing to the numerous ways in which the term "addiction" has been overused:

In recent years the addiction label has been liberally applied to a variety of behavioral phenomena. Most residents of Los Angeles claim to want to move out of the city but do not.

Similarly, millions of workers profess a desire to leave their jobs, but they do not quit. Self-help psychology paperbacks provide guidance for overcoming addictive relationships.

Viscusi, *supra* note 205, at 372; *see also* VISCUSI, *supra* note 49, at 120. Here again, Viscusi's argument begs the question. If the addiction label has been liberally applied, that does not tell us whether cigarettes are addictive. Does the fact that some Los Angeles residents said they wanted to move out of Los Angeles, but did not, imply that heroin is not addictive?

We suspect, moreover, that the disparity between what unhappy Los Angeles residents say and what they do may be quite analogous to the problem that we believe some smokers face. Within the last decade Los Angeles has been plagued by crime, racial strife, natural disasters, and controversial jury verdicts. The Los Angeles economy, among other things, has suffered tremendously as a consequence. *See* Natalie Kostelni, *Phoenix Area Led Nation in New Jobs; Los Angeles Posted the Biggest Decline*, WALL ST. J., Oct. 22, 1996, at A2. The fact that some current residents do not move out of Los Angeles does not mean that if they were currently living elsewhere they would return to Los Angeles. Similarly, you will not hear

iii. *Summary*

A number of efficiency-minded scholars appear to have concluded that Viscusi's evidence significantly undermines the case for consumer-protection laws with respect to smoking.²⁵⁷ While we applaud Viscusi's efforts to shed empirical light on this important question, his evidence does not have the policy implications that he endorses. In the following section, we explain how an ex post incentive-based regulatory regime, such as enterprise liability, would respond to all of the information-based market failures discussed in this part, including those related to addiction.

C. *The Informational Effect of Ex Post Incentive-Based Regulation Revisited*

Having described in detail the variety of information-related reasons that consumers may be undeterrable, it may be helpful to revisit the question of how ex post incentive-based regulation would respond.²⁵⁸ If cigarette manufacturers were liable for all the harms caused by cigarettes, whether through tort law or another compensation system, they would have to raise their prices to offset those liability costs. And through product prices consumers would internalize the costs of smoking. Manufacturer liability

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of nonresidents of Los Angeles stating that they do not want to live in Los Angeles and then moving there. Residents are "stuck." For instance, many homeowners will lose considerable money if they sell at current market prices. In other words, some residents of Los Angeles may not move away—and some smokers may not quit—simply because exit costs are unexpectedly high. Under those circumstances, it is not clear that the "revealed choice" is efficient. See *supra* Subsection II.B.4.b. Whatever label is used to describe such a state of affairs, it seems inappropriate to be sanguine or dismissive about it. Elsewhere Viscusi points out that "[t]he fact that reversing . . . decisions is costly does not imply that the choices are incorrect. Instead, we must be cognizant of the potential losses from mistakes when decisions are hard to alter" VISCUSI, *supra* note 49, at 11. Perhaps so, but Viscusi ignores that many people might not assume that the decision is hard to alter. And absent that assumption, consumers have no need to take into account the potential losses.

Finally, we agree with Viscusi's suggestion that transaction costs might prevent people from doing what they purport to want to do. See Viscusi, *supra* note 205, at 372-73. The transaction cost label, however, which has been liberally applied to a variety of efficiency impediments in recent years, is no more precise or illuminating than the addiction label that Viscusi criticizes. In any event, assuming that Viscusi does not mean "addictive" as we have used the term (including path dependence), then it is extremely hard to understand what *transaction costs* could possibly be incurred by *quitting smoking*. Although it is easy to imagine the sizeable transaction costs associated with moving or even with ending a relationship, we are unable to conjure up similar costs that might result from the decision to stop smoking. If anything, we would predict a significant reduction in transaction costs, as that terminology has been conventionally employed. Given that Viscusi must be referring to the withdrawal effects of smoking cessation, "addiction" and not "transaction cost" more accurately describes the underlying problem.

257. See, e.g., Taxis, *supra* note 49, at 230-42, 260-63; Jacob Sullum, *Up in Smoke*, 25 REASON 66 (1993) (reviewing VISCUSI, *supra* note 49) ("Viscusi demolishes this view of smokers [as nicotine slaves], which has long been a basic tenet of U.S. health policy."); see also VISCUSI, *supra* note 49, at book jacket (statement of Michael Grossman) ("Viscusi's results—that on average, persons overestimate the risk of contracting lung cancer from cigarette smoking and, that an increase in the perception of this risk lowers the probability of smoking for adults and teenagers—have profound implications for public policy with regard to this behavior.").

258. For a fuller treatment of the general argument, see Croley & Hanson, *Enterprise Liability*, *supra* note 40, at 770-79, 786-92; and Hanson & Logue, *Products Liability in Context*, *supra* note 40, at 23-33.

would, in other words, help to educate consumers concerning the full costs of each and every cigarette. This is not to say that manufacturer liability would educate consumers about cigarettes on a cognitive level. The point is, rather, that consumers would, in reacting to changing product prices, respond as if they were adding the health costs of smoking to what had been the nominal costs of smoking. They would do so precisely because under enterprise liability the nominal costs of cigarettes would reflect those health costs. Consumers need never do any calculations.²⁵⁹ Furthermore, to the extent that different manufacturers' products pose greater or lesser health risks (through variation of tar and nicotine levels, the presence, size, and type of filters, and so on), consumers educated by the price mechanism would, all else being equal, consume fewer relatively dangerous cigarettes and more relatively safe cigarettes.²⁶⁰

By incorporating the total costs, including the expected ill-health costs, of each cigarette into the price of each cigarette,²⁶¹ the addictive qualities of cigarettes may also be overcome. The sources of addiction, it may be recalled, are all related to the ways in which the consumer encounters the costs and benefits of smoking. Presumably, if the costs and benefits were presented simultaneously, these problems would not arise. Manufacturer liability for the costs of cigarettes has the effect of presenting individual smokers with the costs and benefits of smoking at roughly the same moment, the point of purchase. The path dependence model of addiction would therefore pose less of a problem: The consumer's initial path would need less reorienting because she would take future costs into account. More concretely, higher prices would be more likely to discourage nonsmokers from starting than they would be to encourage current smokers to quit.²⁶² Similarly, the problem of the temporal

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259. This means of "informing" consumers through price is one that economists accept. *See, e.g.*, Viscusi, *supra* note 102, at 56; Warner et al., *supra* note 28, at 381-82; *cf.* VISCUSI, *supra* note 49, at 106 ("[H]igher taxes will [by increasing prices] reduce the demand for cigarettes in much the same way as would higher risk perceptions.").

260. We return to this point below. *See infra* Subsection V.B.1.

261. We are assuming here that the cost function of cigarettes is linear. This assumption, though questionable, is common. *See supra* note 150.

262. *See supra* note 160 and accompanying text; *see also* Warner et al., *supra* note 28, at 385 ("Taxation has been shown to be an effective deterrent to smoking, however, with the preponderance of evidence suggesting that this is especially true among children, and even many smoking adults support tax increases with the expectation that they will discourage children from initiating nicotine addictions." (footnote omitted)); Philip J. Cook, *Smoking Policy: Law, Politics, and Culture*, 262 SCIENCE 1750, 1750 (1993) (book review) ("[T]here is definitive evidence . . . that raising the . . . [price] on cigarettes discourages youths from developing a smoking habit and causes some adult smokers to desist.").

Some might want to reject any liability proposal that is justified in part on the grounds that consumers do not act in a way that is consistent with the rational actor model, for fear that doing so will create a slippery slope toward a world of paternalistic laws. We are not similarly concerned, for a variety of reasons. First, we are not certain that such a slope is undesirable, at least on efficiency grounds. *See* Hanson & Logue, *The First-Party Insurance Externality*, *supra* note 40, *passim*; *see also* Croley & Hanson, *Enterprise Liability*, *supra* note 40, *passim* (making the case for mandatory absolute manufacturer liability for all products). Second, even if we were certain, relying on multiple selves analysis in this context to justify liability does not imply that liability would be justified on that basis for all products. Scholars have offered

separation of costs and benefits would be mitigated. Consumers would confront costs and benefits simultaneously, at the point of purchase. Finally, multiple selves would also present less of a problem. The costs that would otherwise be borne by a smoker's future selves would, under enterprise liability, be borne by the present self in the form of an increased price. In sum, ex post incentive-based regulation would address many, if not all, of the sources of consumer misinformation.

III. THE SECOND SOURCE OF CONSUMER UNDETERABILITY: NEGATIVE EXTERNALITIES

In Part II, our argument for implementing some form of ex post incentive-based regulation in the cigarette market was based on informational imperfections. More precisely, we relied on the claim that consumers, when deciding whether to purchase and smoke the next pack of cigarettes, either underestimate the long-term risks of smoking or do not fully take those risks into account. That fact, we said, was a primary source of "consumer undeterrability." In this part, we introduce a second source of consumer undeterrability: the fact that many of the harms caused by cigarettes are not internalized by smokers themselves but are instead externalized to third parties.²⁶³ We describe the sources of those negative externalities in the cigarette market, focusing on "insurance externalities" in Section III.A and "noninsurance externalities" in Section III.B. In Section III.C, we mount a response to the argument made by some economists that, given the external social "benefits" of smoking from pension and other savings that occur when smokers die relatively young, and assuming that many of the costs to smokers' families are already fully internalized by smokers, there is a net positive

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some guidelines for recognizing when the multiple selves problem will be most significant. See e.g., SCHELLING, *supra* note 183, at 70 (noting the need for "a systematic way of analyzing the habit or weakness along relevant dimensions: the vulnerabilities of its victim, the environment in which it occurs, and the information, communication, and institutional commitments that can be brought to bear"). Most of those scholars view cigarettes as a paradigmatic example of a product for which the multiple selves problem plays a role. Schelling, for instance, frequently chooses cigarette smoking to make his more general points. See, e.g., *id.* at 58; see also *infra* note 784 (describing other significant distinctions between cigarettes and other consumer products). Third, it is not clear that manufacturer liability can, under any circumstances, be characterized as especially paternalistic. After all, liability does not purport to be, nor does it necessarily have the effect of, a prohibition. Liability simply ensures that the costs borne in the future are internalized in the present. Consumers are still free to make the choice that they want to make given those costs and benefits. For an argument that only an ex post incentive-based regulatory regime will ensure that consumers and manufacturers take personal responsibility for their actions, see *infra* text accompanying notes 775-778. Finally, there is also the question of which is the authentic self—the one who wants to smoke or the one who does not. For an argument that the authentic self is the latter, see SCHELLING, *supra* note 183, at 67-68.

263. An externality occurs when "the activity of one person affect[s] the welfare of another in a way that is not outside the market." HARVEY S. ROSEN, *PUBLIC FINANCE* 53 (2d ed. 1988). Thus, a negative externality occurs when the activity of one entity imposes a cost on another in a way that is not fully reflected in market prices, and a positive externality occurs when the external effect is a benefit that is not reflected in prices.

externality associated with smoking (and, therefore, that smoking should not be regulated). Using those economists' data (but changing some key assumptions), we show in Subsections III.C.2.a and III.C.2.b, respectively, that the negative externalities are greater than these economists have estimated and that the positive externalities have been overstated. We conclude that a smoker externalizes approximately \$7.00 of costs per pack on average.²⁶⁴ In Section III.D, we explain how an ex post incentive-based regulatory regime could internalize those costs, thereby leading to more efficient care levels (safer cigarettes) and activity levels (less smoking).²⁶⁵

A. Insurance Externalities

The presence of first-party insurance²⁶⁶ can cause many of the costs of smoking to be externalized by smokers to nonsmokers or by heavy smokers to light smokers, if the insurers fail to make premium or coverage adjustments based on the insureds' smoking choices. Any of the costs caused by cigarettes for which first-party insurance coverage exists can be externalized in this way. Those costs include increased health care expenses because of smoking-related illnesses, lost income (either lost income to the smoker due to smoking-related absence from work or lost to the smoker's dependents due to the smoker's illness or premature death), and property damage due to smoking-related fires.

To understand in general terms how the insurance externality works, start by imagining a world of perfect first-party health, life, disability, and property insurance, a world in which insurers could not only distinguish costlessly between smokers and nonsmokers but could also make fine-grained distinctions at all levels—for example, between light smokers and heavy smokers, and between smokers of Camel filterless and smokers of Carlton Ultralights. In

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264. Furthermore, we argue that in any event the so-called savings from smokers' premature deaths—whatever their amount—should be ignored. *See infra* Subsection III.C.2.b.iv.

265. Others have made the argument that market externalities warrant regulation of tobacco. *See, e.g.,* Ausness, *Cigarette Company Liability*, *supra* note 48, at 945-48; Garner, *supra* note 48, at 272-73; Vandall, *supra* note 48, at 417-18.

We should note that much of our analysis in this part depends in important ways on the imperfect information arguments from *supra* Part II. For example, Subsection III.C.2.a.iii draws heavily on those arguments. Indeed, there is a sense in which the imperfect information arguments can be readily translated into an externality argument—an "intrapersonal externality" from the smoker to her future selves. *Cf.* Viscusi, *supra* note 102, at 53 (explaining that smokers might "ignore the externality to their future selves"); *id.* at 66 ("[T]here is a time lag before the adverse effects of smoking will become apparent . . . [O]ne's future self may make different decisions than one would make if fully apprised of the long term consequences of smoking."). *But cf. id.* at 66-72 (ultimately rejecting on empirical grounds the notion that cigarette-related risks are externalized to smokers' future selves).

266. The phrase "first-party insurance" is often used to refer to insurance arrangements that cover insureds against some loss to the insured *other than legal liability*. Although most first-party insurance is sold to individuals—e.g., health, life, auto-collision, or homeowners' insurance—it can also be sold to businesses—e.g., fire insurance or business interruption insurance. First-party insurance can be provided privately through individual insurance policies or group policies, or it can be provided publicly through government insurance programs. The phrase "third-party insurance" is often used to refer to coverage for the risk of some type of legal liability.

such a world, insurers would, in an effort to attract customers, charge different premiums to different insureds based on the insureds' levels of smoking and on the types of cigarettes smoked. Those premium differentials would perfectly reflect the differences in expected costs posed by each insured, based on his or her smoking habit. Consumers would thereby be induced through insurance premiums to make efficient smoking decisions (whether to smoke at all, how much to smoke, what brand to smoke), as they would bear the full costs of their consumption choices with respect to cigarettes. Consequently, care levels and activity levels would be optimized.²⁶⁷

But that is not our world. In reality, insurers make virtually no distinctions in premiums (or, in the case of publicly provided first-party insurance, taxes) or benefits between smokers and nonsmokers, or among different classes of smokers. This means that most of the insured costs of smoking are externalized; that is, the costs of smoking are not taken into account by smokers. As a result, as compared with the world of perfect insurance (or as compared with a world with no insurance but with perfect information), tobacco companies are not induced to invest optimally in reducing the risks posed by cigarettes, smokers are not induced to take all cost-justified steps to smoke cigarettes carefully, and there are too many cigarettes produced and consumed.²⁶⁸

Those inefficiencies can occur in connection with any cigarette-related risk that is covered by first-party insurance. As it turns out, many cigarette-related risks are in fact insured through first-party arrangements. Most of the increase in health care costs caused by cigarette smoking is funded through some form of first-party health insurance arrangement. Such arrangements include, for example, fee-for-service policies, managed care contracts, or government-provided plans such as Medicare or Medicaid.²⁶⁹ Likewise, a

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267. Cf. Hanson & Logue, *The First-Party Insurance Externality*, *supra* note 40, at 163-64 (explaining how perfect first-party insurance can produce optimal deterrence even in a world without tort law)

268. Cf. *id.* at 164-68 (explaining care level and activity level inefficiencies resulting from the presence of imperfect first-party insurance). There is also a second source of activity level inefficiency, but this one is in the market for insurance rather than in the market for cigarettes. This inefficiency follows from the first-party insurance externality because some nonsmokers who would be insured in a world of perfect insurance may, given the insurance externality, decide not to purchase insurance or decide to purchase less insurance than otherwise; and some smokers who would not have purchased insurance (or as much insurance) in a perfect-insurance world can be induced to buy insurance (or more insurance than otherwise). Those changes in the allocation of insurance coverage can produce a welfare loss. See Michael Rothschild & Joseph Stiglitz, *Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information*, 90 Q.J. ECON. 629, 629 (1976). There is also a potential distributional issue, as wealth is transferred from nonsmokers to smokers. This occurs because some smokers can continue to smoke (or smoke at a higher level) and simply pocket the savings in insurance premiums, whereas some nonsmokers remain insured but at a higher premium. These effects, in combination, produce a pure transfer from nonsmokers to smokers and from light smokers to heavy smokers.

269. The vast majority of individuals in the United States are covered for a large fraction of their overall medical expenses either through employer-provided health insurance, individual health insurance policies, or some form of government health insurance program. See U.S. DEP'T OF COMMERCE, STATISTICAL ABSTRACT OF THE UNITED STATES—1996, at 120 (1996) [hereinafter STATISTICAL ABSTRACTS OF THE UNITED STATES] (reporting that approximately 85% of Americans have some form of

large fraction of the risk of lost income due to smoking-caused deaths and illnesses is covered through life insurance or disability insurance policies or through employer-funded sick leave.²⁷⁰ And the risks of property damage arising out of cigarette-related accidental fires are largely insured through homeowners insurance or other types of property or fire insurance policies.²⁷¹ Although some insurers attempt to charge higher premiums to smokers than to nonsmokers, for the most part first-party insurers do strikingly little classification of smoking risks.²⁷²

Of all the types of first-party insurance, life insurance and disability insurance do the best job of classifying smoking risks.²⁷³ For example, some life insurance applications ask whether an applicant has smoked in the preceding twelve months or, more generally, whether the applicant is a "smoker."²⁷⁴ If applicants answer positively to either question, they must pay a somewhat higher premium for a given level of coverage than nonsmokers do. A similar story can be told about individual disability insurance policies and their applications.²⁷⁵ Health insurers, on the other hand, have lagged far behind life insurers in offering premium discounts to nonsmokers (or in reducing benefits to smokers). According to a 1987 survey, only 14% of commercial health insurers and only 16% of Blue Cross/Blue Shield plans in

health insurance). Those insurance arrangements contain no exclusions for smoking-caused harm. See TOLLISON & WAGNER, *supra* note 49, at 77-78.

270. A large number of individuals in the United States have some level of life insurance or disability insurance. See AMERICAN COUNCIL OF LIFE INS., 1996 LIFE INSURANCE FACT BOOK 6 (1996) (reporting that 67% of adult Americans in 1995 owned life insurance). Those insurance arrangements either contain no exclusions for smoking-caused harm or do a poor job of drawing such distinctions. See *infra* notes 276-278 and accompanying text.

271. Many buildings in this country have some level of fire or property insurance (as is required by virtually all mortgage lenders). See Guy Halverson, *Insurance Described as a Financial Necessity*, CHRISTIAN SCI. MONITOR, May 8, 1995, at 9 (reporting that 95% of homeowners in the United States have homeowners' insurance, according to the Insurance Information Institute). We are aware of no instances in which fire or property insurers have refused to pay a damage claim because the fire damages were smoking-related.

272. It is, of course, next to impossible to "prove" such a negative. Nevertheless, based on our assessment of insurance policies and based on our conversations with people in the insurance industry, it is safe to say that the vast majority of private insurance companies do very little (and most do absolutely nothing) in the way of risk classification on the basis of smoking status. Furthermore, virtually all the economists writing on this topic seem to accept that there is an insurance externality of the sort that we have described. See, e.g., MANNING ET AL., *supra* note 49, at 27-28, 36, 62; Viscusi, *supra* note 102, at 75; Warner et al., *supra* note 28, at 381.

273. See *Smoker Rates Same as Rest*, OMAHA WORLD-HERALD, Feb. 7, 1993, at 8A (reporting that the only types of individual insurance that provide nonsmoker discounts are life and disability coverage).

274. See KENNETH S. ABRAHAM, INSURANCE LAW AND REGULATION 294 (1995) (reprinting a standard life insurance application form that asks, "Have you smoked one or more cigarettes within the last 12 months?"); Gary Schuman, *Misrepresentation of Smoking History in Life Insurance Applications*, 30 TORT & INS. L.J. 103, 108 (1994) ("The key question typically asks whether the proposed insured has smoked cigarettes in the last twelve or twenty-four months.").

275. For life insurance and disability insurance sold to nonsmokers, the premium discounts tend to run between 10% and 25%. See Jane Bennett Clark, *Getting What You Need in Disability Insurance*, KIPLINGER'S PERS. FIN. MAG., Feb. 1, 1993, at 98, 102. With respect to life insurance policies in particular, it has been reported that nonsmoker discounts can go as high as 45%. See Erin M. Piorek, *Neither Wind, nor Rain, nor Laws Stop Smokers*, PROVIDENCE BUS. NEWS, Mar. 10, 1997, at 22.

the United States attempt to adjust for the increased risks associated with smoking.²⁷⁶ Although there is some evidence that these percentages may have increased recently,²⁷⁷ most health insurers still do not make adjustments for smoking in individual health policies. What is more, although it is extremely difficult to come by evidence on this question, it is our impression that, in the case of group health, life, and disability insurance, insurers are even less likely to differentiate between smokers and nonsmokers in setting premiums.²⁷⁸ The difficulty of verifying answers to questions regarding smoking status is even greater in these settings, where the whole point is to avoid much of the cost of individual underwriting by offering coverage to entire groups based on where they are employed or some other association. As far as we know as well, there are no employers who have sick-leave plans that draw distinctions between smokers and nonsmokers, and there are no homeowners' policies that offer discounts to nonsmokers.

Thus, relatively little risk classification based on smoking status is done by private first-party insurers; and, with respect to some types of insurance, virtually no such risk classification is even attempted. Moreover, even when

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276. See *Health Promotion and Chemical Abuse (B) Task Force*, [2] 1987 PROC. NAT'L ASS'N INS. COMM'RS 648, 687-97; see also Chris Leo Pashos, *The Role of Health Insurers in Promoting Smoking Cessation* 53 (1989) (unpublished Ph.D. dissertation, Harvard University) (on file with the Harvard University Library). Of the health insurers that offered discounts, the amount of the discounts ranged from 10% to 27.8%. See Pashos, *supra*, at 52; see also TOLLISON & WAGNER, *supra* note 49, at 81 ("Health insurance companies typically do not offer discounts to nonsmokers only about 15 percent of health insurers offer nonsmoker discounts, and with those discounts running around 10 to 15 percent.")

277. See Helen Halpin Schauffler, *Health Insurance Policy and the Politics of Tobacco*, in *SMOKING POLICY*, *supra* note 6, at 184, 191 (finding that of the 54% of companies responding to a 1993 survey, 35% of the health insurance companies indicated that they have sold individual health policies that employ either smoker surcharges or nonsmoker discounts). But cf. Stephen D. Sugarman, *Disparate Treatment of Smokers in Employment and Insurance*, in *SMOKING POLICY*, *supra* note 6, at 161, 161 ("It is not yet clear whether disparate treatment of smokers in these ways represents an important trend or merely a modest, and perhaps only temporary, deviation from traditional practice.")

278. See *Smoker Rates Same as Rest*, *supra* note 273 (noting that group health insurers do virtually no risk classifying according to individual smoking status). Approximately 85% of those with private health insurance coverage in the United States are covered under employer-provided group policies. See Pashos *supra* note 276, at 60. It should be noted that some group health, disability, and life insurance is experience-rated on a group basis. As a result, groups with fewer smokers will, other things being equal, sometimes be able to pay lower premiums as a group. See, e.g., Schauffler, *supra* note 277, at 191 (noting that most Americans get their health insurance through employers or other large groups, which have not traditionally classified risks on an individual basis, but that "private health insurance companies have also begun to experiment with nonsmoker discounts for group policies"). For example, it has been reported that health insurance premiums for businesses that ban smoking in the workplace can be 25% to 35% lower than the rates charged to businesses that do not institute a ban. See Piorek, *supra* note 275. Those premium discounts may give employers an incentive to discourage smoking among their employees, to ban smoking in the workplace, or to avoid hiring smokers in the first place. Although those sorts of employer responses have more of an internalizing effect than nothing at all, they do not provide the same deterrence benefits as would individually differentiated insurance premiums that are based on each worker's smoking decisions—the number of cigarettes smoked, what brand, and the like. It is also worth noting that very few employers who use self-funded health insurance plans attempt to require differing levels of employee contributions on the basis of smoking status. See Helen Halpin Schauffler, *Integrating Smoking Control Policies into Employee Benefits: A Survey of Large California Corporations*, 83 AM. J. PUB. HEALTH 1226, 1227 (1993) (finding that only around 2% of the companies responding to a survey indicated offering nonsmoker discounts to employee participants in employer-provided health plans).

insurers do inquire about an applicant's smoking status in the insurance application (to enable them to charge higher premiums to the smokers), the questions they ask do not necessarily result in better risk classification. For one thing, applicants may simply lie about their smoking status or smoking history. Insurers who ask smoking-related questions will have considerable difficulty monitoring the truthfulness of the applicants' responses.²⁷⁹ Furthermore, if an insurer discovers that an applicant has falsely represented her smoking status, it is unclear how useful that information will prove to the insurer. If the discovery is made during the underwriting process, the insurer can decline to issue the policy. After the policy has been issued, however, to deny coverage to the insured on the grounds of falsely answering the smoking questions, the insurer will have to navigate the murky legal doctrines of misrepresentation. To be sure, courts that have addressed the issue have held that misrepresentation of smoking status on a life insurance application *can* provide grounds for an insurer to rescind the policy.²⁸⁰ Unless the insured dies within two years of the date of issuance of the policy (which is typically when the incontestability clause found in all life insurance policies kicks in), however, the insurer will not even be able to raise the misrepresentation defense.²⁸¹ Therefore, although life insurance companies may attempt to charge higher premiums to smokers, the success of their efforts turns largely on the honesty of the applicants.²⁸²

Even if efforts at classification were completely successful at what they sought to accomplish, the resulting level of risk classification and thus cost

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279. See Schuman, *supra* note 274, at 109. Perhaps the best way for insurers to test the truthfulness of applicants' answers during the underwriting process is to conduct a thorough medical evaluation of each applicant. We are told by life insurance agents that there are blood and urine tests that can reliably reveal whether someone has used any tobacco product within the preceding seven days. Thus, the result of such tests could be used to determine not only the likely smoking status of the applicant, but also, after cross-referencing against the applicant's answers to questions about that issue, the applicant's propensity to lie or exaggerate her health status on an insurance application. If the applicant is able to go without smoking (or using any other nicotine product) for more than seven days, however, those tests will reveal nothing about prior smoking status.

280. See, e.g., *Mutual Benefit Life Ins. Co. v. JMR Elec. Corp.*, 848 F.2d 30 (2d Cir. 1988); see also Schuman, *supra* note 274, at 111 n.63 (citing several cases holding that misrepresentation of smoking status by smokers justifies voiding a life insurance policy); Taxin, *supra* note 49, at 237 n.104 (same). It is worth noting, however, that there is a dearth of case law on the treatment of misrepresentation of smoking status in the health insurance context. In fact, we have searched in vain for a single decision holding that misrepresentation in that context permits an insurer to rescind coverage. The principal reason for the absence of such cases may be that health insurers rarely ask their insureds or insurance applicants whether they smoke.

281. See Schuman, *supra* note 274, at 130-31. All life insurance policies issued in the United States contain incontestability clauses. See ABRAHAM, *supra* note 274, at 330. The following is an incontestability clause from a typical life insurance policy: "We cannot contest your policy after it has been in force during the Insured's lifetime for two years from its Date of Issue, except for nonpayment of premiums." *Id.* at 284 (quoting a sample term life insurance policy).

282. Of course, most insureds are likely unaware of that rule and, hence, the fear of rescission may, in conjunction with the insureds' scruples, encourage honest responses. By the same token, however, less scrupulous insureds may also be unaware of the potential consequences of material misrepresentation on an insurance application in the first place and therefore may have a greater incentive to answer falsely.

internalization to smokers would be very crude. For example, insurers *never* make fine distinctions among smokers, distinctions that could affect substantially the level of smoking risk that an insured poses.²⁸³ In addition, ex-smokers, who may pose disproportionately high risks to the insurance pool,²⁸⁴ are not segregated in any way, assuming they quit at least one or two years before completing their policy applications such that they can answer “no” to any smoking questions.²⁸⁵ Finally, even when some insurers do attempt to segregate, a smoker is often able to find an alternative insurer that does not. In that way smokers may be able to avoid at least some of the additional premium that they would otherwise face.²⁸⁶

In sum, there are large negative insurance externalities associated with smoking. Because private, first-party insurance policies distinguish only crudely, if at all, between smokers and nonsmokers in their premiums and benefits, nonsmokers bear a disproportionate share of the health care costs associated with smoking. Moreover, as severe as this insurance externality appears to be in the context of private insurance arrangements, it is likely to be even more severe in the context of public or social insurance programs, on which many smokers rely for health care and in which no effort whatever is made to classify smokers into separate risk pools.²⁸⁷

B. *Noninsurance Externalities*

In addition to insurance externalities, there is an assortment of other costs associated with smoking that are externalized onto nonsmokers. First, consider the harm caused by “environmental tobacco smoke” (ETS), sometimes referred to as “passive” or “secondhand” smoke. ETS is the name given to cigarette smoke that is inhaled by people other than the smokers themselves. There is a growing body of evidence indicating that ETS produces substantial costs to society.²⁸⁸ Those exposed to ETS include not only the family members and

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283. See Hanson & Logue, *The First-Party Insurance Externality*, *supra* note 40, at 147

284. See MANNING ET AL., *supra* note 49, at 66-75

285. See *supra* note 274 and accompanying text

286. Insurers who do not adjust premiums to reflect smoking status likely cover a disproportionate share of smokers, which in turn may cause their premiums to rise. Assuming that some nonsmokers remain in the pool, however, their premiums will be lower than those charged to smokers by insurers that do segregate. For some indication of the savings enjoyed by smokers who choose nonsegregating insurers, see Pashos, *supra* note 276, at 54 tbl.3.

287. See, e.g., Schauffler, *supra* note 277, at 193 (“At present, none of the federally financed health insurance programs (Medicaid or Medicare) risk-rate beneficiary contributions based on smoking status.”) Although we have found no data on this question, we would expect to find that smokers compose a disproportionately large percentage of those who depend on public insurance to cover their health care expenses, given that typically the level of one’s smoking habit is inversely related to one’s socioeconomic status. See SURGEON GENERAL’S PROGRESS REPORT, *supra* note 3, at 272-74; Viscusi, *supra* note 102, at 58-60.

288. See, e.g., OFFICE OF RADIATION & INDOOR AIR, U.S. ENVTL. PROTECTION AGENCY, THE COSTS AND BENEFITS OF SMOKING RESTRICTIONS: AN ASSESSMENT OF THE SMOKE-FREE ENVIRONMENT ACT OF 1993 (H.R. 3434) (1994); U.S. DEP’T OF HEALTH & HUMAN SERVS., THE HEALTH CONSEQUENCES OF

coworkers of smokers, but also subway riders, restaurant goers, and pool hall frequenters who happen to occupy a space next to a smoker.²⁸⁹ Second, there is the external pecuniary and nonpecuniary harm to the family and friends of smokers resulting from the smokers' premature death and from the smokers' years of ill health. For example, family members of a smoker may suffer significant financial hardship as a result of the smoker's uninsured medical expenses or as a result of the uninsured loss of the smoker's income on which the family had been depending. Or the smoker's family and friends may experience severe emotional costs (which they would *ex ante* have been willing to pay a large price to avoid) as a result of watching their loved ones or friends suffer the negative effects of smoking.²⁹⁰ Third, even the harm to the smoker herself—that portion of the harm not compensated by first-party insurance—can be viewed as a form of externalization. Costs are, on this view, externalized by the smoker's current self to her future selves.²⁹¹

At this point, we should elaborate on how these noninsurance externalities actually remain externalities and therefore a legitimate cause for government intervention. In other words, we need to explain why the market itself does not respond to internalize those external costs.²⁹² For example, take the external costs associated with ETS exposure. Why would nonsmokers and smokers not arrive at some Coasean bargain regarding the efficient level of ETS exposure? The standard transaction cost response, at least with respect to public ETS exposure, comes immediately to mind. Except through the political process, it is difficult to imagine such a deal taking place.

But for some types of public ETS exposure, that response is too simple. Consider, for example, ETS exposure in the workplace. There, a Coasean bargain between all nonsmokers and smokers would not be necessary. So long as nonsmokers were informed of the risks posed by workplace ETS exposure, and the labor market were otherwise efficient, those risks would be internalized. Workers would demand either a higher wage to compensate them for bearing the risk of workplace ETS exposure or a safer workplace. In turn, employers (again assuming a perfect labor market) would respond either by paying higher wages to employees exposed to ETS or by taking steps to reduce

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INVOLUNTARY SMOKING: A REPORT OF THE SURGEON GENERAL (1986) [hereinafter 1986 SURGEON GENERAL'S REPORT]; EPA, PASSIVE SMOKING, *supra* note 4. For a discussion of these costs, see *infra* Subsection III.C.2.a.i.

289. Most of the empirical evidence to date regarding the harmful effects of ETS has concentrated on exposure within the home and the workplace.

290. Note that some of the harms just mentioned may be compensated through the smoker's life insurance policy. If that is the case, those costs would be externalized to the extent they are covered through imperfectly classified first-party insurance arrangements. In contrast to the previous section of the Article, however, we mean to emphasize in this section the harms not covered by the smoker's insurance.

291. See *supra* note 265; cf. Viscusi, *supra* note 102, at 66-72 (discussing, but ultimately rejecting, the notion of cigarette risks' being externalized to smokers' future selves).

292. For a discussion of why the market does not respond to correct insurance externalities, see Hanson & Logue, *The First-Party Insurance Externality*, *supra* note 40, at 148-50, 164-68.

workplace ETS exposure, whichever approach was cheaper. Such steps might include banning smoking in the workplace or limiting workplace smoking to certain areas in the building where special ventilation systems have been installed to whisk the smoke away from nonsmoker coworkers. Thus, a perfect labor market would cause workplace ETS risks to be internalized, and, as a result, the costs of workplace ETS exposure (including the costs of avoiding that exposure) would be minimized.

The problem, of course, is that labor markets are not perfectly efficient in this way. In particular, workers almost certainly do not take into account, at least not fully, the costs associated with workplace ETS exposure. This is true not only for the reasons that smokers fail to take into account the risks to themselves of smoking,²⁹³ but also because the risks associated with ETS exposure are much less well publicized than are the risks to smokers themselves and because the studies documenting ETS risks continue to be disputed.²⁹⁴ In any event, it seems to be generally agreed, even among economists, that insofar as ETS does pose substantial risks, those risks are not internalized through the labor market.²⁹⁵

A similar story can be told about why the costs borne by the families and friends of smokers will not be internalized to smokers, about, that is, why family members and friends do not enter into Coasean bargains with smokers to achieve the optimal level of smoking. We take this issue up again in the next section,²⁹⁶ but for now we say only this: Both because of imperfect information on the part of smokers and nonsmokers about the risks of ETS

293. See *supra* Part II (discussing information problems), *supra* Section III A (discussing insurance externalities).

294. See, e.g., Viscusi, *supra* note 102, at 78 (questioning the reliability of EPA studies showing risks of ETS exposure). Of course, if Viscusi is right about the reliability of the ETS cost estimates, and those costs turn out to be small or nonexistent, then the need for a regulatory response to ETS-related risks goes away. For the purpose of responding to the claim that smoking poses no net negative externality, we simply adopt the ETS estimate given by Manning et al., although we believe the actual number (like the number ultimately used by Viscusi for ETS risks) would likely be much higher. See *infra* Subsection III C 2 a.1. Later in the Article, where we describe possible policy responses to the negative externalities presented by cigarettes, we suggest that the best way to deal with ETS-related costs, whatever those costs are ultimately determined to be, may be some form of ex ante regulation—either command-and-control, performance-based, or incentive-based. See *infra* Subsection V.C.3.

295. As far as we have been able to determine, none of the economists writing on the subject of ETS risks has argued that, to the extent those risks are real, they would be internalized through the labor market. This omission seems especially important in Viscusi's case given that he has devoted a fair amount of his scholarly attention over the years to investigating the extent to which labor markets respond to workplace risks in just this way. See W. KIP VISCUSI, EMPLOYMENT HAZARDS: AN INVESTIGATION OF MARKET PERFORMANCE (1979); W. KIP VISCUSI & CHARLES O'CONNOR, *Hazard Warnings for Workplace Risks: Effects on Risk Perceptions, Wage Rates, and Turnover*, in LEARNING ABOUT RISK: CONSUMER AND WORKER RESPONSES TO HAZARD INFORMATION 98 (W. Kip Viscusi & Wesley A. Magat eds., 1987). Based on this earlier work, one would expect that Viscusi's first policy response to the public ETS risk would be to call for the dissemination of additional information about those risks in order to facilitate the market response. Instead, however, Viscusi seems to suggest that the appropriate regulatory response to public ETS exposure is some form of direct regulation. See, e.g., Viscusi, *supra* note 102, at 102 (apparently favoring direct regulation of ETS over taxation).

296. See *infra* Subsection III.C.2.a.1.

exposure, and because of insurance externalities, even the costs of in-home ETS exposure are unlikely to be fully internalized to smokers.

To summarize, there are large external costs associated with cigarette smoking, costs that will not be taken into account by the relevant decisionmakers, unless there is some form of government intervention. In the following section, we analyze, among other things, why economists writing in this area have not called for such intervention.

C. *A Review of, and Critical Response to, the Economists' Rebuttal*

Notwithstanding the arguments made in Sections II.A-B, few if any economists have called for any sort of regulatory response to the negative externalities associated with cigarettes. To state the point briefly, the economists who have attempted to quantify the social costs and benefits of cigarettes have concluded that, overall, the total social benefits of smoking equal or even exceed the costs. In fact, some economists have even suggested that cigarette consumption should be subsidized.²⁹⁷ In this section, we contest the economists' cost-benefit analyses, which wrongly exclude some important costs (for example, those inflicted on smokers' families and friends) and underestimate others. We arrive at an alternative figure of nearly \$7.00 in costs per pack. Our analysis in this part is also guided by a conviction that the economists' calculations ignore important moral elements of the issue.

1. *Summary of the Economists' Cigarette Studies*

There is now a vast economic literature attempting to quantify the costs and benefits of smoking.²⁹⁸ The most significant recent contributions to that literature can be found in a 1991 book by Willard Manning, Emmett Keeler, Joseph Newhouse, Elizabeth Sloss, and Jeffrey Wasserman²⁹⁹ and a 1995

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297. See, e.g., Viscusi, *supra* note 102, at 75.

298. See, e.g., JANE G. GRAVELLE & DENNIS ZIMMERMAN, CIGARETTE TAXES TO FUND HEALTH CARE REFORM: AN ECONOMIC ANALYSIS 3-17 (Congressional Research Service No. 94-214 E, Mar. 8, 1994); MANNING ET AL., *supra* note 49; OFFICE OF TECH. ASSESSMENT, U.S. CONGRESS, SMOKING-RELATED DEATHS AND FINANCIAL COSTS, OTA STAFF MEMORANDUM (1985); GERRY OSTER ET AL., THE ECONOMIC COSTS OF SMOKING AND BENEFITS OF QUITTING (1984); TOLLISON & WAGNER, *supra* note 49; VISCUSI, *supra* note 49; W.F. Forbes & M.E. Thompson, *Estimating the Health Care Costs of Smokers*, 74 CAN. J. PUB. HEALTH 183 (1983); Robert E. Leu & Thomas Schaub, *Does Smoking Increase Medical Care Expenditure?*, 17 SOC. SCI. & MED. 1907 (1983); Robert E. Leu & Thomas Schaub, *More on the Impact of Smoking on Medical Care Expenditures*, 21 SOC. SCI. & MED. 825 (1985); Bryan R. Luce & Stuart O. Schweitzer, *Smoking and Alcohol Abuse: A Comparison of Their Economic Consequences*, 198 NEW ENG. J. MED. 569 (1978); Dorothy P. Rice et al., *The Economic Costs of the Health Effects of Smoking*, 1984, 64 MILBANK MEMORIAL Q. 489 (1986); John B. Shoven et al., *The Social Security Cost of Smoking*, in THE ECONOMICS OF AGING 231 (David A. Wise ed., 1989); Virginia Baxter Wright, *Will Quitting Smoking Help Medicare Solve Its Financial Problems?*, 23 INQUIRY 76 (1986).

299. See MANNING ET AL., *supra* note 49. To a significant degree, the book reproduces a Rand study conducted by the authors in 1989. See Willard G. Manning et al., *The Taxes of Sin: Do Smokers and Drinkers Pay Their Way?*, 261 JAMA 1604 (1989).

article by W. Kip Viscusi.³⁰⁰ For simplicity, we refer to those two studies in the following discussion as the “economists’ cigarette studies,” and we refer to any arguments associated with those two studies as the “economists’ arguments.”³⁰¹

Although the Viscusi study and the Manning et al. study differ in the details, their policy conclusions are the same: Smokers should not be forced to internalize any more costs than they already do.³⁰² Indeed, if any government intervention is required, their logic implies, it should take the form of a subsidy to smokers.³⁰³ How do the economists reach a conclusion that is so divergent from ours? They claim that a complete cost-benefit analysis should take into account not only the external costs posed by cigarettes but also the *external benefits* of smoking, such as the social “savings” derived from the pension, social security, and nursing home entitlements that smokers leave unconsumed because of their premature deaths.³⁰⁴ Once one takes into account those external benefits and the current level of federal and state taxes imposed on tobacco products, the economists argue, smokers already more than fully internalize any external costs they may be imposing on the rest of society.³⁰⁵

Manning et al. estimate the per pack external costs and benefits of cigarette smoking under three alternative discount rates: 0%, 5%, and 10%.³⁰⁶

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300. See Viscusi, *supra* note 102.

301. It is our understanding that the main premises underlying the Viscusi and the Manning et al. studies, premises that we will criticize in some detail in the next subsection, are generally consistent with the standard assumptions of the discipline of economics. To attribute those premises to “economists” qua economists, as we do, therefore seems reasonable. We should note, however, that some economists who acknowledge these premises as being part of the discipline of economics also believe (and state emphatically) that in the debate over cigarettes noneconomic concerns are as important as economic ones. For example, the Office on Smoking and Health of the Centers for Disease Control and Prevention convened a meeting of top economists in 1995 “[t]o evaluate the criteria for defining an optimal cigarette tax, *from the perspective of the discipline of economics*.” Warner et al., *supra* note 28, at 380 (emphasis added). Although the group adopted some of the same premises as Viscusi and Manning et al., it concluded that its final positions regarding what to do about cigarettes would depend largely on “considerations other than those that derive from our professional expertise as economists.” *Id.* at 386. Willard G. Manning and Joseph P. Newhouse, two of the authors of the Manning et al. study, were among the economists who participated in that 1995 conference and who signed the statement just quoted. Jeffrey Harris, a physician and economist, is a self-described “warm” economist, for he refuses to consider some benefits of smoking and includes some costs that are very difficult to measure. See *Testimony of Jeffrey E. Harris MD PhD Before the Committee on Ways and Means, U.S. House of Representatives* (visited July 25, 1997) <<http://web.mit.edu/jeffrey/harris/testimony.html>>.

302. See MANNING ET AL., *supra* note 49, at 19; Viscusi, *supra* note 102, at 75.

303. See Viscusi, *supra* note 102, at 75.

304. See MANNING ET AL., *supra* note 49, at 7; Viscusi, *supra* note 102, at 53, *see also* Warner et al., *supra* note 28, at 382 (making the same observation).

305. See MANNING ET AL., *supra* note 49, at 19; Viscusi, *supra* note 102, at 54, 75, *see also* TOLLISON & WAGNER, *supra* note 49, at 92 (“Rather than the common allegation that smokers are ‘overusing’ publicly provided health-care programs, a more careful accounting of smokers’ role in public transfer programs would clearly show that, if anything, smokers should be candidates for a tax refund” (footnote omitted)).

306. See MANNING ET AL., *supra* note 49, at 7-8 (describing the reason for discounting).

Because Manning et al. believe that 5% is the most accurate discount rate,³⁰⁷ their “best” estimates are as follows: total medical costs, \$0.26; sick leave, \$0.01; group life insurance, \$0.05; nursing home care, -\$0.03; retirement pension, -\$0.24; fires, \$0.02; and taxes on earnings, \$0.09.³⁰⁸ The authors summarize the data as follows:

Our *best estimate* is that the external cost per pack of cigarettes is 15 cents. Smoking leads to higher medical costs (principally hospital costs), more covered work-loss days, less years of work and life, and more disability retirements than not smoking. The external financial impact of smoking is greatly reduced, however, by the effects of early death. Because smokers die younger on average, they receive less in pensions, Medicare benefits, and other long-term care. Thus, smokers subsidize nonsmokers’ Medicare and retirement benefits, while nonsmokers subsidize smokers’ medical care, disability, and sick leave early in life.³⁰⁹

To this figure of \$0.15 per pack, Manning et al. add the costs of noninsurance externalities, which they estimate to range between \$0.16 and \$0.39.³¹⁰ They thus conclude that the total external cost per pack of cigarettes is somewhere between \$0.31 and \$0.52.³¹¹ As Manning et al. emphasize, this estimate of the external costs of smoking is around or below the average combined state and federal excise and sales taxes on cigarettes,

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307. Manning et al. say little about their choice of discount rates other than to observe that “[t]he ‘correct’ discount rate is always a matter of controversy. The costs estimates in this part of the book reflect a 5 percent (real) discount rate.” *Id.* at 8. Based on the structure of their analysis it appears that they chose 5% because it falls midway between 0% and 10%. How they chose those benchmarks is not clear, however, except inasmuch as they are focal points within a range of reasonable discount rates.

308. *See id.* at 79 tbl.4-16; *see also infra* Table 1.

309. MANNING ET AL., *supra* note 49, at 127 (emphasis added) (footnote omitted). Under a 0% discount rate, total net costs are -\$0.91; under a 10% discount rate, total net costs are \$0.24. *See id.* at 79 tbl.4-16.

To determine the costs that are fairly attributable to cigarettes, Manning et al. do not compare smokers to nonsmokers; instead, they compare smokers to “nonsmoking smokers.” *Id.* at 8. They “controlled for age, sex, race, education, drinking habits, exercise habits, family size, income, self-assessed measures of physical, mental, and general health, and seat-belt use. Thus [they could] calculate the external costs of smokers *if they had never smoked* but had retained all their other characteristics”—that is, as if they were “nonsmoking smokers.” *Id.* at 29-30. Manning et al. express some concern that their \$0.15 per pack estimate may overstate the external costs of smoking inasmuch as they did not control for “bad dietary habits or an affinity for high-risk activities.” *Id.* at 30. Arguably, however, the \$0.15 figure understates the external costs they were attempting to measure inasmuch as the decision to smoke cigarettes may be causally linked to smokers’ other risky lifestyle choices. The more accurate comparison may be between smokers and nonsmokers. That comparison, according to Manning et al., yields an estimate of \$0.28 per pack. *See id.* at 14. Nevertheless, we will, for the sake of argument, accept Manning et al.’s approach to this issue.

310. *See id.* at 83-85, 133-34.

311. *See id.* at 85. Note that Manning et al. omit from this total any costs attributable to ETS exposure. *See infra* note 360 and accompanying text. Also, there is a small discrepancy in the Manning et al. numbers. Whereas in one place they state that the total external cost of cigarettes ranges from \$0.31 to \$0.52 per pack, *see* MANNING ET AL., *supra* note 49, at 85, in another place, where they report noninsurance and insurance externalities separately, the top number in the range would sum to \$0.54 per pack, *see id.* at 133.

which they report as \$0.37 per pack.³¹² They therefore conclude that "[s]mokers are already paying their way, if we judge solely on the grounds of economic efficiency."³¹³

Viscusi's analysis has the same structure as that of Manning et al. Indeed, Viscusi uses the Manning et al. study as a baseline and simply updates that study in a number of ways.³¹⁴ Using a 3% discount rate,³¹⁵ Viscusi calculates that smokers on net externalize \$0.32 of benefits with each pack of cigarettes they consume. The breakdown is as follows: total medical costs, \$0.50; sick leave, \$0.01; group life insurance, \$0.13; nursing home care, -\$0.22; retirement pension, -\$1.10; fires, \$0.02; and taxes on earnings, \$0.35.³¹⁶ Viscusi therefore concludes: "In effect, smokers are already paying their own way in the sense that there is a net externality cost savings to society from their smoking because of the cost savings arising from their premature deaths."³¹⁷ When Viscusi considers the external costs of secondhand smoke, he concludes that the total external costs associated with each pack of cigarettes range between -\$0.18 per pack (i.e., that smoking on balance *saves* society resources) and \$0.41 per pack.³¹⁸ In any event, he argues, smokers more than pay their own way at current levels of taxation, which he estimates at \$0.53 per pack.³¹⁹

As in the Manning et al. study, all of the external savings in the Viscusi study come in the form of reduced amounts collected by smokers from private pensions and social security and from reduced nursing home expenses. Given this net external benefit of smoking, Viscusi (like Manning et al.) concludes that current levels of federal and state taxation on tobacco are excessive.³²⁰ In fact, under this analysis, *any* tax on tobacco would be excessive. In Viscusi's words: "Taken at face value, these estimates indicate that, if one

312. See MANNING ET AL., *supra* note 49, at 18.

313. *Id.* at 19; *see id.* at 24 ("Taxes on cigarettes are at a level such that smokers pay approximately the costs they impose on others."). For their discussion of passive smoking costs, *see id.* at 83.

314. See Viscusi, *supra* note 102, at 72. Viscusi derives his table by taking Table 4-16 from Manning et al., *see* MANNING ET AL., *supra* note 49, at 79 tbl.4-16, and updating it for inflation, real cost increases, and other trends. Viscusi's cost estimates are based on data available as of 1993. Viscusi's table also includes columns showing how the various costs of smoking change if one attempts to take into account the fact that, over time, the tar content of cigarettes has been reduced. Because we believe that the tar content of individual cigarettes is a poor predictor of the health harms of smoking, *see supra* notes 104-105 and accompanying text, we omit the tar-level-adjusted numbers from our tabulations that follow.

315. Without commenting on Manning et al.'s choice of discount rates, Viscusi asserts that "the most reasonable [discount] rate corresponding to the long-run real rate of return in the U.S. economy is around 3 percent." Viscusi, *supra* note 102, at 73. If Viscusi had used the same discount rate as Manning et al. used (5%), Viscusi's results would have been strikingly similar to theirs.

316. *See id.* at 74 tbl.4; *see also infra* Table 1. At a 0% discount rate, the net cost per pack is -\$1.57; at 5%, it is \$0.27. *See* Viscusi, *supra* note 102, at 74 tbl.4.

317. Viscusi, *supra* note 102, at 75.

318. *See id.* at 77 tbl.4.

319. *See id.* at 57; *see also id.* at 93 ("[C]igarette taxes already exceed the level of the estimated externalities.").

320. *See id.* at 92-93.

were to set the Pigouvian tax amount based in the 3-percent discount results, *cigarette smoking should be subsidized rather than taxed.*"³²¹

Whether or not one takes Viscusi's suggestion at face value, the general message of his and Manning et al.'s studies is clear: Any proposal for internalizing the external costs of smoking through some form of regulation should be rejected (or at least reevaluated) in light of the external benefits of smoking.³²²

2. Critique of the Economists' Cigarette Studies

For a variety of reasons, we disagree with the economists' conclusions. Broadly speaking, the economists' studies significantly understate the external costs of smoking, greatly overstate (if not mischaracterize) the external benefits of smoking, and mischaracterize the effect of current excise taxes. The principal areas of disagreement come down to which costs and which benefits of smoking should be considered external to the smoker, and which should be considered internal. As will become clear, our conclusions with respect to those issues derive largely, though not entirely, from the imperfect information arguments that we detailed in Part II. Based largely on those disagreements with Viscusi and Manning et al., we ultimately conclude that the economic case for some type of government intervention in the cigarette market is reasonably strong.

a. A Closer Look at Negative Externalities: Incorporating the Imperfect Information Argument

One of the main reasons that the economists reject the goal of requiring manufacturers to internalize more than they now do is that they grossly underestimate the negative externalities created by smoking. As a starting point, it bears noting that Manning et al. intend to generate a conservative estimate of external costs.³²³ As we argue, however, a *better* estimate would include many costs that the study's authors sometimes recognize as potential costs, but choose to exclude from their "best" estimate. In the next two sections, we focus primarily, though not exclusively, on the Manning et al.

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321. *Id.* at 75 (emphasis added).

322. According to many commentators, the future of tobacco regulation will certainly be informed by, and could well turn on, the evidence regarding social costs provided by these economists. *See, e.g.*, Froma Harrop, *Smoking Is Becoming a Social Taboo*, DENVER POST, June 11, 1996, at B7; Laura Mansnerus, *Tobacco on Trial, Making a Case for Death*, N.Y. TIMES, May 5, 1996, § 4, at 1; Matthew Miller, *Clean Lungs at a Price: Do Smoking-Related Deaths Save the Nation Money?*, U.S. NEWS & WORLD REP., July 7, 1997, at 52; Robert J. Samuelson, *Who Elected the Lawyers?*, WASH. POST, July 2, 1997, at A23.

323. *See, e.g.*, MANNING ET AL., *supra* note 49, at 4 n.195 (stating that their goal is "to provide conservative estimates of the external costs"); *id.* at 13 ("We believe [our estimates] are reasonable, even conservative.").

estimates and methodologies. Because the Viscusi study relies on the Manning et al. study's findings as a baseline, most of the criticisms that we make of the Manning et al. study apply in roughly equal measure to the Viscusi study.

i. *Costs to the Smoker's Family and Other Third Parties*

Manning et al.'s "best estimate" assumes that smokers internalize all of the costs that their smoking imposes on members of their families.³²⁴ In the authors' words, such costs are "internal because the family constitutes an economic unit (it pools income)."³²⁵ Strikingly, neither Manning et al. nor Viscusi carefully explores how plausible the assumption is.³²⁶ Indeed, they seem to rely on the fact that the assumption is conventional among economists. Examined on its own terms, however, the assumption that smokers internalize the costs of smoking imposed on their families seems implausible.

The prevailing model of the family as a single preference function with an altruistic head of household allocating resources was developed by economist Gary Becker.³²⁷ Neoclassical and feminist economists alike, however, have levied a variety of criticisms against that model.³²⁸ These scholars note, for example, that because Becker fails to look within the black box of intra-household bargaining, he does not explain intra-household allocation of consumption choices.³²⁹

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324. See *id.* at 4 n.5 ("[W]e are considering the family as a single decision-making unit and treating costs imposed on other family members as internal.").

325. *Id.* at 28-29.

326. Viscusi offers a somewhat more developed justification for the assumption. He writes

Theories of the household typically assume that the household heads make decisions on behalf not only of themselves but also on behalf of other family members. Thus, the husband or wife would take into account his or her own welfare when making the smoking decision as well as the implications that the smoking behavior would have for the well-being of other family members. If individuals do in fact internalize these intrafamily externalities, then they will be already reflected in the individual decisions. Rational individual decisions consequently will imply that household externalities are internalized as well and need not be considered.

Viscusi, *supra* note 102, at 71-72 (citing GARY S. BECKER, *A TREATISE ON THE FAMILY* (enlarged ed. 1991), and MANNING ET AL., *supra* note 49, for the same assumption).

327. See BECKER, *supra* note 326.

328. A number of feminist scholars have criticized Becker's model. See, e.g., Barbara R. Bergmann, *Becker's Theory of the Family: Preposterous Conclusions*, 1 FEMINIST ECON. 141 (1995) (arguing that Becker ignores intra-familial dynamics and power disparities); Frances Wooley, *Getting the Better of Becker*, 2 FEMINIST ECON. 113 (1996) (describing a variety of alternatives to Becker's model of the family); *id.* at 116 (noting that "[t]he common thread that links these models is a recognition that families cannot be treated as if they were a single individual; there are complex interactions between the behavior of different family members, and family life does not benefit all family members equally") Within the neoclassical camp, see, for example, Pierre-Andre Chiappori, *Collective Labor Supply and Welfare*, 100 J. POL. ECON. 437 (1992), which develops a collective model of household labor supply and resource allocation.

329. See, e.g., Martin Browning et al., *Income and Outcomes: A Structural Model of Intrahousehold Allocation*, 102 J. POL. ECON. 1067, 1069-70 (1994) ("What recent empirical analysis points toward is that multiperson households cannot be treated as single decision makers and that household allocations should probably rather be considered as the outcome of some interaction between household members with different preferences."); Shelley A. Phipps & Peter S. Burton, *Sharing Within Families: Implications for the Measurement of Poverty Among Individuals in Canada*, 28 CAN. J. ECON. 177 (1995) (demonstrating

Even if the assumption that family costs are fully internal to individual decisionmakers were plausible with respect to other types of costs, it is implausible with respect to the costs of smoking. If the costs and benefits of smoking were truly internalized across members of a family, one would expect nonsmoking members of a family to be more encouraging of those family members who smoke. Yet one does not hear statements of the following sort from family members of smokers: "It's fine that my spouse (or child or parent) smokes. In light of the fact that she has taken into account the costs to herself, to me, and to other family members, it must be that she is benefiting greatly from the cigarettes. I would not want to deprive her of that tremendous pleasure. Indeed, given the net benefits, I am glad that she smokes." Similarly, it would be astonishing to hear a smoker say: "It's worth it to me to smoke even when I consider the costs to my loved ones of my dying earlier than I otherwise would and of their dying earlier than they otherwise would." It is likely that neither nonsmokers nor smokers frame the matter in those terms because smokers do not, in fact, fully internalize the costs that they impose on others.³³⁰

There is another way to put the point that smokers do not fully internalize the costs their smoking imposes on their family and friends. Even if it is assumed that smokers to some extent behave altruistically with respect to their loved ones—that is, they derive utility from bestowing benefits on loved ones and they experience disutility when they impose costs on loved ones—smokers do not take into account the fact that those costs experienced by their loved ones should, in and of themselves, count in the social welfare calculation. Thus, even if smokers in some sense "feel the pain" they are causing others, that is not enough from the perspective of overall social welfare. There is still a need for incentive-based regulation. One could argue, therefore, that it is

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through simulation how intra-household distribution can drastically affect the incidence of poverty experienced by different family members, especially children); Shelley A. Phipps & Peter S. Burton, *Social/Institutional Variables and Behavior Within Households: An Empirical Test Using the Luxembourg Income Study*, 1 FEMINIST ECON. 151 (1995) (analyzing social and institutional factors that influence bargaining power within a marriage); Duncan Thomas, *Intra-Household Resource Allocation: An Inferential Approach*, 25 J. HUM. RESOURCES 635 (1990) (noting that intra-household consumption decisions, particularly those regarding the well-being of children, will vary depending on whether the mother or father has control of resources); Frances R. Woolley & Judith Marshall, *Measuring Inequality Within the Household*, 40 REV. INCOME & WEALTH 415, 425-28 (1994) (describing a study of household members' inequality in control over expenditure and consumption decisions).

330. Cf. *Financing Provisions of the Administration's Health Security Act and Other Health Reform Proposals, Hearings Before the House Ways and Means Comm.*, 103d Cong. 317 (1994) (statement of Jeffrey E. Harris, Professor of Econ., Massachusetts Inst. of Tech.) [hereinafter *Health Care Reform Hearings*] ("Cold" economists [those who ignore all difficult-to-quantify costs] assume that smokers and their families privately, rationally, and voluntarily bear the costs from smoking-related disease and death. This is a fiction that ignores the dual reality of teenage initiation into cigarettes and adult addiction to cigarettes."); Linda B. Ford, M.D., President-Elect, American Lung Ass'n, Statement at News Conference on Potential Tobacco Settlement, Wash., D.C. (June 17, 1997) (transcript on file with the *Yale Law Journal*) ("I've seen the fear in the eyes of a child who suffers an asthma attack triggered by environmental tobacco smoke. Since it is the child's parent who smokes, I know I will see this child again and again because of a parent's addiction to tobacco.").

appropriate for the societal cost-benefit calculus regarding smoking to take into account *both* the cost to the smoker of her feeling that she has imposed a cost on a loved one *and*, separately, the actual cost imposed on the loved one by the smoker.³³¹

We should also note that the economists' assumption that family costs are fully internalized by smokers is subject to the same types of critiques that we made in Part II. For many of the reasons that we argued there that smokers tend to externalize costs to their future selves,³³² they would also likely externalize costs to their families. For instance, if smokers behave optimistically with respect to the risks of smoking, then they would be just as likely to behave optimistically with respect to the risks to their families.³³³ Similarly, if smokers externalize some of the costs of firsthand smoke to their insurers, then smokers' family members undoubtedly externalize some of the costs of secondhand smoke to their insurers.³³⁴

Finally, there are many more persons harmed by smoking than just the smokers themselves and their immediate families. Among others, friends, coworkers, and extended family members (those who do not share in the household income pool) all bear some of the pecuniary and nonpecuniary costs of smoking. For the most part, those third parties and the external costs they bear are ignored in the economists' studies.

To their credit, Manning et al. seem to recognize that family costs might properly be characterized as external.³³⁵ Consequently, they make an effort to quantify how their estimates would change if some of those costs were treated as external.³³⁶ At the same time, they briefly consider some of the external costs to "those outside the smoker's family."³³⁷ Using as a value of life \$1.66 million and treating all deaths as external, they estimate a per pack

331. This argument is a version of an observation made recently by Louis Kaplow in the context of altruistic gift giving. See Louis Kaplow, *A Note on Subsidizing Gifts*, 58 J. PUB. ECON. 469 (1995). What is interesting for current purposes is that Kaplow's point applies not only to the bestowal of gifts but also to the avoidance of costs. As Kaplow points out, it may be controversial to count as a social cost—separate from the cost to the loved one imposed by the smoker's premature death—the pain felt by the smoker purely from knowing that she is imposing this cost on others. See *id.* at 475 & n.12. Such costs, however, are not significantly different from the types of psychic costs that get included, uncontroversially, in the social welfare function.

332. See *supra* Subsection II.B.4.d.

333. Note that Viscusi and Manning et al. do not even claim to provide evidence that smokers and those around them are well-informed of the risks of passive smoke or fire or other risks facing the family members of a smoker.

334. We know of no life, health, or disability policy that adjusts premiums to take into account the fact that one or more of an insurance applicant's family members smokes. It is striking that the economists' studies seemed to miss this fairly obvious point. Consider, for instance, the tension in the following two statements, which are in close proximity to each other in Manning et al.'s book: (1) "[t]o the extent that passive smoking generates health care and other collectively financed costs, a portion of those costs is also paid by nonsmokers"; and (2) "[w]e do not consider . . . the costs of passive smoking within families as external." MANNING ET AL., *supra* note 49, at 4.

335. See *id.* at 4, 32, 195 n.5.

336. See *id.* at 18.

337. *Id.* at 83.

cost of \$0.09 for lost lives in fires and another \$0.14 for fetal deaths caused by smoking.³³⁸ In addition, they estimate \$0.02 per pack for smoking-caused neonatal intensive care costs.³³⁹ Finally, Manning et al. estimate the external costs of ETS to be \$.014 per pack.³⁴⁰

In sum, the economists exclude from their calculations substantial costs imposed by smokers on those around them, even though there are good reasons to count those costs as noninsurance externalities. Including those costs affects the cost-benefit calculation significantly.

ii. *Insurance Externalities*

For the sum of the insurance externalities, we accept the numbers given by Viscusi, with a few notable exceptions. Again, those numbers are based on the Manning et al. study but were updated by Viscusi in various ways. Thus, we accept per pack figures of \$0.50 in medical costs, \$0.01 in sick-leave costs, \$0.13 in group-life insurance costs, and \$0.02 in fire-related property costs. We deal with the positive externalities in Subsection III.C.2.b below.³⁴¹

iii. *Costs to the Smoker*

For all the reasons set forth in Part II, another cost that should be taken into account in an incentive-based system is the costs to the smokers themselves of their smoking habit. Although Manning et al. emphasize that "[t]he biggest component of total costs is the cost to the smoker of premature death and disability," they exclude that cost from consideration "[b]ecause this

338. See *id.* at 83-84.

339. See *id.* at 83-84; *id.* at 133 (summarizing their calculations of these costs); see also *id.* at 14 ("If we were to expand our external cost definition to include the costs of passive smoking, neonatal complications caused by mothers' smoking, and other costs to individuals other than the smoker, the external costs would range up to 52 cents per pack.").

340. See *id.* at 83. In arriving at \$0.14 per pack, Manning et al. assume that all ETS-caused deaths are "external" and that the value of each life, on a willingness-to-pay measure, is \$1.66 million. See *id.* Viscusi provides a more thorough analysis of ETS costs than Manning et al. do, and Viscusi takes into account government studies of ETS costs that were issued after the Manning et al. book was published. See Viscusi, *supra* note 102, at 78-92. For two general reasons, however, we use the Manning et al. estimate of \$0.14 per pack for ETS costs. First, we cannot determine what number Viscusi uses for overall ETS costs in his final analysis of total external smoking costs. Viscusi states that the total passive smoking costs that are included in his final calculations "are assessed as the low, median, and high numbers from Tables 6, 7 (lung cancer), and 9 (heart disease)." *Id.* at 93 n.19. Those tables have so many different numbers and capture so many alternative assumptions, however, that we are unclear which numbers he means. We suspect that the final numbers exceed the \$0.14 estimated by Manning et al., but we cannot be sure. Cf. *infra* note 361 (discussing Viscusi's later estimate). Second, Viscusi omits all costs attributable to in-home exposure to ETS. See Viscusi, *supra* note 102, at 93 & n.19 (describing his table summarizing the external costs of smoking as being derived from an earlier table that included only outside-the-home ETS cost). We regard that omission as a serious mistake, for the reasons discussed in the text.

341. As we explain *infra* Subsection III.C.2.b, we regard those positive externalities as having zero internalized value to the smoker. Note also that we omit the external costs attributable to lost tax revenues because the assumption underlying the estimate of those lost taxes was that the entire amount would be returned to the smoker in the form of government benefits.

cost is borne by the smoker.”³⁴² Implicit in the logic that those costs are already internalized by smokers because they bear them is an assumption that smokers are well-informed of the health risks and addictiveness of smoking and that their smoking decisions take all of that information into account. Unlike Viscusi, Manning et al. do not attempt to justify that assumption.³⁴³ Indeed, they acknowledge that, if the assumption were false, then the negative externalities (including the intrapersonal externalities to future selves) would greatly exceed their estimates of \$0.15 per pack.³⁴⁴ Specifically, the negative externality from death and disability “would be on the order of \$5 per pack.”³⁴⁵ In addition, “[s]mokers also pay 7 cents per pack more on out-of-pocket medical costs, and lose 86 cents in wages in salaries.”³⁴⁶

In Part II, we argued that smokers do not internalize those costs (even if their future selves must bear them) because of numerous consumer-information problems. Therefore, we conclude that those costs—for regulatory purposes and from the perspective of economics—should be viewed as external to the smokers. According to Manning et al.’s calculations, which we accept for present purposes, those costs total \$5.93 per pack.³⁴⁷

342. MANNING ET AL., *supra* note 49, at 82.

343. In his article measuring externalities, Viscusi provides a thumbnail version of the arguments that we summarized and criticized *supra* Part II regarding the nature and extent of consumer information. See Viscusi, *supra* note 102, at 66-72.

344. See MANNING ET AL., *supra* note 49, at 21.

345. *Id.* The basis and precise meaning of this estimate is not clear to us. As far as we can tell, the \$5.00 figure is meant to represent only the externality to each smoker’s future selves and thus would need to be added to any other net negative externalities associated with smoking. Elsewhere Manning et al. emphasize the imprecision of that number and suggest that the real number (as if there were such a thing) may be lower:

What is the cost to a person and his or her family of losing 28 discounted minutes for each pack of cigarettes smoked? In monetary terms, this is 93 cents of wages. . . . But surveys have shown that most people are willing to pay many times their expected increase in earnings for additional safety. Thus, this component of costs may be as much as \$5.00 a pack.

Id. at 82 (citations omitted). Manning et al. appear to have discounted 137 minutes of lost life expectancy per pack of cigarettes smoked to 28 minutes. See *id.* at 79 tbl.4-16. In another place, Manning et al. appear to offer a different calculation. See *id.* at 134 (“For cigarettes the discounted cost is 0.4 hour per pack for the smoker . . . . At \$5 per hour, these costs amount to \$1 to \$2 per pack . . . .”). Manning et al. do not make clear where they got these numbers or how they fit with the \$5.00 per pack number used earlier.

346. *Id.* at 8. Understanding the meaning and proper interpretation of Manning et al.’s figures is not easy. Indeed, they at times give different numbers for those that we have noted in the text. See, e.g., *id.* at 14-15 (“If we were to add the internal costs of disability and premature death to our estimate, the costs could range from 78 cents to \$5 per pack, depending on how we valued the lost years of life.”) In addition, we are not clear on whether the costs of pain and suffering borne by the smoker are included in these numbers. Cf. *id.* at 28 (suggesting that pain-and-suffering costs are excluded).

347. That estimate includes costs to the smoker of premature death and disability (\$5.00), out-of-pocket medical expenses (\$0.07), and lost wages (\$0.86). See *id.* at 8, 21. Again, some might object that, insofar as smokers are mindful of those costs, counting them as costs in an incentive-based system of regulation would produce overdeterrence—i.e., too little smoking. Below, we explain how some incentive-based systems ameliorate the overdeterrence problem, whereas others do not. See *infra* Subsection IV.D.3.

TABLE 1. ESTIMATED EXTERNAL COSTS PER PACK OF CIGARETTES

COSTS	MANNING ET AL. ³⁴⁸	VISCUSI ³⁴⁹	HANSON & LOGUE'S ALTERNATIVE ASSUMPTIONS
Medical Care	\$0.26	\$0.50	\$0.50
Sick Leave	0.01	0.01	0.01
Group Life Insurance	0.05	0.13	0.13
Nursing Home Care	-0.03	-0.22	—
Retirement Pension	-0.24	-1.10	—
Fire Insurance	0.02	0.02	0.02
Taxes on Earnings	0.09	0.35	—
Total Insurance	0.15	-0.32	0.66
Costs to Smoker	—	—	5.93
ETS	—	—	0.14
Other	—	—	0.25 ³⁵⁰
Total Noninsurance	0.16 to 0.37	0.14 to 0.73	6.32
Total	0.31 to 0.52 ³⁵¹	-0.18 to 0.41 ³⁵²	6.98

We also accept (without endorsing) Viscusi's estimates for the negative insurance externalities associated with medical care, sick leave, fire insurance,

348. See MANNING ET AL., *supra* note 49, at 79 tbl.4-16 (utilizing a discount rate of 5%).

349. See Viscusi, *supra* note 102, at 74 tbl.4 (utilizing a discount rate of 3%).

350. This estimate, based on Manning et al., includes lives lost in fires (\$0.09), fetal deaths (\$0.14), and neonatal intensive care (\$0.02). See MANNING ET AL., *supra* note 49, at 83-84.

351. See *id.* at 85. The "Total Noninsurance Costs" were derived by subtracting "Total Insurance Costs" from "Total Costs."

352. See Viscusi, *supra* note 102, at 93. The "Total Noninsurance Costs" were derived by subtracting "Total Insurance Costs" from "Total Costs."

and life insurance.³⁵³ When it comes to the negative costs (or “positive externalities”) that Viscusi and Manning et al. attribute to nursing home savings and pension savings, however, we part company with the economists. As we discuss in detail in Subsection III.C.2.b.iv, we take the position that the “savings” to society resulting from the fact that smokers tend to die at a younger age than nonsmokers should not be included in the calculation of the size of the net externality produced by cigarettes. For essentially the same reasons, and in the interest of consistency, we also treat the external costs of lost “taxes on earnings” because of smokers’ premature deaths as being zero³⁵⁴ whereas Manning et al. and Viscusi assign a positive number to those costs, as is consistent with their view of the positive externalities associated with smoking.³⁵⁵ This leaves us with a total negative insurance externality of \$0.66 per pack. To that, we add the costs to the smokers themselves (\$5.93), the total ETS costs (\$0.14), and other assorted costs attributable to cigarettes (\$0.25). As Table 1 shows, we arrive at a total cost of almost \$7.00 per pack, which greatly exceeds the estimates of both Viscusi and Manning et al.³⁵⁶

iv. *Additional Concerns*

At this point, let us emphasize that our decision to take at face value the economists’ estimates of external smoking costs (with the exceptions already noted of family costs and costs to the smokers themselves) should not be understood as an endorsement of those numbers or of the methodology used in arriving at them. To the contrary, there are reasons to believe that those numbers substantially understate the external costs of smoking. For example, when Manning et al. calculate the total life insurance externality associated with cigarette smoking, they limit their analysis to group life insurance.³⁵⁷ They justify this limited focus on group insurance by assuming that individual life insurance policies adequately classify risks according to smoking status, thus creating no insurance externality.³⁵⁸ We strongly disagree with that assumption. For many people, individual rather than group policies are their

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353. For a discussion of our reservations about Viscusi’s and Manning et al.’s calculations, see *infra* Subsection III.C.2.a.iv.

354. Our rationale is that, if the pension and nursing home savings due to the early deaths of smokers are to be excluded, it makes sense to exclude from the analysis as well the taxes that would have been collected had smokers lived a statistically normal nonsmoker lifespan.

355. Manning et al. and Viscusi include only the lost taxes that would have been used to fund the costs accounted for in their numbers, such as medical care and pensions.

356. Our total cost numbers ignore existing federal and state excise taxes on cigarettes, though Viscusi and Manning et al. analyze these costs. See *supra* notes 312, 319, and accompanying text. For the reasons why we believe those taxes should be ignored, see *infra* Subsection III.C.2.b.iii.

357. See MANNING ET AL., *supra* note 49, at 37-38. Viscusi adopts the same approach, although he updates the figures. See Viscusi, *supra* note 102, at 96.

358. See MANNING ET AL., *supra* note 49, at 37-38.

major form of life insurance coverage, and, as we observed above in Section III.A, those policies, even when they attempt to classify smoking risks, do a poor job of it.

Another reason that we are inclined to doubt the reliability of Manning et al.'s and Viscusi's numbers is their treatment of ETS costs. For instance, Manning et al. estimate the total cost of ETS to be \$0.14 per pack,³⁵⁹ but they omit that number from their final calculations for reasons that are unclear.³⁶⁰ Viscusi, on the other hand, includes a figure for ETS costs that is based on more recent evidence, although we were not able to determine from his tables precisely what the final number is or how exactly it was calculated.³⁶¹ More troubling with respect to Viscusi's ETS calculations are the questionable assumptions upon which the calculations are based. For example, Viscusi assumes that the morbidity costs associated with ETS are zero.³⁶² This seems especially odd, given that the studies upon which he principally relies for his mortality-cost estimates also include substantial morbidity-cost estimates.³⁶³ In addition, consistent with his treatment of family members of smokers elsewhere, Viscusi omits all ETS-caused mortality costs attributable to in-home exposure to ETS.³⁶⁴ When we attempt to calculate the total ETS costs, using the EPA's estimates of total ETS-induced mortality and morbidity costs and applying a plausible willingness-to-pay measure of the value of a lost life, we arrive at a number in the neighborhood of \$1.00 per pack.³⁶⁵ Nevertheless, we have chosen simply to accept in this

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359. *See id.* at 83.

360. *See id.* at 79 tbl.4-16 (omitting the ETS cost estimate from final totals). Viscusi claims that Manning et al. omit the \$0.14 because they concluded that "the evidence at the time of their study was too fragmentary to make a reliable judgment." Viscusi, *supra* note 102, at 78. But Viscusi cites no specific language in the Manning et al. studies to support that interpretation.

361. In a more recent summary of his earlier work, Viscusi writes: "Using the upper-bound EPA estimates of the ETS body counts in conjunction with a figure of \$5 million per life lost, I have estimated that the external cost per pack of cigarettes is as high as 41¢ per pack." Viscusi, *supra* note 150, at 46.

362. We take that to be Viscusi's assumption because his study does not mention ETS morbidity costs and because the tables summarizing his calculations do not contain any morbidity cost estimates. For the same reasons, we conclude that Manning et al. make the same assumption.

363. For example, the EPA study on which Viscusi bases some of his calculations estimates the total annual morbidity costs of ETS to be between \$2.7 billion and \$6.5 billion. *See OFFICE OF RADIATION & INDOOR AIR, supra* note 288, at 13. Those costs include the medical expenses associated with an assortment of ailments, particularly asthma.

364. He omits inside-the-home heart disease mortality costs because they "may well be internalized by the smoker" and because "the underlying scientific basis for these estimates is extremely fragile and highly speculative." Viscusi, *supra* note 102, at 87. He omits inside-the-home lung cancer deaths from his analysis for similar reasons. *See id.* at 85.

365. For the purpose of making this calculation, we used as a starting point the estimated mortality and morbidity losses shown in OFFICE OF RADIATION & INDOOR AIR, *supra* note 288, exhs.2-6, 2-7. To arrive at an annual dollar cost for mortality losses (discounted to present value to account for the fact that tobacco-smoke exposure shortens one's life at the end, which will typically be years in the future), we used a valuation of \$924,000 per life lost due to ETS. Applying this approach, we found that the total annual cost of in-home ETS exposure falls somewhere between \$3.5 billion and \$4.5 billion.

We should also note that Viscusi, in his calculation of total insurance externalities, includes a range of estimated "ETS insurance externalities." Viscusi, *supra* note 102, at 91 tbl.11. Again, we are not entirely sure how he arrived at these numbers; the only discussion of his methodology that we can find is one

part the Manning et al. number of \$0.14 per pack for the external ETS-related costs of cigarettes.³⁶⁶

There are other examples of questionable calculations in both the Manning et al. and Viscusi studies. From the positive externality side, when Manning et al. (and thus Viscusi) attempt to compute the total external benefit associated with pension savings attributable to smokers' dying young, they assume unrealistically that all pension plans are defined benefit plans that terminate when the smoker dies.³⁶⁷ A majority of people in this country who have pension plans, however, have some form of defined contribution plan.³⁶⁸ In contrast to defined benefit plans, the benefits of defined

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sentence that reads: "The insurance externalities from ETS are the first estimates of this kind and reflect the analog of the insurance externalities from smokers themselves." *Id.* at 87. Based on that sentence, and because the ETS insurance externality numbers in Viscusi's table end up being positive externalities, we assume that those numbers are the excess of the pension and nursing home "savings" associated with the premature death of those exposed to ETS over the medical, sick leave, life insurance, and fire-related external costs of that exposure. Therefore, if we were to apply to the ETS insurance externality the approach developed in this Article—that is, eliminating the pension and nursing home element from the formula—the ETS insurance externalities would clearly be net costs rather than net benefits to society. We do not, however, attempt to quantify those additional external costs.

366. The most recent reports suggest that there is growing evidence of heart disease risk associated with ETS exposure. See, e.g., Denise Grady, *Study Finds Secondhand Smoke Doubles Risk of Heart Disease*, N.Y. TIMES, May 20, 1997, at A1 (reporting on the findings of a recent study by Harvard researchers suggesting that there may be 50,000 ETS-caused heart disease deaths per year in the United States). It is the connection between ETS exposure and heart disease that Viscusi suggests is most questionable. See Viscusi, *supra* note 102, at 85.

367. See MANNING ET AL., *supra* note 49, at 29. By a defined benefit plan, Manning et al. mean a private pension plan that, upon the worker's retirement, pays her some annual amount that is a function of her salary at retirement. What is key for our purposes is that Manning et al. assume that, if the worker dies prematurely (whether due to smoking or some other cause), the pension resources that would have gone to the worker are instead returned to the other participants in the pension plan, either in the form of smaller required contributions or larger pensions. That effect is the supposed pension savings to society of cigarette smoking. Viscusi does not mention specifically what his assumptions are regarding defined contribution and defined benefit plans, but he seems to have adopted the Manning et al. approach.

368. See U.S. DEP'T OF LABOR, PENSION AND HEALTH BENEFITS OF AMERICAN WORKERS: NEW FINDINGS FROM THE APRIL 1993 CURRENT POPULATION SURVEY at B-19 (1994). According to that study, of those workers in the United States covered by only one or the other type of pension plan, almost twice as many report being under a defined contribution plan as report being under a defined benefit plan. See *id.* Additionally, when those wage and salary workers who reported participating in both defined benefit and defined contribution plans were asked to identify which type of plan was "most important," 60% said defined contribution and only 40% said defined benefit. See *id.* at B-20. Finally, 75% of workers participating in private pension plans report being vested; only 15% report being unvested. (The rest reported not knowing the answer to the question.) See *id.* at B-21.

A defined contribution plan, in contrast to a defined benefit plan, is more of an "employer-enhanced private savings plan." MANNING ET AL., *supra* note 49, at 29. After some period of time, if the worker stays on the job long enough, the contributions to a defined contribution plan and the accumulated earnings on those contributions begin to vest to the worker. That means that those assets essentially become the property of the worker: She can take those benefits with her if she changes jobs, and her estate would receive the benefits if she were to die prematurely. With defined contribution plans, therefore, the worker's benefits, to the extent they have vested, do not go back into the pension pool. See *The Basics of Pension Plans* (visited Nov. 7, 1997) <<http://www.pensionappraisers.com/penbasics.html>>. Consequently, to the extent private pension plans take the form of defined contribution plans, there is no positive externality even under Manning et al.'s own analysis.

Manning et al. base their decision to ignore defined contribution plans on two rationales: "(1) [D]efined contribution plans are a minority of private pension plans, and (2) even in defined contribution plans, the amount of the annuity is usually not a function of habit status." MANNING ET AL., *supra* note 49, at 29. The first rationale appears to be a product of the authors' reliance on now-dated statistics. As

contribution plans do not terminate at death and, according to the Manning et al. analysis, would not be considered a positive externality associated with smokers' dying young. We will address the concept of positive externalities from premature death below.³⁶⁹ Here we only mean to suggest why our confidence in the economists' numbers, which we are taking as given for the purposes of argument, may be unfounded.

In addition, although we follow Manning et al.'s and Viscusi's lead in omitting a number of important categories of smoking costs, ideally those costs should be included in the analysis. For example, wholly separate from ETS costs, we would expect there to be large pecuniary and nonpecuniary costs experienced by smokers' families and friends as a consequence of smokers' protracted smoking-related illnesses and their smoking-caused premature deaths.³⁷⁰ Neither Manning et al. nor Viscusi attempts to measure these costs (which could, in theory, be quantified by using some combination of estimated out-of-pocket costs together with a willingness-to-pay measure for the nonpecuniary element). If those costs were taken into account, it is likely that the external costs of smoking would be much higher than is reflected in the third column of Table 1. Less significant than those suffering costs, but perhaps more familiar, are the annoyance costs faced by nonsmokers. As at least one commentator has correctly noted, many nonsmokers would be willing to pay something for smoke-free and smoke-residue-free environments: "If nonsmokers were willing to pay \$50 a year for this privilege, it would add up to \$10 billion. That in turn could justify a 42-cent-per-pack tax, forcing smokers to pay for their annoying habit."³⁷¹

Finally, there are also a number of non-health-related costs to the smokers themselves that Manning et al. and Viscusi overlook. For instance, smokers likely pay, on average, higher home cleaning costs, higher dry cleaning bills, and higher amounts for teeth cleaning products and services.³⁷² Many of them are also likely to spend more on breath mints and sprays and on repairing or replacing scorched clothing or furniture.³⁷³ Because of lingering smoke

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to the second rationale, we agree with the premise, but not with the conclusion. It is true that defined contribution pension plans and the annuities that are issued in connection with those plans do not typically distinguish among beneficiaries on the basis of their smoking status. That fact, however, has no implications for the question at hand. The point is that the "benefits" of early death are not enjoyed by other pension plan participants; they remain with the decedent's estate. They are not, in other words, *externalized*. Those pension payouts should therefore be excluded from any calculation of the positive externalities of smoking. Manning et al. may have wrongly decided to treat pension payouts of this sort as an externality simply because of their more general definition of externalities. See, e.g., *id.* at 45 ("[T]he concept of externality is usually clear: a portion of the costs is generally external if costs are financed by a large pool of insured individuals, and premiums (or taxes) do not depend on smoking status.").

369. See *infra* Subsection III.C.2.b.

370. See *supra* Section III.B.

371. Miller, *supra* note 322, at 53; cf. *infra* text accompanying note 404 (describing possible psychic costs of "sin").

372. See Vivian Marino, *Smokers Cough Up Big Bucks To Feed Habit*, AP, July 8, 1997, available in 1997 WL 4874041.

373. See *id.*

odors, smokers may also face additional costs in terms of reduced resale market value of their homes and cars.³⁷⁴ Finally, a large number of smokers have paid billions for various sorts of smoking-cessation aids.³⁷⁵ It seems doubtful that most smokers take those added costs into account when deciding whether to smoke.³⁷⁶ Indeed, the fact that economists such as Manning et al. do not even consider those costs provides some evidence that they are not widely recognized as costs.³⁷⁷

For all of those reasons (especially the apparent omission of in-home ETS mortality costs and all ETS morbidity costs and, perhaps most significant, the omission of any pecuniary and nonpecuniary harms suffered by smokers' family and friends), it is likely that our final estimate of the total external costs of smoking shown in Table 1—roughly \$7.00 per pack—may understate by a large amount the magnitude of the problem.³⁷⁸ In sum, even our conservative estimate of \$7.00 per pack of external costs dwarfs the numbers derived by the economists. As we have stated, the main reason for the difference is our decision to include the costs of smoking to smokers themselves, which we do for the information-based reasons discussed in Part II. In the following section, we explain the other principal difference between our final estimate and that of the economists, namely, our decision not to include the social benefits of smoking.

b. *A Closer Look at the Positive Externalities*

As we noted at the outset of this section, economists argue that the external costs of smoking are offset (or more than offset) by the social "benefits" of smoking. In the previous subsection, however, we explained that the external *costs* of smoking have been drastically *understated*. In this subsection, we explain that the external *benefits* of smoking have been at least as drastically *overstated*. We argue further that the so-called social savings

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374. *See id.*

375. *See Health Care Reform Hearings*, *supra* note 330, at 316 (statement of Jeffrey Harns), Eben Shapiro, *After Nicotine Patches: Sprays, Pills, Inhalers?*, WALL ST. J., Nov. 8, 1993, at B1, *see also* Parker-Pope, *supra* note 141 (reporting annual expenditures on smoking-cessation devices and programs at \$417.7 million).

376. *See Health Care Reform Hearings*, *supra* note 330, at 316 (statement of Jeffrey Harns)

377. Jeffrey Harris has criticized the sort of studies conducted by Manning et al. and Viscusi for focusing "only on the easy-to-measure costs." *Id.* at 316. This "cold approach," according to Harns, assumes "that all unquantifiable costs somehow cancel each other out." *Id.* Harns adopts instead the "warm approach," which resists the temptation to "dismiss injury and suffering merely because it cannot be simply calibrated." *Id.*

378. We omit some costs that other economists include. For instance, Jeffrey Harns calculates a loss in personal income taxes of \$14 billion per year due to premature deaths from smoking. *See id.* at 317. Similarly, Manning et al. calculate a per pack cost of \$0.09 for lost income taxes, *see* MANNING ET AL., *supra* note 49, at 75, while Viscusi estimates such loss at \$0.35, *see* Viscusi, *supra* note 102, at 74 tbl.4. We exclude those costs, for reasons discussed *supra* note 354.

resulting from cigarette-caused deaths should, for economic and noneconomic reasons, be excluded from the policymaker's calculus.

All of the alleged external benefits of smoking derive from the fact that smokers, as compared to nonsmokers, tend to die near the end of their most productive years and at the beginning of the years in which they will draw down the various accounts they have accumulated over a lifetime of productive work. As a consequence, the argument goes, when smokers die, large amounts of resources (especially public and private pension entitlements as well as nursing home entitlements) are, on average, left to be consumed by the rest of society. This translates into lower pension and nursing home premiums for nonsmokers during their lifetimes.³⁷⁹

Based on that rationale, and according to Manning et al.'s calculations, smoking saves society \$0.24 per pack in smokers' unclaimed pension entitlements and \$0.03 per pack in smokers' unclaimed nursing home entitlements.³⁸⁰ After making a number of updating adjustments, Viscusi reports those per pack benefits at \$1.10 for pension savings and \$0.22 for nursing home savings.³⁸¹ Ultimately, the conclusion of the positive externality story is that, instead of trying to deter cigarette consumption, we should be subsidizing it.³⁸²

When we first encountered this positive externality argument, it struck us as bizarre and counterintuitive. Because we are responding primarily to economic arguments, we emphasize here the economic flaws in the positive externality story. This focus on economics and efficiency, however, should not be interpreted to mean that we think the strongest responses against the positive externality argument are economic ones. To the contrary, as we suggest briefly below,³⁸³ we suspect that the moral objections to this story are at least as strong as the economic objections.³⁸⁴

379. See MANNING ET AL., *supra* note 49, at 28; Viscusi, *supra* note 102, at 75.

380. See MANNING ET AL., *supra* note 49, at 79 tbl.4-16; *see also supra* Table 1. Here, as elsewhere in this Article, we use Manning et al.'s "best estimates"—i.e., the figures arrived at using a 5% discount rate—in discussing their calculations. *See supra* note 307 and accompanying text. We use Viscusi's 3% discounted figures in discussing his calculations. *See supra* note 315 and accompanying text.

381. *See* Viscusi, *supra* note 102, at 74 tbl.4; *see also supra* Table 1; *cf.* Viscusi, *supra* note 102, at 95-97 (discussing his updating adjustments to Manning et al.'s numbers).

382. *See, e.g.,* Viscusi, *supra* note 102, at 75 ("Taken at face value, these estimates indicate that, if one were to set the Pigouvian tax amount based in the 3-percent discount rate results, cigarette smoking should be subsidized rather than taxed.").

383. *See infra* Subsection III.C.2.b.iv.

384. Even if we grant, for the sake of argument, that there is a positive externality associated with the lethal effects of smoking and that it has been properly measured (both of which claims we contest in the following subsections), the positive externality identified by the economists' studies is still swamped by the nearly \$7.00 of negative externalities that we have identified, *see supra* Table 1, using basically the economists' own numbers. From an economic perspective, this fact calls for more internalization of costs, not less.

i. *Assets Enjoyed (and Not Enjoyed) by Others*

Even if we were willing to consider the savings from premature deaths in our social cost-benefit calculation, the only possible positive externality associated with the premature deaths of smokers would be the assets that the smokers themselves would have consumed had they not smoked and, as a result, had lived longer. Any assets that would have been consumed by anyone other than the smokers had they not smoked cannot be considered part of the externality. When the smokers die early there may be a transfer of those assets, but this transfer should not go into the efficiency analysis. For example, assets that would have been consumed by the family of the smokers (or by charities to which the smokers would have made contributions, etc.) but that instead get consumed by the smokers' fellow pension plan participants do not count as a positive externality. (Our conclusion here assumes that everyone other than the smokers, including the smokers' family members, is external to the smokers.)³⁸⁵ Therefore, the economists' estimates of pension savings should, at the very least, be reduced to take into account the extent to which those so-called savings represent such transfers.

Similarly, the positive externality story seems to assume that smokers die leaving no liabilities. That is, the economists make no attempt to offset the pension and social security savings associated with smokers' premature death by whatever liabilities go unpaid when smokers die. It may be the case that smokers, on average, have fewer liabilities when they die than nonsmokers do. But no evidence to that effect is offered. In any event, some adjustment should have been made to account for whatever liabilities smokers do tend to leave when they die.

ii. *Do Smokers Really Externalize Forgone "Benefits"?*

The positive externality argument also seems wrong based on the fact that information problems (such as the ones we discussed in Part II) prevent smokers from experiencing the loss of future pension benefits as a current cost in their decisions regarding whether to smoke the next pack. If the forgone pension benefits of smokers are indeed to be understood as a positive externality, then their loss must affect the incentives of the smokers.³⁸⁶ To

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385. See *supra* Subsection III.C.2.a.i. If we were to accept the assumption made by Manning et al. and Viscusi that costs borne or benefits enjoyed by a smoker's household member are internal to the smoker, their mistaken assumption that all pension plans are defined benefit plans would provide another basis to criticize their estimate of positive externalities. See *supra* notes 367-368 and accompanying text.

386. There is little doubt that Manning et al. are making a positive externality argument. See, e.g., MANNING ET AL., *supra* note 49, at 28 ("[S]moking leads to a shift in future claims or benefits from smokers to nonsmokers, thereby yielding a positive externality to nonsmokers.") Other language in their book also indicates that they have this sort of incentive-affecting externality in mind instead of a transfer:

see why this is so, take a standard example of a positive externality: paying to have one's lawn beautifully landscaped. If we assume the cost of landscaping to be \$400, but the benefit to the homeowner herself to be only, say, \$100, then the homeowner will not make the investment. That would be inefficient, however, if the landscaping would produce anything greater than \$300 worth of benefits to the homeowner's neighbors. The reason, in the absence of government intervention, that the landscaping would not get done, despite the overall social benefit of its getting done, is that the homeowner would *experience* the full \$400 cost of landscaping investment but would not *experience* enough of the social benefits to justify the cost. Hence, it might be appropriate for the neighbors (or the government on behalf of the neighbors) to pay the homeowner a subsidy in an amount that is just enough to outweigh the costs to the homeowner but not so much as to exceed the external benefit to the neighbors. In such a situation, the positive externality would be fully internalized to the landowner.

Now turn to the cigarette example and the potential external benefit to nonsmokers of smokers' dying prematurely and leaving unconsumed pension, social security, and nursing home entitlements. Recall our earlier example of the consumer who values a pack of cigarettes at \$3.00 and who must decide whether to purchase the next pack of cigarettes faced with a nominal purchase price of \$2.00, which represents only the production and distribution costs of the product.³⁸⁷ Assume also that there are no health costs, or other external costs, to nonsmokers associated with smoking, but there are \$2.00 of pension "savings" to nonsmokers associated with each pack. From society's perspective, therefore, the \$2.00 is an extra benefit (just as the additional \$300 of value to the homeowner's neighbors in the landscaping example was a benefit). The problem, according to the positive externality story, is that the consumer experiences the \$2.00 transfer to nonsmokers as a personal cost to herself with no offsetting benefit (just as the homeowner experiences the extra \$300 of the landscaping cost as a cost with no offsetting personal benefit). Thus the consumer in the smoking example would inefficiently choose not to consume the pack of cigarettes. Why is that outcome inefficient? For the same reason it was inefficient for the homeowner not to make the landscaping investment: There are social gains that could be made. The suggested solution

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The customary arguments for ignoring transfer payments in assessing economic efficiency do not apply here. . . . In the usual case, transfer payments do not depend on the behavior of the consumer. Thus, they do not alter behavior unless the payment is large enough so that income effects are considerable. In the case of smoking, however, receiving the transfer depends on choices made by the consumer . . . . Suppose the government were to promise that everyone who reached age 70 would receive a million-dollar payment (transfer). It seems likely that many people would stop smoking (or never start) and engage in other less risky activities so that they might receive the "transfer." The ability to change one's activities to get the million-dollar bonus implies that it is not a pure transfer.

Id. at 27.

387. See *supra* text accompanying note 44.

of the economists to this problem is to subsidize the consumer (by paying her up to \$1 per pack) to induce her to purchase and consume the pack of cigarettes.

The problem with this argument is that the potential positive externality associated with smoking is importantly different from other positive externality situations, including the landscaping scenario. The difference is that, for all the reasons explained in Part II, smokers do not *experience* (or take into account) the lost pension, social security, and nursing home benefits as a \$2.00 per pack cost today.³⁸⁸ Either because they are optimistic with respect to those costs, because they apply an inappropriately high discount rate, or because they simply regard those costs as being zero (for example, expecting that they will be able to quit smoking and reverse the effects of their habit), it seems extremely unlikely that a consumer would take those costs into account when making the pack-by-pack decision regarding whether to smoke.³⁸⁹ If such costs are not taken into account, there is no positive externality.³⁹⁰

If consumers did take into account the forgone pension benefits associated with smoking, and if transaction costs were low, the market might produce a Coasean bargain that would achieve the efficient result. One mechanism

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388. If this particular efficiency argument were our only response to the positive externality story, we might be running some risk of double-counting the external costs of cigarettes, in the following sense. We argued *supra* Section II.C that the costs to the smokers themselves of dying prematurely, measured in terms of willingness to pay, should be internalized to cigarette companies and, through the price mechanism, to smokers because smokers do not otherwise fully take those costs into account, owing to imperfect information. That number, taken from the Manning et al. study, came to as much as \$5.00 per pack. See *supra* note 345 and accompanying text. It may be the case, however, that the \$5.00 figure includes the cost to smokers of forgone pension, social security, and nursing home entitlements. That is to say, that \$5.00 figure may represent, in per pack terms, what a consumer would be willing to pay to avoid losing the relevant number of years at the end of her life, *assuming she will receive all of her pension and other entitlements during those years*. If that was what those consumers were thinking when they made the choices that served as the basis for the \$5.00 figure, then an efficiency argument for offsetting with pension savings might be plausible. We do not know, however, what exactly that \$5.00 figure includes; we would not be surprised if the consumers whose behavior was the foundation for that number were not thinking about forgone pensions at the time. In any event, our other arguments in this section—especially those *infra* Subsection III.C.2.b.iv—are more than enough on their own to justify ignoring the pension savings.

389. The difference with the landscaping example, of course, is that the costs to the homeowner of getting the landscaping done are experienced fully by the homeowner at the same time as the benefit would be bestowed upon the neighbors. That is, in the landscaping example, there is no temporal separation of costs and benefits as there is in the cigarette setting. If there is any temporal separation, it would be in the opposite direction—the cost to the homeowner would be felt *before* rather than after the benefits were bestowed on the neighbors.

390. Although we have done only a casual investigation of the matter, no smoker to whom we have talked has given any indication of consciously perceiving that his or her pension and nursing home arrangements have influenced his or her smoking calculation. Moreover, in newspaper articles that we have seen purporting to measure the costs of smoking to *smokers*, the forgone pension and nursing home benefits are never included. See, e.g., Marino, *supra* note 372 (pointing out many of the obvious and not-so-obvious costs to smokers, but excluding entirely any mention of forgone benefits resulting from early death). The fact that the point we are here making has never before been made, together with the fact that Viscusi and Manning et al. focus mostly (though usually implicitly) on cross-subsidization issues, see MANNING ET AL., *supra* note 49, at 127; Viscusi, *supra* note 102, at 51, may be indirect evidence that people do not typically consider forgone pension and nursing home benefits as costs to be considered when deciding whether to take a risk.

through which such a Coasean bargain could in theory be achieved would be the labor market—specifically, the market for salary/pension packages. In theory, workers who plan to be long-term smokers could negotiate with their employers to receive more of their compensation in the form of up-front cash and less in the form of pension benefits. Hence smokers and nonsmokers would have different salary/pension packages. Interestingly, however, we do not see such distinctions in actual salary/pension packages. One reason that smokers do not attempt to negotiate such deals with their employers may be that they do not think about the effects of their smoking habit on their ability to claim pension entitlements.³⁹¹

Even if we were to assume for the moment that consumers do take into account the general mortality risk of each cigarette they smoke, we doubt that they take into account the accompanying forgone pension benefits. There is a fair amount of evidence suggesting that, broadly speaking, individuals tend to ignore or give less weight to costs that take the form of forgone benefits, even when those same individuals would take into account costs of equal present value that take the form of actual payouts.³⁹² This phenomenon is sometimes

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391. We do not wish to overstate our reliance on this sort of rough-and-ready empirical observation. There are obvious reasons, besides lack of consumer demand, for the absence of discrimination between smokers and nonsmokers in employment packages. For example, there might be severe moral hazard and adverse selection problems that prevent employers from making such distinctions. See Hanson & Logue, *The First-Party Insurance Externality*, *supra* note 40, at 148-51. There may be some reason to believe that the sort of market failures that prevent first-party insurers from reliably identifying smokers for the purpose of charging them *higher insurance premiums* will not pose as significant a problem to employers who seek to identify smokers for the purpose of “charging” them *lower pension contributions*. For instance, given that, for pension contribution purposes, smokers would stand to benefit from being identified as smokers, they would obviously have an incentive to divulge rather than to hide their status as smokers. The supply-side problem in this context, therefore, would be nonsmokers seeking, for pension purposes, to make themselves look like smokers. But smokers might be able to signal their status more reliably than nonsmokers. For example, given the addictive nature of cigarettes, if a smoker can demonstrate she is currently a smoker, she has provided a credible signal that she will continue to be a smoker; in the case of a nonsmoker, demonstrating that she is a nonsmoker at the time of her application for insurance suggests less about her likelihood in the future of remaining in that status. Also, if a person could show that she had a health condition that strongly correlates with smoking (such as emphysema or lung cancer), that showing would constitute good evidence of smoking status. Moreover, if supply-side rather than demand-side difficulties were responsible for the absence of smoking-based distinctions in compensation packages, it is a little curious that we have not heard stories of workers at least attempting to negotiate such packages with their employers. In the first-party insurance context, there is at least *some* attempt (albeit largely ineffective) to segregate smokers from nonsmokers, which suggests a demand on the part of nonsmokers for such a distinction. In sum, there is very little market evidence to suggest that smokers, under the current regime, give much thought to the possibility of negotiating more favorable pension arrangements with their employers.

If we shift to an enterprise liability regime, however, then once the full costs of cigarettes (including the costs to the smokers of their foreshortened lives) are impounded into the sale price of cigarettes, smokers may then be induced to give greater consideration to the possibility of negotiating more favorable pension arrangements with their employers. This might happen both because the rise in cigarette prices would make the issue more salient to smokers and because, for those who opt to continue smoking, the price increase might necessitate “borrowing” against future pension claims in order to help fund the higher cost of smoking.

392. See, e.g., Daniel Kahneman et al., *The Endowment Effect, Loss Aversion, and Status Quo Bias*, 5 J. ECON. PERSP. 193 (1991) [hereinafter Kahneman et al., *Status Quo Bias*]; Daniel Kahneman et al., *Experimental Tests of the Endowment Effect and the Coase Theorem*, 98 J. POL. ECON. 1325 (1990); Jack

called the "status quo bias."³⁹³ In light of this bias, it seems implausible that smokers would say to themselves: "I need to cut back on my smoking, lest I give up too much of the pension and nursing home benefits that I will enjoy if I don't smoke."

But perhaps the positive externality story is not an externality or efficiency argument at all. One could reasonably interpret both Viscusi and Manning et al. to be taking the following position: Regardless of whether the social benefits of smoking are externalized by smokers (that is, regardless of whether smokers' incentives are affected by the potential social savings attributable to their smoking habit), so long as cigarette smoking in the aggregate produces social benefits that exceed the social costs, there is no need for government intervention.³⁹⁴ Such an argument is not an efficiency argument, since it does not require cost internalization of any kind. Instead, it is a distributional argument. Smokers as a group enjoy the benefits of smoking, the argument goes, so they (as a group) should bear the costs of smoking as well. Therefore, so long as smokers transfer sufficient funds to nonsmokers (via unclaimed pension entitlements, for example) to offset whatever transfers go in the opposite direction (via insurance externalities and passive smoke), there is no distributional need for a regulation. That may be so.

The best justification for incentive-based regulation of cigarettes, however, is not the need for redistribution, but the need for improved efficiency through increased cost-internalization. Another way to put our response to the distributional argument is this: As with other normative economic analyses of accident law, we take as one uncontroversial objective of tort law, and of safety regulation generally, the minimization of the costs of accidents.³⁹⁵ As we explained in Section I.B, if there are market failures that give rise to care level and activity level inefficiencies, achieving the goal of minimizing accidents requires a regulatory response of some sort. Merely to determine that the aggregate costs of an activity are borne ultimately by the parties participating in the activity is, therefore, *not* a cost-minimizing response to the problem. So, for example, if we determined that all of the harms caused by automobiles were borne ultimately by the people who benefit from the existence of the automobile, such a finding would not be an efficiency

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L. Knetsch, *The Endowment Effect and Evidence of Nonreversible Indifference Curves*, 79 AM ECON REV 1277 (1989). See generally David Cohen & Jack L. Knetsch, *Judicial Choice and Disparities Between Measures of Economic Values*, 30 OSGOODE HALL L.J. 737 (1992) (summarizing experimental evidence indicating that people evaluate actual payouts and forgone gains differently and arguing that the law should and does take that difference into account).

393. E.g., Kahneman et al., *Status Quo Bias*, *supra* note 392.

394. See, e.g., Viscusi, *supra* note 102, at 92 ("A comprehensive assessment of these costs suggests that on balance, smokers do not cost society resources because of their smoking activities, but rather save society money."). We should note, however, that the economists seem confused about whether they are making a distributional argument or an efficiency argument. See, e.g., MANNING ET AL., *supra* note 49, at 19 ("Smokers are already paying their way, if we judge solely on the grounds of economic efficiency.")

395. See GUIDO CALABRESI, *THE COSTS OF ACCIDENTS* 26 (1970).

justification for abolishing tort law in this area or for eliminating auto safety standards more generally. Such a response, rather than reducing the costs of auto accidents, would likely increase those costs.

iii. *What About the Current Level of Excise Taxes?*

The economists, given their calculations of the external costs and benefits of smoking, conclude that current levels of federal and state excise taxes on cigarettes *more than* fully internalize any remaining external costs imposed by cigarettes.³⁹⁶ Indeed, they go so far as to imply that current levels of cigarette taxation are excessive, because cigarettes are socially beneficial on net.³⁹⁷ Therefore, they argue, imposing any additional incentive-based regulation would only worsen the overdeterrence problem.

We have several responses to that line of argument. The first and most obvious response is that, based on our recalculation of costs and benefits,³⁹⁸ current excise taxes appear to be drastically inadequate. According to Viscusi, the combined state and federal taxes on cigarettes total, on average, approximately \$0.53 per pack.³⁹⁹ And, as we indicated in Table 1, the external costs of cigarette smoking come in around \$7.00 per pack—roughly thirteen times the average combined federal and state tax rate.

It might be argued that because the excise tax *does* internalize *some* of the costs, any proposal to add further incentive-based regulation should take the existing level of deterrence into account. The argument initially seems appealing.⁴⁰⁰ Upon closer examination, however, the argument that future incentive-based regulation should be adjusted to take the current excise taxes into account seems flawed, for two general reasons. The first, which we will discuss more fully in Section IV.C, is that excise taxes are a less efficient form of incentive-based regulation than some other forms, such as enterprise liability. There is a strong argument that the more efficient approach should be adopted, and any overdeterrence that results from the presence of the inefficient excise tax is best remedied by removal of the redundant excise taxes.⁴⁰¹ The second reason that we are hesitant to adjust any new incentive-based regulation to account for current excise taxes is that those taxes may

396. See, e.g., MANNING ET AL., *supra* note 49, at 24 ("Taxes on cigarettes are at a level such that smokers pay approximately the costs they impose on others."); Viscusi, *supra* note 102, at 93 ("[C]igarette taxes already exceed the level of the estimated externalities.").

397. Cf. Viscusi, *supra* note 102, at 75 (arguing that, even without taxes, smokers more than pay their way).

398. See *supra* Table 1.

399. See Viscusi, *supra* note 102, at 57.

400. The deterrence objective of tort law would favor making adjustments to the level of tort damages in order not to overdeter. See Hanson & Logue, Tort Law in Context, *supra* note 40, at 8. There may be nondeterrence reasons such as insurance, however, not to adjust damages downward.

401. This argument seems especially strong in the current climate, when Congress is considering adopting a comprehensive regulatory strategy.

serve the purpose of internalizing a different set of costs than the ones we have been discussing in this part. Indeed, there is agreement even among economists that the current system of cigarette taxes was almost certainly not designed and calibrated to internalize the costs at issue here.⁴⁰²

So what is the function of cigarette taxes? One might contend that cigarette taxes are merely another source of government revenue, and a relatively efficient (that is, nondistortionary) revenue source at that given that consumer demand for cigarettes is relatively price inelastic compared to many other products.⁴⁰³ But demand inelasticity cannot fully explain why we have such a high level of excise taxes on cigarettes as compared to the taxes imposed on most other consumer products. There are many other products with low demand elasticity that we do not tax at nearly the level we tax cigarettes (for example, staple foods). In our view, one plausible explanation for the current level of excise taxes on cigarettes is suggested by the name commonly given to this type of excise tax: "sin tax." To put this idea in terms of cost internalization, sin taxes serve to internalize the psychic cost that nonsmokers (and perhaps some smokers) incur merely by living in a society where cigarettes—a nasty, unhealthy, strongly addictive, ultimately debilitating, and eventually life-shortening product—are marketed for profit and widely consumed not only by adults, but also by children.⁴⁰⁴ In any event, if the current sin taxes are meant to impose those costs on smokers and tobacco companies, then all of the external costs calculated above remain to be internalized.

Even under this theory, of course, part of the reason for society's disapproval of cigarettes may be the fact that smoking produces costs that smokers externalize to their future selves as well as to nonsmokers. Thus, current excise taxes on cigarettes probably do some of both things (some internalization of the external costs discussed in Section III.B and some internalization of the psychic or expressive harm just mentioned), but only in a very rough way. In any event, for reasons that we discuss in Section IV.C, there are efficiency reasons to use some other type of incentive-based regulation to internalize the external costs of smoking.

iv. *Morality and Social Norms*

We have focused on the economic responses to the positive externality

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402. See MANNING ET AL., *supra* note 49, at 18-22; Viscusi, *supra* note 102, at 54, 72

403. See *supra* note 254; see also, e.g., MANNING ET AL., *supra* note 49, at 24 ("[C]igarette taxes cause relatively less distortion and tax evasion behavior than other taxes.").

404. Cf. CASS R. SUNSTEIN, AFTER THE RIGHTS REVOLUTION 44 (1990) (explaining that legal rules can enhance social welfare by altering preferences in a way that "decreas[es] harmful behavior [such as smoking], remov[es] the secondary effects of those harms, and produc[es] more healthful and satisfying lives"); Rabin & Sugarman, *supra* note 28, at 12-13 (noting that many social norms condemn smoking)

argument because this Article is, after all, an attempt to make the economic case for incentive-based regulation of cigarettes. Because of the nature of the positive externality story, however, it is appropriate at least to suggest the possibility of equally powerful, and perhaps considerably more powerful, moral objections. To adopt the positive externality argument, on this view, would constitute a costly breach of social norms. Perhaps the most straightforward and compelling support for that claim is that the positive externality argument simply is not used (or at least is not taken seriously) in any other policy context. For example, in debates over the appropriate response to environmental hazards, we do not hear polluters urging policymakers to take into account the many pension-saving deaths that would result if Congress would only leave polluters unregulated. Likewise, opponents of gun control are not heard to tout the enormous financial windfall to society from all the premature deaths caused by handguns. And in no context other than smoking that we can identify do we hear calls for affirmative subsidies to promote the positive externality of premature death.⁴⁰⁵

Perhaps the most revealing societal rejection of the positive externality story can be found in tort law—specifically, in the calculation of damages in wrongful death cases. If the positive externality argument were fully implemented in such cases, one would expect to see tort damages being reduced by life insurance proceeds as well as by that portion of decedents' pension benefits that go to compensate plaintiffs' losses. That, however, is not the law. The collateral source rule has long forbidden courts from reducing tort damage awards by the amount of any payments that have already gone to compensate the plaintiffs' losses.⁴⁰⁶ What is perhaps more interesting, of the ten states that have recently altered the collateral source rule legislatively, all but one have drawn a distinction between health and disability insurance (with respect to which the collateral source rule has been repealed) and life insurance

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405. The economists' response to these observations might be that the activities mentioned would tend to end lives before individuals have reached an age at which they begin to consume more of society's resources than they produce. If, however, the only reason such proposals are not seriously considered is this "target-age problem," we would expect to see some empirical analyses by policymakers and scholars to determine what the optimal target age actually is. In addition, if retirement age did turn out to be the target age, we would expect to hear some discussion of subsidizing activities (or not penalizing activities) that tend to kill people in their post-retirement years. As far as we can tell, no such empirical investigations are done, and no such proposals are seriously made.

Another objection to the handgun example might be that it lacks the element of voluntary assumption of risk that exists in the cigarette context. We have two responses. First, we do not regard the cigarette context as one that involves a clear case of voluntary assumption of risk, for all the reasons discussed *supra* Part II. Second, even if voluntariness is present, we doubt that the positive externality argument would be acceptable. See *infra* text following note 414 (discussing an extreme example of "voluntary" mass suicide that seems patently objectionable).

Jeffrey Harris has made an argument very much like the one we make in this section. He compares the economists' arguments to opposing breast cancer research. See *Health Care Reform Hearings*, *supra* note 330, at 317 (statement of Jeffrey Harris). In his view, the positive externality argument is simply "not the kind of calculation that a civilized society engages in." *Id.* We agree.

406. See RESTATEMENT (SECOND) OF TORTS § 920A cmt. b (1965).

(with respect to which the collateral source rule has generally been maintained).⁴⁰⁷ Moreover, the American Law Institute in a recent report advocated the repeal of the collateral source rule in every context except life insurance.⁴⁰⁸ Likewise, a recent bill backed by the Clinton Administration proposed eliminating the collateral source rule in medical malpractice cases as the rule applies to disability insurance and health insurance, but not as it applies to life insurance.⁴⁰⁹

The extent to which tort law has rejected the assumptions underlying the positive externality argument can also be seen in wrongful death cases involving children.⁴¹⁰ If the logic of the positive externality story were applied strictly in such cases, the damage awards would typically be very small, or even negative, because the pecuniary costs to parents of raising children typically outweigh the pecuniary benefits. Indeed, in the late

407. The ten states are Arizona, Florida, Indiana, Michigan, Minnesota, New Jersey, New York, North Dakota, Ohio, and Oregon. Arizona is the one state that did not draw a distinction between health and disability insurance, on the one hand, and life insurance, on the other. See ARIZ. REV. STAT. ANN. § 12-565 (West Supp. 1996) (allowing evidence of payments from any collateral source, including life insurance, in medical malpractice actions). As for the other states, some statutes also repeal the collateral source rule as it applies to pension benefits or social security payments. See FLA. STAT. ANN. ch. 768.76 (Harrison 1994) (allowing evidence of payments from any collateral source other than life insurance benefits); IND. CODE § 34-4-36-2 (1996) (allowing evidence of payments from any collateral source other than life insurance, social security, and workers' compensation); MICH. COMP. LAWS § 600.6303 (1996) (same as Florida); MINN. STAT. ANN. § 548.36 (West 1988) (allowing evidence of payments from any collateral source other than life insurance, pensions, and social security); N.J. STAT. ANN. § 2A 15-97 (West Supp. 1997) (allowing evidence of payments from any collateral source other than life insurance and workers' compensation); N.Y. C.P.L.R. 4545 (McKinney 1992) (allowing evidence of payments from any collateral source other than life insurance, some social security, workers' compensation, or employee benefit programs); N.D. CENT. CODE § 32-03.2-06 (1996) (allowing evidence of payments from any collateral source other than life insurance, other death or retirement benefits, or any insurance or benefit purchased by the recovering party); OHIO REV. CODE ANN. § 2317.45 (Anderson Supp. 1996) (same as Florida); OR REV. STAT. § 18.580 (1995) (same as Minnesota); see also Gary T. Schwartz, *A National Health Care Program: What Its Effect Would Be on American Tort Law and Malpractice Law*, 79 CORNELL L. REV. 1339, 1345 (1994) ("Though many states in recent years have abrogated the collateral source rule, these abrogations have typically excluded life insurance.").

408. See 2 AMERICAN LAW INST., *supra* note 100, at 161, 165. Indeed, there seems to be almost no support for repealing the collateral source rule as it applies to life insurance proceeds. See, e.g., Jerry J. Phillips, *To Be or Not To Be: Reflections on Changing Our Tort System*, 46 MD. L. REV. 55, 58 (1986) ("Curiously, no one suggests that the collateral source rule should be eliminated with reference to life insurance proceeds, although clearly such proceeds are a collateral source in a wrongful death case.") Even the most extreme opponents of the collateral source rule make an exception for life insurance proceeds. See, e.g., 2 AMERICAN LAW INST., *supra* note 100, at 182 ("We recommend virtually complete reversal of the collateral source rule wherever such an approach is feasible. A plaintiff's tort recovery should be reduced by the amount of present and estimated future payments from all sources of collateral benefits *except life insurance*." (emphasis added)).

409. See S. 1757, 103d Cong. § 5305 (1993), cited in Schwartz, *supra* note 407, at 1345. See also Schwartz, *supra* note 407, at 1345-46 (suggesting that one explanation for maintaining the collateral source rule for life insurance is that "life insurance continues to be acquired in accordance with nineteenth-century norms," by which he means that life insurance, in contrast with health insurance, is far from universal and varies significantly from policy to policy).

410. Cf. VIVIANA A. ZELIZER, *PRICING THE PRICELESS CHILD* 138-68 (1985) (describing how the evolution of damage calculations in child wrongful death cases demonstrates the law's eventual rejection of the devaluation of children's lives); Croley & Hanson, *supra* note 22, at 1906-08 (using Zelizer's discussion of child wrongful death damages to illustrate society's acceptance of the idea that, in certain circumstances, quantifying pain-and-suffering damages is acceptable).

nineteenth and early twentieth centuries, the damage awards in such cases were calculated in just such a manner—by netting the pecuniary costs and benefits of raising children.⁴¹¹ Over time, however, as that traditional formula began to produce lower and lower awards, and as child labor laws increasingly removed children from the workplace, the law moved in the opposite direction, taking into account the nonpecuniary value of the lives of children. Indeed, tort awards for the wrongful death of children increased significantly after 1920, notwithstanding the declining pecuniary value of children during the same period.⁴¹² The relatively large damage awards in child wrongful death cases—large relative to the damages that would be awarded under the nineteenth-century formula—appear not to have abated (and perhaps have continued to increase),⁴¹³ a fact that strongly suggests society's rejection of the positive externality argument in the tort context.

The positive externality theorists might offer the following response: Subsidizing premature death to save on pension payments is not significantly different from what our society does in other contexts. For example, the market often pays premiums to compensate individuals for accepting unusually high levels of mortality risk. Furthermore, the government in some circumstances directly subsidizes the payment of such risk premiums. For example, some portion of the salaries paid to firefighters probably constitutes a premium for accepting the substantial risk of injury or death associated with performing their jobs. Similarly, soldiers who are exposed to combat conditions typically receive additional money in partial compensation for the special risks they bear for defending their country. So, the argument might go, if we can pay people in those contexts to take risks that, statistically speaking, shorten their lives, why is it unacceptable to pay people (through subsidized cigarette prices) to do the same thing by smoking?

The decision to smoke and the decision to accept a mortality-risk premium for undertaking a dangerous job, however, are different in important ways. For one thing, because of the information problems discussed in Part II, the payment of a smoking subsidy looks less like a well-informed, voluntary transaction than does the payment of a mortality-risk premium in connection

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411. See ZELIZER, *supra* note 410, at 142.

412. See *id.* at 153 ("By 1930, it was estimated that a typical family with an income of approximately \$2,500 per year would spend an average of \$7,425 to raise a child to age eighteen. . . . [T]he deceased child was a financial liability. . . . Yet, all evidence points to an *increase* in awards for children after the 1920s."). According to Zelizer, this trend reflected the increasing noneconomic or "sentimental" value of children. See *id.* at 153-54, 164-65.

413. We have uncovered no recent systematic studies on the size of wrongful death awards in cases involving deceased children. There are, however, numerous news accounts of extremely large jury awards in child wrongful death cases. See, e.g., Michael Bradford, *Largest Awards of 1995*, BUS. INS., Jan. 22, 1996, at 3 (reporting a \$500 million verdict in a wrongful death case in Tampa, Florida, involving the death of a nine-year-old boy); Maggie Mulvihill, *Couple Awarded \$23 Million for Baby's Wrongful Death*, BOSTON HERALD, Oct. 25, 1995, at 25 (reporting a \$23 million verdict in a wrongful death case in Connecticut involving the death of a couple's infant daughter).

with hazardous jobs. If, however, it could be demonstrated that individuals who enter into transactions involving "hazard pay" do not understand or fully take into account the mortality risks they assume by doing so, there would be an argument for regulating those transactions in some way—either through tort law, contract law, or direct regulation.

Even if we ignore the information problems and addiction problems associated with cigarettes, there still seems to be an important intuitive distinction in context between the typical employment transaction that involves a mortality-risk premium and a smoking subsidy.⁴¹⁴ Specifically, the decision to accept a mortality risk is part of a larger decision to accept a job, an independently productive endeavor. The decision to smoke, on the other hand, is pure consumption. In order to induce soldiers to accomplish a socially valuable task, we compensate them with combat pay for assuming a risk of death. With a smoking subsidy, by contrast, we would simply be paying people to die early. The latter seems objectionable in a way that the former does not.

Before we leave the positive externality argument behind, let us consider one final economic response to it. To the truly hard-core economist who remains unpersuaded by the arguments in the preceding section, we offer the following observation: As a matter of pure cost-benefit analysis, the economists seem to have overstated the size of the positive externality associated with smoking because they have ignored far less costly means of achieving their desired goal. The goal, starkly described, is to create the incentives necessary to induce a large group of people approaching retirement age to commit suicide so as to maximize the pension windfall to everyone else. Basic principles of cost-benefit analysis, then, require the adoption of the lowest cost means of achieving that goal. Even if we were to assume for the moment that the smoking decision is made "knowingly and voluntarily," there must be cheaper ways of inducing people to kill themselves than through the use of cigarettes.

One cheaper and more straightforward approach might be to offer a deal to all American citizens on their sixtieth birthday: If they will agree to commit suicide on their sixty-fifth birthday, their government will pay them an annual financial supplement to make the last five years of their lives especially pleasant and enjoyable. The only substantial costs would be the costs of

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414. Philosopher Elizabeth Anderson has written at length about the importance of social context in determining the appropriateness of including mortality risk in social cost-benefit analyses.

Because people's attitudes toward risk vary with the social context, cost-benefit analysts are not entitled to assume that the risk/money tradeoffs people make at work or in other market choices express how people think these tradeoffs should be made when they are involuntarily subjected to risks by the state or third parties, or when they are subjected to risks for the sake of achieving purposes they do not value.

ANDERSON, *supra* note 134, at 200. Likewise, just because we as a society may allow (or even encourage) the use of mortality-risk premiums in some contexts does not imply that we should subsidize cigarette smoking.

whatever means were chosen to accomplish the task and the payments necessary to induce some people to accept the deal. As long as those costs remained less than the pension, social security, and nursing home savings associated with killing people at age sixty-five, we would save money vis-à-vis the cigarette alternative, which poses enormous additional medical costs.

Obviously we are not recommending government-subsidized mass suicide as a way of economizing on resources. To the contrary, we believe that the so-called external benefits of premature death—for moral as well as economic reasons—should be excluded from the social cost-benefit calculus altogether. (Or at least we are unpersuaded by the economists' arguments that these benefits should be taken into account.) Our only point here is that, if such considerations *are* to be given weight (as the economists clearly believe), it is important that we do the cost-benefit analysis properly. Thus, even if the benefits of causing early death exceeded the external costs of cigarettes, choosing cigarettes as the means to achieve that goal would be economically unjustifiable.⁴¹⁵

D. *The Potential Internalizing Effects of Ex Post Incentive-Based Regulation*

How would an idealized ex post incentive-based system of regulation, such as enterprise liability, respond to the problems of negative externalities? For purposes of this analysis, we continue to assume away any difficulty in determining the causal connections between specific harms experienced by smokers and by third parties and the specific brands of cigarettes that cause those harms.⁴¹⁶ Given that assumption, an idealized incentive-based system could produce optimal deterrence—both in terms of manufacturer care levels and activity levels. For example, under enterprise liability, tobacco companies would be held liable ex post, either by a court or by a regulator, for all the harms caused by cigarettes. In addition, each manufacturer's ex post liability would reflect the harms caused by that manufacturer's brand. Ex post liability coupled with competitive market forces would give manufacturers incentives ex ante to make all optimal investments in reducing the risks posed by their

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415. We can illustrate this last point with a more traditional example of a positive externality: If we wanted to create the external benefit of safe shipping in an especially treacherous harbor, we would choose the least costly means of achieving that goal. Thus, we certainly would not spend \$400 on a computer navigation system that produced \$500 in safe-shipping benefits if we could generate the same benefits by spending only \$200 on a lighthouse. What is more, if we were for some reason to adopt the more expensive alternative—the computer navigation system—we could not say that we were saving society \$100 (the difference between \$500 and \$400). Instead, we would be costing society \$200 (the difference between \$400 and \$200).

416. We explore the implications of relaxing those assumptions *infra* Section V.A and compare how alternative forms of incentive-based regulation might deal with problems of causation. In addition, *infra* Section V.C we examine circumstances in which either ex ante incentive-based, performance-based, or command-and-control regulation would be necessary or at least useful as a supplement to ex post incentive-based regulation.

brands of cigarettes. And because cigarette prices would reflect not only their production costs but also their expected accident costs, something approaching the optimal quantity of cigarettes would be produced and consumed.⁴¹⁷

Moreover, because enterprise liability would place the full costs of smoking a particular pack of cigarettes upon the manufacturer of that brand and, in turn, upon the smokers of that brand, it would go a long way toward eliminating inefficient cross-subsidies within private and public first-party health, life, disability, and property insurance markets. Manufacturers would become quasi-insurers; in that capacity, they would charge more tailored premiums to cover the risks associated with their products. Under such a regime, nonsmokers would no longer subsidize the activities of cigarette manufacturers and smokers: Whereas there would be a substantial increase in cigarette prices (with all the beneficial deterrence effects just described),⁴¹⁸ there would also be a nearly commensurate reduction in premiums paid to public and private first-party health, life, disability, and property insurers.⁴¹⁹

To the extent such an idealized system of enterprise liability were able to take into account expected-cost differences across brands of cigarettes, there would be efficiency-enhancing segregation even within the population of smokers. Manufacturers whose cigarettes were relatively risky would charge higher "premiums" in the price of their brands to cover the greater liability costs, while manufacturers of relatively low-risk cigarettes would charge relatively lower premiums. Thus, whereas some private first-party insurers *try* in whatever rough way they can to segregate smokers from nonsmokers, an idealized system of enterprise liability would segregate and inform smokers further according to the type of cigarettes they smoke. Indeed, perfect enterprise liability would segregate smokers according to more than just the

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417. For a fuller treatment of this general argument, see Hanson & Logue, *The First-Party Insurance Externality*, *supra* note 40, at 187-88. Note also that once the inefficiencies in the cigarette market were corrected by enterprise liability, the related inefficiencies in the market for insurance, *see supra* note 268, would likewise be corrected. That is true because smoking risks would, in essence, be transferred out of the first-party insurance system and into the tort-law-qua-insurance system, in which there would be better segregation of smoking risks than currently exists.

418. We assume that the excise tax and the expected costs of tort liability would be reflected fully in consumer prices. This is a standard assumption in the literature on the incidence of excise taxes. *See, e.g.* MANNING ET AL., *supra* note 49, at 170 ("Empirical evidence suggests that excise tax increases are in fact passed on to smokers."); James M. Poterba, *Lifetime Incidence and the Distributional Burden of Excise Taxes*, 79 AM. ECON. REV. 325, 327 (1989).

419. With this particular system of incentive-based regulation, we imagine that at least some of those who suffer smoking-caused harms would continue to seek reimbursement initially from their first-party health, life, disability, and property insurers. In those cases, either the injured party or the insurer, who in most instances would be at least partially subrogated to the claims of the insured, would bring the tort suit against the relevant cigarette manufacturer. To the extent there is subrogation to the first-party insurer, the consumers' first-party premium would no longer need to reflect the risks of smoking. First-party insurance premiums, however, would probably include a surcharge to cover the insurers' litigation expenses and perhaps to cover the risk of judgment-proof defendants. In addition, under certain circumstances, we would expect that the insurer and insured, for deterrence and insurance reasons, might agree *not* to give full subrogation rights to the insurer. In that case, first-party premiums would rise to reflect this residual retention of smoking risks by the insurer.

type of cigarettes they smoke. It would also, for example, cause heavy smokers to pay higher premiums than casual smokers.⁴²⁰ And because the consumption of cigarettes is a "pay as you go" activity, high-risk consumers (in terms of activity levels) would contribute more to the tort-provided insurance pools than would low-risk smokers, even within a given brand of cigarette.

E. *Summary*

The large negative externalities produced by cigarettes, together with the consumer-information problems discussed in Part II (which can also be understood as a species of intrapersonal externality), create a *prima facie* case for adopting some type of regulation of cigarettes. What is the magnitude of these externality and information problems? In this part, we adopt the numbers derived from the economists themselves (albeit with some important changes in assumptions about whether some costs should be considered external or internal to the smoker's decision to buy the next pack of cigarettes) to arrive at a total external cost per pack of cigarettes of approximately \$7.00. Because we made no effort to arrive at our own calculation of the total costs and benefits of cigarette smoking, and because there were numerous external costs that were not included in this number (such as the large nonpecuniary costs to families and friends of smokers resulting from the smokers' years of suffering and their premature deaths), this \$7.00 figure must be kept in perspective. It is not even a rough estimate of the total external costs of smoking, much less a precise measure. Instead, it is meant only to indicate that, contrary to some economists' reports, there is a large and pressing need for regulation in the cigarette market.

Notwithstanding that the \$7.00 per pack figure may well understate the full external cost of a pack of cigarettes, we expect that the vast majority of our readers will find the \$7.00 per pack figure to be surprisingly high. That reaction serves, however, to confirm the principal claim made in this part and Part II—that consumers do not fully take into account the total costs posed by cigarettes. In the next part, we offer a theoretical framework for comparing, contrasting, and evaluating alternative regulatory responses to this failure in the cigarette market. We discuss the serious informational disadvantages of command-and-control, performance-based, and *ex ante* incentive-based regulation; and we describe the advantages of an *ex post* incentive-based regime. In addition, we provide a brief outline of a particular *ex post* incentive-

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420. This is true given the nature of cigarettes—nondurable products that must be purchased in greater quantities the more they are used.

based approach, which we call smokers' compensation and which is modeled loosely on the workers' compensation model.⁴²¹

IV. CHOOSING AMONG REGULATORY APPROACHES

In Parts II and III, we concluded that the cigarette market is characterized by significant market failures and is therefore very much in need of regulation. Along the way, we showed how one form of regulation—an idealized regime of enterprise liability—could counteract such market failures. Of course, in order to make a strong case for any particular regulatory approach, we must answer two further questions. First, are there other regulatory regimes that could serve to correct the market failures just as well as, or better than, enterprise liability? Second, might any real world factors cause our idealized enterprise liability regime to perform less well (especially as compared to alternative regulatory regimes)? This part provides a theoretical framework for answering the first question; in Part V, we take up the second.

As noted in Section I.B, some scholars divide regulatory approaches into three types: *command-and-control* regulation, *performance-based* regulation, and *incentive-based* regulation.⁴²² In this part, we further divide incentive-based regulation into two general types (ex ante and ex post), and we then divide ex post incentive-based regulation into two general types (victim-initiated and state-initiated).⁴²³ We argue that when it comes to certain product-market failures (especially those in the cigarette market), one type of

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421. One of the benefits of the ex post approach, as we show in the next part, is that making an ex ante calculation of the external costs of cigarettes—whether it be \$7.00 per pack or \$3.00 or \$10.00—is unnecessary. All of the costs of smoking are imposed on cigarette manufacturers ex post, and the market generates the right ex ante price increase or implicit tax. Thus, our smokers' compensation proposal does not require the use of this figure.

422. Our description of the different types of regulation draws heavily from the writings of Susan Rose-Ackerman. See, e.g., SUSAN ROSE-ACKERMAN, *RETHINKING THE PROGRESSIVE AGENDA: THE REFORM OF THE AMERICAN REGULATORY STATE* 19, 155-56 (1992) (discussing incentive-based regimes vis-à-vis command-and-control and performance-based forms of regulation). The distinctions we draw among the three types of regulation are not perfect and in some instances blur. Thus, some examples of command-and-control regulation begin to shade into performance-based regulation, while some examples of performance-based regulation begin to look like incentive-based regulation. See Cropper & Oates, *supra* note 38, at 699 ("[T]he dividing line between so-called [command-and-control] and incentive-based policies is not always clear."). It is probably more correct to understand the three categories of regulation as demarcating three points along a continuum, with command-and-control regulation at one end, incentive-based regulation at the other end, and performance-based regulation somewhere in between. Nevertheless, it is useful to maintain the conceptual distinctions among the three types of regulation in order to identify more distinctly the costs and benefits of moving in one direction or the other along the continuum.

423. As far as we can tell, Donald Wittman was the first to draw explicitly the distinction between ex ante and ex post regulation. See Donald Wittman, *Prior Regulation Versus Post Liability: The Choice Between Input and Output Monitoring*, 6 J. LEGAL STUD. 193, 193-95 (1977) (citing Gary S. Becker, *Crime and Punishment: An Economic Approach*, 76 J. POL. ECON. 169 (1968)). Steven Shavell also draws the distinction between ex ante and ex post regulation. See STEVEN SHAVELL, *ECONOMIC ANALYSIS OF ACCIDENT LAW* 277-82 (1987). In addition, Shavell draws a distinction between state-initiated and privately initiated regulation. See *id.* at 278, 283-84; Steven Shavell, *Liability for Harm Versus Regulation of Safety*, 13 J. LEGAL STUD. 357 (1984).

incentive-based regulation—victim-initiated ex post incentive-based regulation (of which enterprise liability is one type)—has substantial efficiency advantages over its alternatives.

A. *The Disadvantages of Command-and-Control Regulation*

Under command-and-control regulation, the regulator imposes specific requirements on the regulated firm. In the pollution context, for example, the command-and-control regulator might prescribe specific technologies that must be used by manufacturers to reduce the level of pollution emitted into the environment by their production processes.⁴²⁴ In the product safety context, the command-and-control regulator might require manufacturers to implement particular safety-related designs in the manufacture and distribution of their products.⁴²⁵

The command-and-control regulator must tell the manufacturer precisely what care level investments to make. Selecting the optimal level of care for a given product, however, would be a virtually impossible task for a regulator. This is because the question of what care level investments to make with respect to a given product is just one of a series of complex and interdependent questions of product design, manufacture, distribution, and marketing. To know, for example, how “safe” to make a product—that is, how much money to invest in making the product safer and how to spend that money—the regulator must know not only what safety improvements could be made to the existing product design, but also what design changes could be made to improve safety and how much safety would be enhanced by those changes. In addition, the regulator must know what those safety improvements or design changes would do to the demand for the product. She must know how much consumers would be willing to pay for the safety improvements and whether the additional consumer demand would exceed the costs of those improvements. That analysis would be especially difficult with respect to products that present long latency periods between initial exposure and the final manifestation of harm.

Essentially, then, to determine the optimal manufacturer care level for a given product, the regulator must construct supply and demand schedules for the product in question—indeed, for all the different designs of the product in question, including substitute products.⁴²⁶ Such an analysis would require

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424. See Hahn, *supra* note 38, at 95.

425. Command-and-control regulation is sometimes referred to as “input regulation.” Other non-cigarette examples of this type of regulation include requirements that manufacturers install scrubbers and other pollution abatement devices or that smokestacks be constructed to a given specification. See JOSEPH E. STIGLITZ, *ECONOMICS OF THE PUBLIC SECTOR* 226 (2d ed. 1988).

426. It turns out that choosing the proper care level requires all the same information as choosing the proper activity level. In a previous article, we made a similar observation in connection with the question whether a court in a products liability case can achieve optimal deterrence through an ex post negligence

regulators to have an enormous amount of information that they typically do not have at their disposal.⁴²⁷ With cigarettes, a command-and-control regulator would need to determine the exact safety-enhancing technologies (e.g., a reduced-carcinogen cigarette recipe) that the industry could use in making cigarettes as safe, and cost-justifiable, as possible. Such an analysis, however, would require the regulator to conduct complete marginal-cost-benefit analyses of every potential smoking technology at every level of cigarette production, taking into account, among other things, the overall effect of each technology on not only accident costs, including the costs of accident prevention, but also cigarette demand. Thus, command-and-control regulation, done properly, would require the regulator to evaluate both safety elements and aesthetic elements of cigarettes, such as taste.⁴²⁸

What complicates the analysis further is that, to construct a demand schedule for cigarettes, given the consumer information problems described in Part II, the regulator would not be able to use the same sort of information that might be used for other products. Smokers' revealed preferences through purchasing decisions, for example, may not be especially helpful to the regulator, given that smokers' consumption decisions are one of the sources of market failure in the first place. Moreover, even if the regulator were able to construct supply and demand schedules for cigarettes *once*, the regulator may be slow in updating its calculations from year to year. If so, once a given set of regulations were put into place and once manufacturers had responded to those regulations in their production decisions, there would be a strong disincentive for manufacturers to improve upon current technologies, at least until the regulators got around to updating their regulations.

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analysis that attempts to determine what precautionary measures a manufacturer would have taken. See Hanson & Logue, *The First-Party Insurance Externality*, *supra* note 40, at 169-70. Such determinations are arguably even more difficult when done *ex ante* rather than *ex post*. The framework of the current Article makes clear that the *ex post* cost-benefit analysis performed by a court in a tort suit is a type of *ex post* command-and-control regulation.

427. Furthermore, it is a type of analysis that we normally do not think regulators are competent to undertake. After all, our decision to adopt a market economy rather than a planned economy represents a recognition that, in selecting what products and services to make, how to make them, and what to charge for them, the market rather than the government is the preferred means of generating and sorting through all the relevant information regarding costs and benefits. Of course, it is market failures that have made us look to a regulator in the first place. As we argue *infra* Section IVD, however, for those who believe generally in the market's superior ability to generate and assimilate vast quantities of information regarding product and service supply and demand, the best means of correcting market failures is to find government responses that are tailored to the market failure in question and that, to the extent feasible, rely on the market rather than the regulator.

428. It is important to emphasize that the informational disadvantage of regulators would not be limited to manufacturer care levels. Given that the optimal activity level will depend on the care level chosen, if regulators cannot choose the most efficient technology, then they cannot determine the efficient activity level. (Other things being equal, the safer a manufacturer's technology is, the greater the manufacturer's efficient level of activity.) The information problem seems relevant to virtually all aspects of cigarette regulation, as past failed efforts to regulate the industry demonstrate. See *supra* note 9.

B. *The Disadvantages of Performance-Based Regulation*

Scholars and policymakers tend to prefer performance-based regulation to command-and-control regulation.⁴²⁹ The potential advantage of performance-based regulation is that it can create incentives for manufacturers to choose the best current technology at the time the regulation is implemented and to develop better technologies over time. For instance, a performance-based rule might, without specifying a particular technology to be used, prohibit cigarette manufacturers from making cigarettes that expose smokers to more than a given amount of nicotine or a given amount of carcinogens.⁴³⁰ Or a performance-based rule might require either that the number of underage smokers be reduced by a given percentage⁴³¹ or that the number of cigarette-caused deaths be brought down from 420,000 per year to, say, 50,000 per year.

As a means of enforcement, the regulator would then declare that failure to meet those performance requirements would result in drastic consequences for the manufacturers—for example, being shut down completely. The consequence of an ideal performance-based regime would be that manufacturers would, seeking to minimize their own costs, select the cheapest technological option for complying with the relevant performance goal. That many economists prefer performance-based regulations to command-and-control regulations is a consequence of those scholars' assumptions that manufacturers are better informed of their options and the costs and benefits of those options than regulators are.⁴³²

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429. See, e.g., BRUCE A. ACKERMAN & WILLIAM T. HASSLER, CLEAN COAL/DIRTY AIR 121-28 (1981) (arguing for greater reliance on "ends-oriented" environmental regulation and less on "means-oriented" regulation); OFFICE OF THE VICE PRESIDENT, IMPROVING REGULATORY SYSTEMS: ACCOMPANYING REPORT OF THE NATIONAL PERFORMANCE REVIEW 24 (1993) ("Performance standards are generally preferable to prescriptive or design standards because they give the regulated industry the flexibility to determine the best technology to meet established standards."); ROSE-ACKERMAN, *supra* note 422, at 19 (expressing preference for performance-based regulations if financial incentives to manufacturers cannot be implemented); STIGLITZ, *supra* note 425, at 226 ("What society is concerned with is the level of pollution, not how the pollution is produced. The firm is likely to know better than the government the best ways of reducing the level of pollution (how to reduce the level of pollution at least cost)."). Much of what goes by the name of incentive-based regulation would actually fall under our definition of performance-based regulation. For example, one commonly cited example of incentive-based regulation is marketable permits for pollution. In our framework, pollution permits would constitute a performance-based approach, given that such a system requires an initial determination of a maximum quantity of permissible pollution.

430. Cf. *infra* Subsection VI.D.2 (discussing performance-based standards in the tobacco settlement that call for FDA-imposed nicotine target levels).

431. Cf. *infra* Subsection VI.B.3 (discussing performance-based standards in the tobacco settlement that call for certain percentage reductions in the level of underage smoking by given target dates).

432. The following quotation from a popular textbook in public economics, written by one of the nation's most prominent economists, captures this conventional economic wisdom:

It is perhaps reasonable to assume that the government has a fair estimate of the marginal social costs associated with pollution. But it is likely that the government is not well informed about the technology of pollution abatement and control, at least not as well informed as are private firms. This is particularly true in those cases where the pollution control devices have not yet been developed. Neither side has very good information: both are simply making guesses, but since producers know more about the technology of their industries than does the government, their guesses are likely to be more accurate.

We agree with those assumptions of economists. It is not obvious, however, that performance-based regulation would avoid any of the problems of command-and-control regulation. For a regulator to set performance-based regulations that fully correct market failures, the regulator would need all the same information that is necessary to write fully efficient command-and-control regulations.

Imagine that a regulator, rather than telling cigarette manufacturers how to make their cigarettes (which would be a command-and-control approach), told them that they must reduce the level of nicotine and that they could do so in whatever manner they saw fit. Failure to achieve the goal, however, would result in a very serious penalty, such as the banning of cigarettes altogether. Such an approach would seem to have many of the benefits of a market-oriented or incentive-based approach. (Indeed, one might include performance-based regulation as a subset of market-oriented regulation.) But that appearance, at least from an economic perspective, is an illusion. The choice of the permissible level of nicotine itself—if done to achieve efficiency—has built into it the same elaborate cost-benefit calculation that is required in command-and-control regulation. How should the regulator choose the permissible level of nicotine (or of carcinogens or of smoking-caused deaths per year)? To reach an efficient number on any of those questions, and to reach the prior decision to choose those measures of performance instead of others, the regulator would have to include in her massive cost-benefit calculation not only all the costs (including expected health costs) associated with the different levels of nicotine, but also the costs of alternative designs that might have been plausible substitutes to nicotine-reduction as ways of reducing cigarette harms. In addition, the regulator would have to determine the aggregate value to consumers of smoking cigarettes with different levels of nicotine, taking into account all the other plausible cigarette-design alternatives.

In sum, under fully efficient performance-based regulation—as under command-and-control regulation—it would be necessary for the regulator to be able to construct demand-and-supply schedules for every conceivable alternative design of cigarettes. And to determine the answer to that question would require all the same information that a fully efficient command-and-control regime would require.⁴³³

This is not to say that there are *no* advantages of performance-based regulation over command-and-control regulation. If, for example, society

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STIGLITZ, *supra* note 425, at 230; *see also* Cropper & Oates, *supra* note 38, at 699-700 (explaining the cost savings possible with incentive-based policy in environmental regulation); Hahn, *supra* note 38, at 96-97 (discussing theoretical efficiency gains from the use of marketable permits for pollution)

433. Cf. Cropper & Oates, *supra* note 38, at 682 (noting that, "in a world of perfect knowledge," marketable emission permits, a form of performance-based regulation in our taxonomy, can replicate the efficiency benefits of a Pigouvian tax).

decided, for reasons not considered in the efficiency model being deployed here, that it wanted to reduce the number of children who are smoking to some *de minimis* amount,⁴³⁴ it might be useful to have a performance-based rule that imposed huge fines (or, better yet, banned all sales to adults as well) if the target level of underage smoking was not achieved. The additional layer of performance-based regulation on top of *ex ante* policing would have the following benefit: Given the political decision to eliminate underage smoking, the approach would allow manufacturers, rather than the regulator, to determine the most cost-effective way of achieving that goal.⁴³⁵

C. *The Disadvantages of Ex Ante Incentive-Based Regulation*

1. *The Informational Demands of an Ideal Pigouvian Tax*

Economists often contend that *ex ante* incentive-based regulation is superior to command-and-control regulation (and perhaps even superior to performance-based regulation) because, under such an incentive-based approach, the regulator needs less information to counteract the relevant market failures.⁴³⁶ Under this view, a regulator applying an incentive-based approach need not know the marginal costs to manufacturers of taking additional precautions. Instead, by forcing the manufacturers to take into account the full marginal social costs of *not* taking precautions (that is, the amount of the external cost), the manufacturer—who, by hypothesis, is better informed on this question—would decide whether the benefits of prevention exceeded the costs.⁴³⁷ In contrast to that conventional economic wisdom, however, we argue that, as between the idealized versions of incentive-based regulation (*ex ante* versus *ex post*), it is usually only the *ex post* version that has the oft-mentioned informational advantages over command-and-control and performance-based regimes. Given these informational advantages, *ex post* incentive-based regulation has both care level and activity level benefits over its *ex ante* counterpart.

What we call an *ex ante* incentive-based system, an economist would call a Pigouvian tax.⁴³⁸ Under a Pigouvian tax, the manufacturer is required to pay, on each unit of production, an amount just equal to the marginal external

434. Cf. *supra* note 204 (indicating that the case for parentalistic laws may be especially strong where consumers are children and the product is addictive).

435. For a discussion of how the performance-based provisions in the tobacco settlement agreement having to do with reducing underage smoking fall short of this ideal, see *infra* Subsection VI.B.3.b.

436. See, e.g., STIGLITZ, *supra* note 425, at 230.

437. This seems to be the conventional wisdom among economists. Joseph Stiglitz, for example, makes the point in connection with pollution regulation, comparing fines (an incentive-based system) to command-and-control or performance-based regulation: "The government need ascertain only the marginal social costs of pollution. Then the firms decide whether the costs of the pollution control devices exceed the benefits of the pollution control as measured by the penalties imposed for failing to control pollution." *Id.* at 230.

438. See, e.g., Cropper & Oates, *supra* note 38, at 680 (defining a Pigouvian tax).

cost that the unit causes *at the efficient level of output and at the efficient level of manufacturer care*.⁴³⁹ The difficulty that the Pigouvian tax presents to the regulator lies hidden in the choice of the optimal tax rate. For the regulator to arrive at the efficient tax rate, she must first determine what the efficient activity levels and care levels are.

Imagine how the regulator would determine what the optimal Pigouvian tax rate would be for cigarettes for a given year. It would almost certainly not be exactly \$7.00 per pack. At best, the \$7.00 per pack figure represents a very rough approximation of the *average* annual external cost of a pack of cigarettes *at roughly the current level of production and assuming essentially the current design* of cigarettes. For the Pigouvian regulator, however, that is the wrong number, even in theory.⁴⁴⁰

First, if the Pigouvian rate were chosen without taking into account the efficiently safe design, manufacturers would have no additional incentive to make safer cigarettes beyond that which exists in the absence of regulation. For example, if all manufacturers were charged the same per pack tax, there would be no incentive for manufacturers to improve safety. After all, smokers would have to pay the same tax regardless. By comparison, one could imagine a theoretical *ex ante* tax regime under which manufacturers would be charged not some flat, industry-wide tax but instead some amount commensurate with the level of safety of each manufacturer's individual cigarette design. So, for example, the manufacturer would have the burden of proving to the regulator each year how safe its cigarettes were. Such a finely tuned Pigouvian tax, if possible, could have a substantial corrective effect on manufacturer care levels. For such a regime to work, however, the regulator would need a great deal of information about the differing external costs associated with alternative safety designs.⁴⁴¹ Thus, to have such beneficial effects on manufacturer care levels, the regulator using the Pigouvian tax must have all the information necessary to determine what the efficient manufacturer care level is. That inquiry requires the Pigouvian regulator to have all the same information required by the command-and-control regulator.⁴⁴²

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439. See ROSEN, *supra* note 263, at 131-33. Rosen's definition of a Pigouvian tax focuses on the case of environmental pollution, and it focuses only on polluter activity levels, assuming away, for simplicity, the possibility of changing polluter care levels. See *id.* at 128 n.7 ("[T]his model assumes the only way to reduce pollution is to reduce output. If antipollution technology is available, it may be possible to maintain output and still reduce pollution. However, the analysis is basically the same, since the adoption of the technology requires the use of resources."). Because we are interested in both activity levels and manufacturer care levels, however, we take both into account in our definition of a Pigouvian tax.

440. As we argue *infra* note 579, even under our proposed *ex post* incentive-based regime, for reasons of political and administrative feasibility, the implicit tax would likely be much lower than \$7.00 per pack.

441. Such a system would also create incentives for manufacturers to deceive the regulator regarding the safety effects of their individual product designs.

442. In the next subsection, we discuss additional deterrence problems that are caused by a Pigouvian tax that does not differentiate among individual brands.

The activity level point is more subtle. To make the argument clear, assume away manufacturer care level issues for the moment; assume as well that cigarette designs are already as safe as they can possibly

In sum, with respect to the information that she needs to do her job, the ideal Pigouvian regulator is in essentially the same position as the ideal command-and-control regulator.⁴⁴³ Both need to know enough to do precisely that which we normally expect product markets to do for us—to produce the optimal product design at the welfare-maximizing price and quantity. All of this is not to say, however, that economists and others are wrong to prefer Pigouvian taxes and performance-based regulation to command-and-control regulation, or to prefer Pigouvian taxes over performance standards.⁴⁴⁴ If, for example, it were the case that monitoring tax compliance by manufacturers were easier than monitoring output compliance or care level compliance, then the Pigouvian approach might be the best alternative of the three. Alternatively, if we had some noneconomic reason for choosing a particular performance goal, then the choice of a performance standard could be defended on economic grounds.⁴⁴⁵ Finally, there may be occasions when neither the Pigouvian tax nor the performance standard is as useful as a command-and-control approach.⁴⁴⁶ Regardless, we argue in Section IV.D that in most

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be and that the external cost of a pack of cigarettes *still* turns out to be on average \$7.00 at the existing level of production, which is roughly 24 billion packs per year. Cf. *Tobacco Settlement Review: Hearings on the Tobacco Settlement and the Future of the Tobacco Industry*, 105th Cong. 5 (1997) (statement of Jeffrey E. Harris, Professor of Econ., Massachusetts Inst. of Tech.) (stating that the current level of annual cigarette production is 24 billion packs), available in 1997 WL 14150659 [hereinafter *Tobacco Settlement Hearings*]. In addition, assume (as most economists typically do when discussing analogous negative externalities, such as pollution) that the marginal social cost of cigarettes increases with output. Cf. ROSEN, *supra* note 263, at 127 (noting that he drew the marginal external cost curve in his supply-demand diagram sloping upward to reflect the assumption that as people are subjected to additional pollution they are harmed at an increasing rate). This assumption—that the tenth unit causes more harm than the first unit of production—may be as plausible with respect to cigarettes as it is with respect to pollution, though we have no independent confirmation of this. Under these assumptions, if a tax were imposed, some of the cost of the tax would be passed through to consumers. This would, assuming less than perfectly price-inelastic demand for cigarettes, result in a reduction in the quantity of cigarettes demanded and produced. That reduction in quantity, under current assumptions, would cause the external costs of cigarettes to fall. Thus, given that the tax would remain at \$7.00, there would actually be too little smoking.

The intuition behind this point is simple enough. If cigarettes become relatively less harmful when the quantity declines, then as production shrinks in response to the initial Pigouvian tax, there should be an adjustment to the tax. Failure to anticipate that reaction in advance and to adjust the tax rate downward accordingly would produce too much deterrence in terms of activity levels and too little smoking. If a Pigouvian regulator wanted to anticipate all of these market reactions and choose a theoretically ideal tax rate up front, she would need all the information that was required by the idealized command-and-control regulator.

443. Economists seem to recognize the practical difficulty in choosing the optimal Pigouvian tax, but they also seem to believe that the necessary concessions to practicality are less with such a tax than with other forms of regulation. See, e.g., ROSEN, *supra* note 263, at 100 (“There are practical problems in implementing a Pigouvian tax scheme. In light of the . . . difficulties in estimating the marginal damage function, it is bound to be hard to find the correct tax rate. Still, sensible compromises can be made.”).

444. A number of noneconomists have called for increased use of incentive-based regulation. See, e.g., CHARLES SCHULTZE, *THE PUBLIC USE OF PRIVATE INTEREST* 57 (1977) (arguing for greater use of “injury-rate taxes” and other “incentive-oriented” approaches, in place of existing “specific regulations”); SUNSTEIN, *supra* note 404, at 109 (calling for “market-oriented” and “incentive-based” approaches to environmental and workplace safety regulation, including the possibility of a “tax” on employers for workplace risks).

445. See *supra* notes 434–435 and accompanying text.

446. It is sometimes argued that command-and-control regulation is superior to performance-based regulation where inputs are more easily monitored than outputs. See, e.g., STIGLITZ, *supra* note 425, at 226

situations—and especially in the cigarette context—an ex post incentive-based approach is preferable to any of the other three regulatory alternatives.⁴⁴⁷ The main reason is that ex post regulation requires less information on the part of the regulator, because it relies instead on manufacturers and the product market to make decisions about costs and benefits.

2. *Additional Deterrence Problems with Current Excise Taxes:
The Unraveling Effect and Errors of Omission and Commission*

In the preceding subsections, we noted that an ideal Pigouvian regulator would impose an ex ante tax on each cigarette manufacturer equal to the expected external cost of that manufacturer's brand of cigarettes. As cigarette taxes are currently designed, however, all manufacturers are taxed the same amount per pack regardless of the specific risks posed by their particular brands.⁴⁴⁸ Even if we were to assume that current cigarette taxes reflect the average external costs of smoking (which they almost certainly do not), and even if we were to assume that future cigarette taxes would be changed to reflect changes in the *average* external cost per pack of cigarettes (which is also unlikely to happen), an excise tax presents significant deterrence problems, both in manufacturer care levels and activity levels.⁴⁴⁹

The manufacturer care level problem would result from the fact that manufacturers would have less than optimal incentives to make investments in cigarette safety: They would reap little of the competitive benefit of making such investments because they would continue to pay the same excise tax as their competitors.⁴⁵⁰ Thus there would be an "unraveling" effect of sorts with

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(suggesting that in some cases monitoring manufacturers' inputs, such as their use of scrubbers in smokestacks, may be easier than monitoring the level of pollution emitted by each manufacturer). Wittman, *supra* note 423, at 196-97. The argument has some plausibility. For example, if the regulator knew that adding at least one scrubber to a smokestack generally was a cost-effective means of reducing pollution, but the regulator for some reason could not easily monitor the level of pollution being emitted by any particular manufacturer, the optimal response might be to require all manufacturers to install at least one scrubber. Even in the situation just described, however, the command-and-control regulator would have to know a great deal about the overall external costs caused by the manufacturer's product when consumed (or, in the case of pollution, in the manufacturer's production process) to be able to make a sound judgment.

447. We also observe, however, that one or more of those approaches might be a useful supplement to the ex post incentive-based regulation of cigarettes.

448. The same can be said of proposals in recent years to increase the federal excise taxes on cigarettes. See Gary S. Becker & Michael Grossman, *The Senate's Health Care Follies And Cigarette Revenues up in Smoke*, WALL ST. J., Aug. 9, 1994, at A12 (discussing proposed increases in cigarette taxes to help fund health care reform).

449. As we noted above, *see supra* note 402 and accompanying text, cigarette taxes are in fact set without any regard to the expected external costs of cigarette smoking. Instead, they are the result primarily of revenue-raising objectives. *See supra* text accompanying note 403. To the extent that there is variation in tax rates, it is across states, not brands. *See MANNING ET AL.*, *supra* note 49, at 170.

450. There would be some competitive benefit from making safety investments, insofar as consumers are uninsured and accurately perceive and process the differences among cigarette brands in terms of safety characteristics. In our view, however, because of the consumer information problems discussed *supra* Part II, this effect would be small.

respect to manufacturer care levels.⁴⁵¹ Competitive forces—that is, smokers' demand for, all else being equal, the cheapest available cigarettes—would induce manufacturers to lower the overall price of their cigarettes by cutting back on investments in safety, cutbacks that (we are assuming) consumers would not perceive.⁴⁵² Thus cigarette manufacturer care levels would be suboptimal.⁴⁵³

The activity level inefficiency is a bit more subtle. Assume for the moment that manufacturer care levels are not an issue so that we can focus on the activity level effects of the excise tax. In a world with an excise tax on cigarettes that is computed on the basis of their average risk, activity levels (the number of cigarettes produced and consumed) may be, on average, roughly optimal. Nevertheless, there would be welfare losses because some individual consumers, compared with their perfectly informed selves, would be smoking too much and some too little. These are the same kinds of welfare losses that would occur in the absence of such an excise tax, if it were true that consumers (on average, but not individually) accurately perceived the risks of cigarettes.⁴⁵⁴

The problem with the excise tax solution is that consumers facing a higher price would adjust their consumption decisions to reflect their own estimates of risk given that they would not expect to be compensated by the manufacturer for any harms that materialized. Their individualized risk assessments would lead them to continue making errors of commission and omission.

Nonetheless, even the imperfect excise tax takes us closer to efficiency than no excise tax at all (assuming, of course, that some superior ex post incentive-based system is not an available policy option). If manufacturer care

451. For discussion of how ex post incentive-based regulation responds to the unraveling problem, see *infra* Subsection IV.D.3.

452. The discussion *supra* Part II regarding consumer information problems provides support for our assumption that these cutbacks would not be perceived by consumers. Cf. Hanson & Logue, *The First-Party Insurance Externality*, *supra* note 40, at 176-77 (describing unraveling of manufacturer care levels under circumstances of imperfect consumer information and imperfect insurance in the absence of excise taxes).

453. This is the same species of problem that we discussed *supra* Subsection II.B.2 regarding the problems of imperfect brand-specific information. Any time the incentive structure is not tailored to specific manufacturers and specific brands, the incentive structure will be flawed in this way. Even economists and policymakers who have recognized this unraveling problem with respect to markets and consumer information have failed to recognize the numerous alternative ways in which other market and regulatory mechanisms can lead to the same unraveling effect. As we describe below, see *infra* text accompanying notes 641, 709-713, there are a number of ways in which the proposed national settlement reflects this failure.

Interestingly, even the economists who support using excise taxes on cigarettes (at least as a "component of a package of policy measures directed at discouraging smoking by children," Warner et al., *supra* note 28, at 385) acknowledge that "[t]axation is a rather blunt instrument" and that higher cigarette taxes might "encourage smokers to switch from higher priced branded cigarettes to lower priced (and often higher tar and nicotine) generic and discounted brands, thereby possibly increasing smokers' exposure to the toxic substances in cigarette smoke," *id.* at 385-86 (citation omitted).

454. Those welfare losses are sometimes referred to as errors of omission and commission. See Hanson & Logue, *The First-Party Insurance Externality*, *supra* note 40, at 177-79.

levels unravel, the amount of the tax would rise; thus, the nominal price of cigarettes would rise, which would cause a reduction in the aggregate amount of smoking. Although in this scenario there would still be welfare losses from errors of omission and commission, the aggregate activity levels may be closer to the optimal levels than if no tax were imposed.

D. *The Advantages of Ex Post Incentive-Based Regulation*

1. *The Reduction of Information Problems*

In contrast to any of the previously discussed forms of regulation, under an idealized ex post incentive-based system (such as an idealized enterprise liability regime), the regulator would not need to know anything, ex ante, about the product's supply and demand curves. Instead, the regulator would simply commit to charging the manufacturer, ex post, for any costs that the product winds up causing. It would therefore be the *manufacturer* that would make the ex ante expected cost calculation, and it would be the manufacturer (and the product market) that would determine, ex ante, optimal product design (including safety considerations) and optimal quantity. Thus, under an ex post incentive-based system of cigarette regulation, the cigarette manufacturers would, ex ante, take into account the fact that, ex post, they would be held liable for any costs caused by their products.⁴⁵⁵ They would build those assumed costs into their design, production, and pricing decisions. Once an equilibrium was reached in the market, the optimal quantity of cigarettes would be sold at the optimal level of safety.⁴⁵⁶

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455. It should be clear that an ex post incentive-based regime does not entail any determination as to the reasonableness of manufacturers' conduct. It is, in other words, a no-fault system. By contrast, a tort regime that relied on fault-based principles of "reasonableness" and the like would, under our taxonomy, be considered an ex post command-and-control regime.

456. Cf. SHAVELL, *supra* note 423, at 52-54 (arguing that, under certain assumptions, strict liability with a defense of contributory negligence could lead to optimal activity levels and care levels in the product market). In addition, because the price of cigarettes would reflect their full costs and because consumers would anticipate being compensated ex post for cigarette-caused harms, there would be no welfare losses associated with errors of omission and commission.

Some readers might be tempted to argue that an ex post system of regulation would be more expensive than an ex ante system because the ex post regulator would have to identify and measure the harms that the product actually caused. That argument, however, is a red herring. Any form of regulation that seeks to internalize costs must measure actual damages. To argue otherwise is to misunderstand the idea of internalizing costs. The real difference, as stated in the text, is this: Under ex ante regulation (whether it be command-and-control, performance-based, or incentive-based), the regulator would have to estimate the *future* costs and benefits of the product, in all of its various alternative designs. Thus, in addition to examining the costs as they occur today in making that estimation, the regulator would have to examine how those costs were likely to change in the future. The regulator, therefore, would attempt to measure the influence of a variety of mutable factors, including the product design, the consumer mix, the medical system's ability to reduce or eliminate the threat of harm, the industry's ability to offer a safe and viable cigarette substitute, and so on. Over a latency period of 25 to 60 years, such estimations would be extremely speculative. Under an ex post approach, by contrast, the regulator would not need to make such an estimate. Instead, the manufacturer would make the estimate. The regulator would have to ascertain only the harm caused by the product after it had occurred.

Not only would ex post incentive-based regulation use the manufacturer's grasp of existing information to guide production decisions, it would also encourage the production of more information. Some commentators argue that under command-and-control regulation (and perhaps under performance-based regulation), manufacturers have an incentive to conceal information about the harmfulness of their products or about potential technologies for improving their products' safety.⁴⁵⁷ Ex post incentive-based systems respond to those types of problems. Under an ex post incentive-based regime, manufacturers would use all the information they have. Moreover, because manufacturers would have to pay for cigarette-caused harms once they occur, manufacturers would learn something about the probability and magnitude of those harms *as a result of* the process of regulation itself.

There is yet another information problem that ex post incentive-based regulation reduces: Under an ex ante system of regulation, manufacturers would have an incentive to convince regulators and consumers that the risks of their products were lower than they truly were. By doing so, they could lower the perceived costs of their products and benefit from a lower Pigouvian tax rate.⁴⁵⁸ Under an ex post regime, in contrast, the manufacturer would not escape paying those costs, no matter what regulators and consumers were led to believe ex ante. Thus, manufacturers would have no reason to convince regulators or consumers to be optimistic under an ex post regime. Cigarette manufacturers under an ex post incentive-based scheme would, in essence, be *bonded*.⁴⁵⁹

2. *The Reduction of Overdeterrence Problems When Information Varies Across Consumers*

Another significant advantage that idealized ex post incentive-based regulation has over idealized ex ante incentive-based regulation stems from the possibility that some consumers may be better informed than others. Economists typically assume that consumers are homogenous with respect to information levels. So, for example, Viscusi premises his policy

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457. See, e.g., STIGLITZ, *supra* note 425, at 230 (arguing that under direct regulation, private producers "have every reason to try to persuade the government that the technology for pollution abatement will be extremely hard to develop, so that it will be impossible to satisfy stringent regulations").

458. It might be argued that regulators could simply ignore the information provided by manufacturers regarding product risks under an ex ante regime. Such a policy would come at a cost, however, because manufacturers, as we have repeatedly argued, are typically better informed about their own products than regulators are.

459. Cf. Croley & Hanson, *Enterprise Liability*, *supra* note 40, at 786-92 (explaining the informational benefits of bonding in the products liability context). Of course, an ex post approach may not eliminate the information problem with respect to questions of causation or damages. Manufacturers would be able to lower their costs if they could persuade regulators that their products caused fewer harms than they actually did. That problem, however, would exist for any type of regulation that seeks to correct the market. *But see infra* Subsection V.A.2.a (describing how an ex post incentive-based system could be employed to overcome the causation problem).

recommendations largely on consumers' *average* estimates of risk,⁴⁶⁰ even though his own evidence shows that some people underestimate risks.⁴⁶¹ Viscusi would have to concede that his policy recommendations would be inefficient with respect to such optimistic consumers. If one takes seriously the possibility that consumers are heterogeneous with respect to information levels, therefore, the question of which specific type of incentive-based regulation is adopted becomes very important.

If the quality of information varies across consumers, any *ex ante* form of incentive-based regulation, such as a Pigouvian tax, would create a problem of either *overdeterrence* or *underdeterrence*. To understand this point, it is necessary to distinguish between two categories of *ex ante* incentive-based regulation, based on who receives the proceeds of the tax (or charge or fine) that is collected *ex ante*. In one category, the potential victims would receive the proceeds, based on the *ex ante* risks they face. We call this category "victim-initiated *ex ante* incentive-based regulation."⁴⁶² One can imagine a regime in which consumers, after buying their cigarettes, submit to the regulator all receipts (or empty packs) for cigarettes purchased; and then, before any injury occurs, they receive a rebate equal to their per pack share of the tax collected.⁴⁶³ Although such a regime would raise the nominal retail price of cigarettes, it would fail to have any effect on consumers' consumption choices. The rebate would lower the price that consumers would have to pay for cigarettes; the consumers, in making their decisions, would be responsive only to the price net of the rebate. Optimistic consumers would continue to behave optimistically, leading to an underdeterrence problem, while those consumers who accurately measure or overestimate the risks of cigarettes would continue to do so. As to those latter consumers, there would be no deterrence benefits from this *ex ante* incentive-based system.

Now consider the effects of a different *ex ante* incentive-based system, one in which the proceeds from the tax are paid to someone other than the potential victims—most likely the state. Under such a state-initiated regime, consumers who correctly estimate or overestimate the risks of cigarettes would be overdeterred—or doubly deterred—from smoking. Not only would those consumers pay the additional price to cover the *ex ante* tax charged to manufacturers, but they would also continue to take into account their own risk estimates of smoking because they would still fully bear those costs *ex post*.

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460. See, e.g., Viscusi, *supra* note 102, at 70 (assessing how well consumers are informed on average), *id.* at 92-93 (concluding that higher cigarette taxes would be inappropriate, in part because most smokers overestimate the risks of smoking).

461. See VISCUSI, *supra* note 49, at 124 & tbl.6-3

462. Cf. SHAVELL, *supra* note 423, at 283-84 (discussing the tradeoffs between "privately initiated" versus "state initiated" approaches to regulation).

463. Such a system might operate very much like a bottle deposit system

Thus only consumers who were purely optimistic (and thus who assume cigarettes are riskless) would be optimally deterred from smoking.⁴⁶⁴

This type of overdeterrence problem, coupled with an overly narrow focus on ex ante incentive-based regulation, appears to be one of the main reasons that economists who have studied cigarettes have not called for increased efforts to internalize costs.⁴⁶⁵ Those economists start with the assumption that a large fraction of consumers are, even in the absence of any regulatory intervention, already deterred or overdeterred regarding smoking risks (at least with respect to those risks that are not externalized to third parties), because those consumers are well-informed of or actually overestimate those risks.⁴⁶⁶ Then the economists focus their analysis on only a single regulatory policy tool, the excise tax,⁴⁶⁷ which is a very crude form of ex ante incentive-based regulation. That approach creates the potential for overdeterrence, a possibility that apparently motivates Viscusi and others to oppose the idea of internalizing the negative externalities of smoking through higher excise taxes.⁴⁶⁸

What those scholars seem to have overlooked, however, is that some forms of ex post incentive-based regulation (namely, victim-initiated regimes) are less

464. The effect would not quite be that of double taxation, however, because the amount of the implicit tax, averaged across all smokers, would be somewhat less than the explicit tax imposed by the regulator. This is because the tax imposed by the regulator would include negative external costs not borne by smokers (for example, ETS costs) as well as the costs they do bear, and the implicit tax felt by the smoker would not (unless we were to assume, wildly unrealistically, that consumers for some reason fully internalize all costs they impose on others).

465. See, e.g., MANNING ET AL., *supra* note 49, at 19 (concluding that the current level of cigarette taxes is adequate or even excessive); Viscusi, *supra* note 102, at 92 (same). The other main reason, discussed earlier in the Article, is that economists working in this area have concluded that cigarettes, on net, do not create negative externalities. See *supra* Subsection III.C.1.

466. See *supra* Section II.A (discussing Viscusi's argument that consumers are well-informed of the risks of smoking).

467. In the recent studies by economists of cigarette-caused negative externalities, the only policy option that has seriously been considered is an excise tax. See MANNING ET AL., *supra* note 49, at app. F; see also GRAVELLE & ZIMMERMAN, *supra* note 298, *passim*; VISCUSI, *supra* note 49, at 106-09; Viscusi, *supra* note 102, *passim*; Warner et al., *supra* note 28, *passim*. For a discussion of the historical development of cigarette taxes, and a description of the changing magnitude of those taxes over time, see MANNING ET AL., *supra* note 49, at app. F. One can imagine a number of other plausible policy options, such as (1) a complete ban on cigarette production and consumption; (2) a ban on cigarette smoking in public places; (3) increased use of warnings and negative advertising; or (4) direct regulation by the FDA. Except in connection with ETS (where limited smoking bans have been tried), the excise tax on cigarettes is the only policy option that has been used or studied to any significant degree.

468. For example, when Viscusi addresses the topic of cigarette taxes, he describes such taxes as substitutes for, or alternatives to, increasing consumers' perceptions of the risks of smoking. See W. Kip Viscusi, *Promoting Smokers' Welfare with Responsible Taxation*, 47 NAT'L TAX J. 547, 554 (1994); see also Viscusi, *supra* note 102, at 54-57. Even those economists who have called for some increase in tobacco taxes have done so only in situations where overdeterrence problems are not likely to be present (such as with smoking among children), seemingly giving no consideration to the possibility of using other incentive-based systems besides excise taxes as a means of internalizing the external costs of smoking. See, e.g., Warner et al., *supra* note 28, at 385-86 (arguing that increased excise tax on cigarettes may be appropriate as means of discouraging children from starting to smoke, but not mentioning the possibility of using tort liability to the same effect).

If we allow for the possibility of imperfect information, the problem of overdeterrence under a tax regime diminishes: If consumers do not perceive the risks of smoking, they will not add their implicit premium to the price of cigarettes.

susceptible to the problem of overdeterrence. Under an ideal ex post incentive-based regime, for example, smokers would internalize the costs of cigarettes once when they purchased the cigarettes, as the nominal price of the cigarettes would rise to reflect their full expected costs. Smokers would not, however, count those costs fully a second time by adding to the nominal price of cigarettes their own estimate of the expected monetary harm to themselves of smoking, because they could expect to be compensated for that harm ex post via tort damages.⁴⁶⁹

Even under such a regime, there could be some overdeterrence, depending upon what damages are included in the ex post awards, but less overdeterrence than with an excise tax. Overdeterrence under enterprise liability would occur to the extent smokers themselves anticipate dying before having a chance to collect their ex post awards. One cost of cigarette smoking that would, ideally, be internalized to manufacturers and thereby into the price of cigarettes is some willingness-to-pay measure of the value of the lost years of the smoker's life. To the extent smokers fully appreciate the risks of smoking (including the risk of a shortened life) and fully take those risks into account in deciding whether and how much to smoke, however, adding a tort premium for the risk of a shortened life could produce overdeterrence, since the smokers themselves will not be around to enjoy that portion of the award.

There are a number of reasons, however, that this type of overdeterrence would be relatively small compared to the overdeterrence associated with an excise tax. The overdeterrence that stems from smokers' dying before receiving their award would exist with the excise tax as well.⁴⁷⁰ With respect to the rest of the harms of smoking, however, enterprise liability would produce significantly less overdeterrence. Smokers could expect to receive reimbursement for at least some of those costs ex post in the form of a tort judgment *during their lifetimes*. Such costs include the smoking-related medical costs borne by smokers, all of the lost income to smokers due to smoking-caused disability, and all of the pain and suffering experienced by smokers during their lifetimes as a result of cigarette smoking. In contrast, with an excise tax, no ex post reimbursement for those costs can be expected, and thus all of those costs would contribute to overdeterrence.⁴⁷¹

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469. We are assuming that consumers are aware of the strict liability rule

470. Even overdeterrence stemming from the cost to the smoker of dying early would be mitigated to some extent. Recall that we are currently assuming perfectly informed smokers. Under an enterprise liability regime, those kinds of smokers could take steps to reduce the amount of overdeterrence. For example, since they can expect to live shorter lives, they might decide to reduce their level of savings, which would provide them with more money during their smoking lifetimes to help offset the increased price of cigarettes. Or they might be able to reduce their life insurance coverage since the shortfall would be covered by the tort awards. Or perhaps long-term smokers who could demonstrate that they already had a serious smoking-related illness might be able to borrow against their future tort awards. Although none of those approaches would fully offset the overdeterrence problem, they might significantly reduce it

471. None of the costs that are borne by third parties would produce overdeterrence under either regime, if smokers did not take them into account. Economists typically assume that at least some of those

It bears reemphasizing that any concern with overdeterrence exists *only* insofar as there are smokers who are informed and who make rational decisions regarding the long-term effects of smoking on their life spans. As we argued in Part II, there are many reasons to doubt that smokers, in making decisions about whether to smoke the next pack, behave with such a degree of foresight. In addition, if, for reasons of administrative cost or political necessity, ex post incentive-based awards were limited to purely economic losses, the overdeterrence problem would be reduced.

3. *The Prevention of Unraveling*

An idealized enterprise liability regime (or some other idealized ex post incentive-based regulatory mechanism) would, in theory, move us closer to optimality with respect to cigarette-caused harms than the current and proposed versions of a cigarette excise tax would. Under an idealized ex post regime, manufacturers would have improved care level incentives because they would benefit directly through increased sales from efficient reductions in the expected costs (and hence the prices) of their own individual brands.⁴⁷² Moreover, the activity level inefficiencies would be corrected as well, inasmuch as the price of each pack of cigarettes would adjust to reflect that pack's full expected cost.⁴⁷³ Thus, an idealized enterprise liability would be a superior deterrent to a regime of excise taxes, even without considering double-deterrence concerns.

E. *The Advantages of Victim-Initiated over State-Initiated Ex Post Incentive-Based Regulation*

Enterprise liability is one example of a *victim*-initiated ex post incentive-based system of product regulation. But what would a *state*-initiated ex post system look like? Perhaps it would be a fine imposed ex post on cigarette manufacturers for harms caused by past smoking; for example, a Pigouvian tax whose amount was determined ex post rather than ex ante. Or perhaps it would

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costs will be treated as internal to the smoker. We explained *supra* Subsection III.C.2.a.i why that is a highly questionable (and, in any event, largely undefended) assumption and that in the cigarette setting the reverse assumption is usually more realistic.

472. Thus, manufacturers would effectively be bonded, creating an incentive to produce truly safer cigarettes. See Croley & Hanson, *Enterprise Liability*, *supra* note 40, at 786-92; see also *supra* text accompanying note 459.

473. The price of cigarettes would, under idealized enterprise liability, "inform" the consumer of the risks posed by the brand of cigarette she was purchasing. See Hanson & Logue, *The First-Party Insurance Externality*, *supra* note 40, at 175. More precisely, under such a regime, because consumers would be fully compensated for the risks of smoking, they would not need to make their own individual assessments of those risks. An excise tax, however, does not have the same effect. Because consumers will not be compensated ex post, they must make assessments of risk ex ante and therefore, in addition to paying the excise tax, may suffer from errors of omission and commission.

be a lawsuit (much like the state attorneys general lawsuits)⁴⁷⁴ brought by the government against manufacturers to recover for past cigarette-caused harms imposed on the government. In any event, the key elements of a state-initiated ex post system are (a) that the claims would be brought by the state; (b) that they would be brought ex post; and (c) that the proceeds from the system would *not* go directly back to smoking victims.

In Subsection IV.D.2 above, we described one of the advantages of victim-initiated, as compared to state-initiated, incentive-based systems. The idea is that a victim-initiated regime would avoid overdeterrence of those smokers who accurately estimate or overestimate the risks of smoking, as they could expect to get some of the ex ante cigarette tax refunded to them when they bring their claims. A state-initiated approach, on the other hand, could create overdeterrence for such smokers, because they could not expect a "tax refund" ex post—except only very indirectly through, for example, lower income tax rates.

Another advantage of the victim-initiated approach is that the system itself would generate information about the harms of smoking, and this information could then be used to fine-tune further the regulatory system. Smokers would have an incentive to bring claims whenever their cigarette-related illnesses began to manifest themselves.⁴⁷⁵ Under a state-initiated approach, in contrast, there would be no such incentive for victims to come forward. Thus, the government's factual basis for its ex post claims/fines/taxes would have to come from some other source—perhaps, for example, from epidemiological studies of the effects of smoking on general populations. Such studies are certainly valuable, but they could be made available to any regulatory regime, including the victim-initiated regime.⁴⁷⁶

One concern that is sometimes raised about victim-initiated approaches is that they can give victims the incentive to behave with "moral hazard." Thus, the argument goes, if the promise of an ex post award motivates victims to come forward with their claims (thus revealing all sorts of helpful

474. See cases cited *supra* note 68.

475. Some economists have argued that incentive-based regimes tend not to create incentives for parties to volunteer relevant information. For example, consider the following quotation from Stiglitz: Under both schemes [direct regulation and fines] it is not in the interest of a steel company to announce how much pollution it is creating. Nor is it in the interests of any of the users of steel (to the extent that the market is competitive), since any fines imposed as a result of excessive pollution or any expenditure on pollution-control devices mandated by regulations are simply passed along to the user. And while it may be in the interests of consumers collectively to monitor, if monitoring is costly none will be willing to do it. We have a classic public-good problem.

STIGLITZ, *supra* note 425, at 229. Our point in this section is that one of the potential benefits of *victim-initiated* ex post liability is that it helps to overcome this public good problem.

476. To the extent the state were to attempt to strengthen its case for ex post fines, taxes, or awards, by offering inducements to smokers to get them to come forward with helpful information, we would then be moving along the continuum from a state-initiated system to a victim-initiated system. That would be another type of hybrid regulation.

information), it can also give them an increased incentive to engage in the behavior—or a decreased incentive to avoid the behavior—that created the claims against the cigarette companies in the first place. Put simply, the availability of an ex post award—such as a tort award—may make people smoke too carelessly and too much.⁴⁷⁷

This worry about the moral hazard effect on smokers of the availability of bringing an ex post claim, however, is largely unfounded. First, cigarettes do not pose a substantial consumer care level issue. There is not much that consumers can do, in care level terms, to reduce the costs of smoking. There is no “safe” way to smoke a cigarette, at least not as cigarettes are currently designed.⁴⁷⁸ Thus, it is difficult to conceive how the existence of a potential ex post claim would induce smokers to smoke each cigarette “less carefully.” Second, even if smokers knew of, and could plausibly be expected to take, some care level precautions, a victim-initiated ex post incentive-based system of regulation would not *create* a moral hazard problem inasmuch as the compensation that it provided would only substitute for compensation that is currently provided through public and private insurance mechanisms. That is true because current compensation is not adjusted to take into consideration smokers’ care levels. A liability system, therefore, would merely replicate any existing moral hazard problem.⁴⁷⁹ Finally, ex post liability would largely eliminate activity level problems. As we have argued all along, if manufacturers are forced ex post to bear the full costs that their products cause, they will have to charge a price that reflects the full cost of cigarettes. Therefore, overconsumption in the hope of being able to bring an ex post claim against the industry is prevented by the requirement that smokers fund that ex post award up front in the form of increased cigarette prices.⁴⁸⁰

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477. Cf. Cropper & Oates, *supra* note 38, at 692-93 (suggesting that a Pigouvian tax may be superior to a victim-initiated ex post incentive-based regime as a means of internalizing the costs of polluters because a Pigouvian tax does not involve behavior-distorting payments to the victim whereas ex post liability does).

478. There may be ways in which smokers could reduce the risks of smoking. For instance, they might try to inhale the smoke less deeply into their lungs. Or they might avoid covering the tiny holes around the filters of some cigarettes that would otherwise allow some of the harmful constituents, including tars, to escape into the air. The problem, however, is that consumers are unaware of those potential precautions and, in any case, may not be consciously “deciding” how to smoke a cigarette. See *supra* notes 104-107 and accompanying text. Indeed, those precautions may be available to consumers primarily because consumers are unaware of their self-defeating characteristics and manufacturers seek to take advantage of that fact. See *supra* notes 104-107 and accompanying text; *infra* note 673.

479. It might well be true, as several readers of earlier drafts of this Article have noted, that smokers could improve their long-term health—and, in essence, partially counteract the ill-health consequences of smoking—by improving their diets or exercise habits. But that point can be made of smokers and nonsmokers under the current regime. No compensation scheme of which we are aware goes very far in encouraging potential claimants to eat better or exercise more. In addition, we are unaware of any studies suggesting that diet and exercise have an especially significant effect on the health of smokers. Again, an ex post liability system for smokers would not *create* a moral hazard problem.

480. Cf. *infra* text accompanying notes 777-778 (responding to similar “personal responsibility” concerns with ex post incentive-based regulation).

F. *Summary*

In this part, we reviewed the arguments for different types of regulation. Both command-and-control and performance-based regulation place huge informational demands on regulators, demands worsened by the perverse incentives under such regimes for manufacturers to conceal, or at least to fail to seek out, better information. Without perfect information, regulators will set prices too high or too low, and they will be unable to respond properly to changes in the amount of harm a product does. Manufacturers will thus lack incentives to make their products safer or charge prices that ensure efficient activity levels. Ex post incentive-based regulation, by contrast, would harness market forces and manufacturer information to avoid the inefficiencies of the other regimes.

V. IMPLEMENTING A VICTIM-INITIATED EX POST INCENTIVE-BASED SYSTEM

As we have shown in previous parts of this Article, a system of victim-initiated ex post incentive-based liability has significant advantages over other forms of regulation in addressing the market failures associated with smoking. In this part, we explore in greater depth the concept of a victim-initiated ex post incentive-based regime. We begin by analyzing different alternatives to such a regime. Throughout this Article, our model for ex post incentive-based regulation has been enterprise liability. In this part, although we touch on enterprise liability, we focus more on an alternative, administrative regime based on the workers' compensation model.

A. *Alternative Victim-Initiated Ex Post Incentive-Based Systems*

So far, we have used an idealized version of enterprise liability to illustrate the virtues of a victim-initiated ex post incentive-based regime. Enterprise liability, however, is only one form of such a regime—one that relies on courts rather than agencies to do the relevant ex post damage determinations. In this section, we describe an alternative ex post incentive-based regime: smokers' compensation. Before doing so, however, we explore the idea of enterprise liability further, relaxing some of the assumptions we have been making up to now and addressing some anticipated objections. After discussing both enterprise liability and smokers' compensation, we describe a technology—the cigarette card—that could be used under either approach to allocate costs to specific manufacturers (and to improve the efficacy of any regulatory approach).

1. *Enterprise Liability*

In this section, we relax some of the assumptions that were explicitly and implicitly included in the notion of an "idealized" enterprise liability regime, and we consider some of the common criticisms that are made of enterprise liability as a system of deterrence. There are two types of criticisms that are often levied against an enterprise liability regime: first, that it does a poor job of measuring damages suffered by individuals⁴⁸¹ and second, that it is an extremely costly system to administer.⁴⁸² In our view, those criticisms are often overstated.

The tort system, especially to the extent juries are used, is generally criticized for being an unreliable means of determining the amount of damages to be paid by defendants to plaintiffs.⁴⁸³ Some argue, for example, that there is a tendency for juries to award irrationally exorbitant damages, especially in cases involving wealthy, out-of-state, corporate defendants and sympathetic, local, individual plaintiffs.⁴⁸⁴ Such concerns, though perhaps valid in some circumstances, are often vastly exaggerated.⁴⁸⁵ Indeed, in the cigarette context specifically, juries have, if anything, been biased against individual smokers and in favor of corporate defendants.⁴⁸⁶ Nevertheless, if runaway

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481. See *infra* notes 483-487 and accompanying text.

482. See, e.g., STEPHEN D. SUGARMAN, *DOING AWAY WITH PERSONAL INJURY LAW* 40-41, 127-48 (1989); George L. Priest, *The Current Insurance Crisis and Modern Tort Law*, 96 YALE L.J. 1521, 1560, 1587-90 (1987). Even the national tobacco settlement proposal seems to adopt the conclusion that the tort system, as a means of regulating cigarette risks, involves unacceptably high administrative costs. See *Tobacco Settlement*, *supra* note 32, at 3 ("[C]ivil actions [against cigarette manufacturers] are complex, slow-moving, expensive and burdensome, not only for the litigants but also for the nation's state and federal judiciaries.").

There is a third type of criticism of enterprise liability, which is related to the mismeasurement of damages point, though the criticism is more of an insurance argument than a deterrence one. The claim is that enterprise liability, because it typically includes damages for nonpecuniary harms (so-called pain-and-suffering damages), forces consumers to purchase insurance that they do not want and would not want, even if perfectly informed. See Priest, *supra*, at 1552-53. This type of criticism, to the extent it applies anywhere, would certainly apply to the proposal set forth in this Article. The argument that consumers do not demand this type of insurance coverage, however, has, in our view, been drastically overstated. A reasonably strong argument can be made that consumers do demand such insurance coverage and that enterprise liability is an appropriate means of providing it. See Croley & Hanson, *supra* note 22, at 1857-1914.

483. See, e.g., PETER W. HUBER, *LIABILITY: THE LEGAL REVOLUTION AND ITS CONSEQUENCES* 11-15 (1988) (describing the alleged failure of the tort system and attributing that failure, at least in part, to a desire by jurors to be generous to tort victims at the expense of wealthy defendants).

484. See, e.g., *id.* at 11-12 ("If the new tort system cannot find a careless defendant . . . , it will often settle for a merely wealthy one."); JEFFREY O'CONNELL & C. BRIAN KELLY, *THE BLAME GAME: INJURIES, INSURANCE, AND INJUSTICE* 23-32 (1987) (describing numerous alleged biases in civil juries' decisionmaking); *Good Riddance to Lotto Jury Awards*, BUS. WK., June 3, 1996, at 134 (extolling a Supreme Court decision striking down a \$2 million award to an Alabama doctor who sued BMW for a retouched paint job on his new sedan).

485. See Stephen Daniels, *The Question of Jury Competence and the Politics of Civil Justice Reform: Symbols, Rhetoric, and Agenda-Building*, LAW & CONTEMP. PROBS., Autumn 1989, at 269, 279-81, 292-310; Marc Galanter, *Real World Torts: An Antidote to Anecdote*, 55 MD. L. REV. 1093, 1109-12 (1996).

486. See Schwartz, *supra* note 28, at 131, 139, 143-45.

juries in tort cases remain a concern, there are reforms that would respond to such concerns short of eliminating enterprise liability as a policy option.⁴⁸⁷

Critics of enterprise liability also point to its supposedly high administrative costs as a strong argument for choosing some alternative system, such as a fault-based tort regime or a no-fault first-party insurance regime.⁴⁸⁸ Those criticisms often misunderstand the full effect of an enterprise liability regime. For one thing, because enterprise liability would do away with the need for an expensive trial on the issue of fault, it might actually be cheaper to administer than, for example, a fault-based tort regime.⁴⁸⁹ In addition, to compare the administrative costs of a no-fault first-party insurance regime with an enterprise liability regime is to compare apples with oranges. A no-fault first-party insurance regime is only that—an insurance regime. It focuses exclusively on spreading the risks of product-caused harms, providing no deterrence benefits to manufacturers. Enterprise liability, by contrast, provides both product-risk insurance and product-accident deterrence. And it is the deterrence element—which includes a factfinding exercise to determine causation—that adds costs (though not necessarily costs in excess of the accompanying benefits)⁴⁹⁰ to the system.

2. *Smokers' Compensation*

Notwithstanding the arguments just made in defense of enterprise liability, if there remains substantial doubt that a jury can accurately calculate damages and there remain concerns about the administrative cost of a tort-based regime, then alternative victim-initiated ex post regimes should be considered. One alternative to enterprise liability that may be more appropriate in the context of tobacco-related injuries is *smokers' compensation*, an administrative compensation system. Under such a regime, instead of bringing a tort suit in court, smoking victims (which could include smokers, their families, and entities with subrogation claims, such as insurers)⁴⁹¹ would bring claims

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487. For example, possible solutions might include reforming jury selection criteria (perhaps even placing some experts on juries), reforming jury instructions, taking the damages decision from the jury and giving it to judges, placing caps on punitive damages and noneconomic damages, and the like. To be absolutely clear, we do not recommend any of these reforms (except, perhaps, as an alternative to eliminating tort law altogether).

488. See, e.g., Priest, *supra* note 482, at 1560, 1587-90 (criticizing enterprise liability on those grounds).

489. See Croley & Hanson, *What Liability Crisis?*, *supra* note 40, at 15-16. Which system would be administratively cheaper would depend upon the relative size of the cost-per-case effect (which would make a fault-based system relatively costly) and the quantity-of-cases effect (which would make an enterprise liability regime relatively costly). See *id.*

490. See *id.* at 16.

491. We assume that victims of environmental tobacco smoke (ETS) would not be able to bring a smokers' compensation claim. For a discussion of how a victim-initiated ex post incentive-based regime could be used to respond to public ETS exposure, see *infra* Subsection V.C.3. As we make clear below, for a smokers' compensation system to have a significant advantage over alternative types of regulation, the administrative body would need to make several causal determinations that may not currently be

before an administrative tribunal. The tribunal would decide whether and how much the claimant was entitled to recover, basing its decision on (a) whether the claimant had a compensable claim; (b) to what extent cigarette smoking caused the injury; (c) what the claimant's damage award should be; and (d) how the compensable injury costs should be allocated among tobacco companies. The administrative factfinders would bring expertise to the adjudication of smoking-injury claims.⁴⁹² Perhaps supported by a standing science panel,⁴⁹³ the agency would bring to bear the most current evidence, epidemiological and otherwise, regarding the effects of cigarette smoking. Research could be not only borrowed from private researchers, but also funded or conducted by the agency itself.

Causation-based administrative alternatives to tort law are not strangers to the legal landscape. Workers' compensation is the exclusive remedy for employees injured on the job in every state.⁴⁹⁴ And alternative compensation systems have been used at the federal level on several occasions, including the Black Lung Benefit Program for miners suffering from lung disease,⁴⁹⁵ the National Vaccine Injury Compensation Program for victims of illnesses contracted from immunizations,⁴⁹⁶ and the Price-Anderson Act governing liability in the event of a nuclear accident.⁴⁹⁷ Indeed, the notion of an alternative compensation system specifically for smoking-related injuries is itself not new. Over twenty years ago, Donald Garner proposed a system in which welfare agencies could exercise no-fault claims against cigarette manufacturers to recover direct medical costs and related transfer payments, such as social security disability payments.⁴⁹⁸ Garner's system would involve a special tribunal with expert factfinders to manage any complicated scientific questions of causation.⁴⁹⁹ Claimants could invoke a rebuttable presumption

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feasible with respect to ETS-related harms.

492. Administrative alternatives are frequently proposed in situations that involve complex scientific or medical determinations, long latency periods, and large numbers of potential plaintiffs. *See, e.g.*, Robert L. Rabin, *Some Thoughts on the Efficacy of a Mass Toxics Administrative Compensation Scheme*, 52 MD. L. REV. 951, 952 (1993). This description is usually applied to mass toxic exposures, but fits tobacco equally well.

493. One model for a "Tobacco Disease Panel" is Ontario's Industrial Disease Standards Panel, which assists the provincial Workers' Compensation Board. Its mandate is to investigate potential diseases, to make findings about causal connections, to specify criteria for evaluation of claims, and to advise the Board concerning appropriate eligibility rules. The Board refers specific questions to the panel, but the panel may also investigate issues on its own accord. The panel may appoint specialist scientific subpanels on particular subjects. The full panel integrates the scientific findings with policy considerations to make recommendations to the Board. *See* 2 AMERICAN LAW INST., *supra* note 100, at 335-37.

494. *See* U.S. CHAMBER OF COMMERCE, 1994 ANALYSIS OF WORKERS' COMPENSATION LAWS at vii (1994).

495. *See* 30 U.S.C. §§ 901-945 (1994); *see also* PETER S. BARTH, *THE TRAGEDY OF BLACK LUNG: FEDERAL COMPENSATION FOR OCCUPATIONAL DISEASE* (1987).

496. *See* 42 U.S.C. §§ 300aa-10 to 300aa-34 (1994); *see also* Rabin, *supra* note 492, at 955-60.

497. *See* 42 U.S.C. § 2210; *see also* Rabin, *supra* note 492, at 955-60.

498. *See* Garner, *supra* note 48, at 314.

499. *See id.* at 319. He suggests the Court of Customs and Patent Appeals and the Patent Office Board of Appeals as possible models. *See id.* at 319 n.248.

of causation based on how long the victim smoked,⁵⁰⁰ and liability would be apportioned according to the approximate number of each manufacturer's cigarettes that the victim smoked.⁵⁰¹ A presumption that all cigarettes are equally dangerous would be rebuttable by a manufacturer's showing that its brand is safer than others'.⁵⁰²

Since Garner's article, legal scholars have continued to keep the notion of an alternative compensation scheme for tobacco in play. Richard Ausness, for example, recently proposed creating an administrative board with rulemaking and adjudicative authority to process tobacco-injury claims.⁵⁰³ As under Garner's system, Ausness's board would set presumptions of causation, perhaps even irrebuttable for certain diseases, and damages would be limited to economic losses.⁵⁰⁴ Most recently, Paul LeBel advocated an administrative system involving broad, categorical determinations of causation and damages to minimize costs.⁵⁰⁵ The program would be open only to individuals with particular diseases and smoking patterns,⁵⁰⁶ who could collect only out-of-pocket medical expenses.⁵⁰⁷ LeBel would also allow a modest benefit to families of smokers who die from smoking-related diseases, primarily for the symbolic value.⁵⁰⁸ Both Ausness and LeBel would finance the payment of damages through an excise tax.⁵⁰⁹

Those earlier proposals were not designed to address all of the deterrence and cost-internalization goals that, in our view, should be central.⁵¹⁰ The Ausness-LeBel excise tax, for instance, would impose costs on all manufacturers, irrespective of their causal connection. As we emphasized above, however, the goal of optimal deterrence requires that *each manufacturer bear that portion of the overall cigarette-caused harm that is attributable to that manufacturer's brand*.⁵¹¹ Only then will market forces lead manufacturers to design, produce, and market safer cigarettes. And only then

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500. See *id.* at 315.

501. See *id.* at 316.

502. See *id.* at 316-17.

503. See Ausness, *Compensation*, *supra* note 48, at 1124-25.

504. See *id.* at 1127-29.

505. See Paul A. LeBel, *Beginning the Endgame: The Search for an Injury Compensation System Alternative to Tort Liability for Tobacco-Related Harms*, 24 N. KY. L. REV. 457, 474 (1997).

506. See *id.* at 490.

507. See *id.* at 491.

508. See *id.* at 492.

509. See Ausness, *Compensation*, *supra* note 48, at 1125; LeBel, *supra* note 505, at 493.

510. Alternative compensation systems generally have been proposed to serve insurance, administrative efficiency, and corrective justice goals. See, e.g., Ausness, *Compensation*, *supra* note 48, at 1088, 1125 n.178; Rabin, *supra* note 492, at 951. LeBel's and Garner's proposals are based in part on a cost-internalization goal, but both have other aims that may pull in different directions. See Garner, *supra* note 48, at 277 (advocating the removal of government subsidies of tobacco and encouraging safety); LeBel, *supra* note 505, at 466 (articulating as goals compensation, enhancement of safety, administrative efficiency, and cost internalization).

511. See *supra* notes 99-101, 450-454, and accompanying text.

will each brand of cigarette fully reflect its expected costs, thus leading to optimal activity levels.

None of the actual or proposed causation-based compensation systems provides a perfect model for a smokers' compensation system. They do, however, usefully highlight some of the major considerations and tradeoffs in designing an ideal smokers' compensation system. In a forthcoming article, we (with Michael Zamore) provide a more fully formed, but still incomplete, model of the smokers' compensation idea.⁵¹² In this Article, we suggest only a few of the major substantive issues that must be confronted in crafting such a system.⁵¹³

In an ideal smokers' compensation world, three conditions would hold. First, all smoking-related injuries would be "signature diseases." They would, in other words, be caused exclusively, or nearly so, by smoking. Second, smokers would be steadfastly brand loyal, sticking to their preferred cigarette as long as they smoke. Third, all smoking-caused damages would be tangible and easily measured. Under these conditions, if a claimant had one of the signature diseases, the system would unerringly place liability on the manufacturer that caused the harm, for the appropriate amount.

In many cases, this ideal may not be so far from reality. Certain diseases, most notably lung cancer and emphysema, are very rare among nonsmokers and might accurately be considered signature diseases.⁵¹⁴ There is also some evidence that smokers are extraordinarily brand loyal.⁵¹⁵ Moreover, a substantial portion of the costs of cigarette smoking are economic and may be easily and accurately measured.⁵¹⁶ In many other cases, however, these factors might be more variable. For instance, although smoking is known to increase the risk of heart disease, there are many other common causes of heart disease. Many smokers do switch brands. And many forms of damage are not easily measured. As the real world begins to diverge from the ideal, it becomes necessary to weigh the value of increased accuracy in tracing injury costs to manufacturers and the administrative costs of achieving that accuracy. A similar tradeoff exists with respect to calculating real-world damages.

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512. See Hanson et al., *supra* note 40.

513. Procedural questions may loom large as well. For example, one threshold question is whether a smokers' compensation system would partially or fully preempt tort law.

514. The portion of all lung cancer deaths caused by smoking in 1985 was 87%. See Patrick Remington, Presentation at the Conference on the So-Called Global Tobacco Settlement: Its Implications for Public Health and Public Policy, University of Wisconsin-Madison Law School (Oct. 16, 1997) (outline of presentation on file with the *Yale Law Journal*).

515. See Joe B. Tye et al., *Tobacco Advertising and Consumption: Evidence of a Causal Relationship*, 8 J. PUB. HEALTH POL'Y 492, 493 (1987) ("Cigarettes enjoy one of the most tenacious brand loyalties of any consumer product."); see also Philip H. Dougherty, *A.M.A.'s Assault on Tobacco*, N.Y. TIMES, Dec. 12, 1985, at D29 ("Unlike most products you could name, cigarettes engender considerable brand loyalty.").

516. We describe losses as "economic" or "pecuniary" if they are conventionally characterized that way. Many so called "economic" losses, however, are actually nonpecuniary losses that can be readily measured. See Croley & Hanson, *supra* note 22, at 1857-61.

a. *Causation*

i. *General Causation*

The first inquiry of a smokers' compensation board would be to determine whether cigarette smoking could have caused the injury claimed. To lower administrative costs, the system could be open only to certain claims. A threshold definition of a compensable injury under smokers' compensation might turn, for example, on the amount smoked and the type of disease. Claims for certain diseases with known, constant latency periods might be barred until a given period of time has passed. Finally, a determination that smoking *could* have caused any compensable injury would not necessarily imply that, in the given case, smoking *did* cause the injury.

Workers' compensation has long struggled with this problem in occupational disease cases. It is often unclear, for example, whether a worker who was exposed to toxic fumes developed cancer as a result of that exposure rather than from genetics or environmental toxins. And, of course, long latency periods complicate the inquiry. Workers' compensation systems generally consider a disease "occupational" if the victim was likely to have contracted it due to the nature of her work.⁵¹⁷ A disease that may be common may nevertheless become occupational if the employment facilitates its transmission.⁵¹⁸ Moreover, the workplace need not be the sole or even dominant cause of a worker's contracting a disease, so long as it contributes to the disease's development.⁵¹⁹ Despite these apparently liberal standards, the workers' compensation system does not always get high marks for responding to occupational disease. The American Law Institute reporters' study on enterprise liability, for example, called workers' compensation "notably unsuccessful in delivering compensation" to occupational disease victims.⁵²⁰

One option for addressing difficult questions of causation, often proposed for mass toxic torts, would be probabilistic recovery.⁵²¹ In such a system, recovery would be discounted by the likelihood that smoking did not cause the smokers' injury. If, say, smoking has a 90% probability factor of causing lung

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517. See 1 ARTHUR LARSON, *LARSON'S WORKERS' COMPENSATION* 7-100 (desk ed. 1976 & Supp. 1997). The work may be distinctive in the type of risk to which it exposes workers (e.g., working around toxic chemicals) or in the degree to which workers must face everyday risks (e.g., contracting disabling conditions from handling ice all day). See *id.* at 7-112 to -114.

518. In one case, for example, a telephone operator who contracted tuberculosis qualified for workers' compensation because it was found that the close-fitting mouthpiece she used at work contributed to her contraction of the disease. See *id.* at 7-107.

519. See *id.* at 7-124.

520. 1 AMERICAN LAW INST., *supra* note 100, at 111.

521. For an extended early discussion of an ex post incentive-based regime along the lines described here, see David Rosenberg, *The Causal Connection in Mass Exposure Cases: A "Public Law" Vision of the Tort System*, 97 HARV. L. REV. 851 (1984).

cancer in smokers,⁵²² one out of every ten smokers with lung cancer would develop lung cancer without smoking. In theory, those individuals should not be compensated, since smoking did not cause their injuries. The individual attribution uncertainty of epidemiological evidence, however, makes it extremely difficult, if not impossible, to identify which ten claims should be denied.⁵²³ Probabilistic recovery would address this problem by allowing *all* claimants with lung cancer to collect damages—at 90% of their total. The industry would thus pay the full costs of the injuries caused by its product, albeit not to the exact victims.⁵²⁴

A smokers' compensation system could adopt another commonly recommended tool for simplifying the causal determinations as well: evidentiary presumptions.⁵²⁵ Garner, Ausness, and LeBel all propose presumptions of causation for certain diseases depending on the claimant's smoking history.⁵²⁶ Moreover, presumptions of causation figure prominently in many of the administrative schemes set up by the current federal law, including the Black Lung Benefits Program⁵²⁷ and the National Vaccine

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522. Our hypothetical estimate may be reasonably accurate, as 87% of all lung cancer deaths in 1985 were caused by smoking. Remington, *supra* note 514. Presumably, the percentage of smokers whose lung cancer deaths were due to smoking would be well over 90% given that the rate of lung cancer among smokers is approximately 20 times that of nonsmokers. *Id.*

523. Some might argue that making even the broad probabilistic determinations would be infeasible. See, e.g., Rabin, *supra* note 492, at 962 (suggesting that the assumptions of scientific certainty underlying probabilistic recovery are "problematic"). Some in the scientific community, however, are more optimistic. Troyen Brennan and Robert Carter, for example, argue that probabilistic recovery comports with current scientific thought. Science no longer looks for absolute, deductive explanations of occurrences, they write, but allows for probabilities. See Troyen A. Brennan & Robert F. Carter, *Legal and Scientific Probability of Causation of Cancer and Other Environmental Disease in Individuals*, 10 J. HEALTH POL. POL'Y & L. 33, 39 (1985). Brennan and Carter acknowledge the difficulty of establishing a statistically precise probability factor, but they believe that with epidemiological studies and expert testimony factfinders could generally "arrive at some good estimate of the probability of causation in the individual case." *Id.* at 58.

524. David Rosenberg has argued that underdeterrence or overdeterrence is the likely result in the absence of a probabilistic recovery. The reliance on statistical evidence typical of mass toxic cases—and smoking cases—means that a strong preponderance rule, requiring "'particularistic' proof" of causation as to the individual, bars all mass exposure claims. Rosenberg, *supra* note 521, at 857-58. A weak preponderance rule, one that allows statistical proof of causation provided the risk at issue accounts for more than 50% of the total risk, would have the same result in nearly all cases, since the toxic risk rarely exceeds the background risk. See *id.* at 858. Rosenberg cites cigarette smoking as an exception to the rule that the excess risk rarely exceeds the background risk. See *id.* at 858 n.40. But Rosenberg compares the risk associated with smoking against a background risk of exposure to asbestos. See *id.* We expect that the excess risk of certain common tobacco-related diseases (such as heart disease) from smoking over a general background risk is likely to be less than 50%. In those cases in which the toxic risk is so great, "imposing full liability is no more desirable than denying liability altogether: to hold a defendant firm accountable not only for disease losses caused by its own tortious conduct, but also for those attributable to background risk, might inflict a 'crushing liability.'" *Id.* at 858-59.

525. Depending on the system, such presumptions could be rebuttable or irrebuttable. Failure to satisfy the conditions of the presumption could bar compensable claims from being brought, or it could simply shift the burden of proving causation to the claimant.

526. See Ausness, *Compensation*, *supra* note 48, at 1127-28; Garner, *supra* note 48, at 315; LeBel, *supra* note 505, at 490. Rabin proposes the use of presumptions in some mass toxic tort cases. See Rabin, *supra* note 492, at 960-61.

527. See 30 U.S.C. § 921(c) (1994).

Injury Compensation Program.⁵²⁸ The use of presumptions would reduce the costly obstacles facing claimants. It would also expedite the claims process by avoiding redundant litigation of scientific evidence. Although these administrative-cost savings would come at the expense of additional deterrence, such a tradeoff may be desirable.

ii. *Specific Causation*

If a claimant smoked only one brand of cigarette, establishing general causation would be sufficient. When the smoking-related injuries must be divided among multiple brands, however, a smokers' compensation system would need to allocate liability. Ausness and LeBel do not address this question; under each of their proposals, damages would be financed by excise taxes.⁵²⁹ Liability, therefore, would effectively be determined by market share. The Black Lung Benefits Program⁵³⁰ and the National Vaccine Injury Compensation Program⁵³¹ are similarly funded by taxes, with liability allocated according to market share rather than causal share. In this subsection, we identify five possible methods of allocating liability among cigarette manufacturers other than market-share liability. We begin with the least accurate and (probably) least expensive and move toward the most accurate and most expensive. In presenting these methods, we remain agnostic as to the proper tradeoff between accuracy and administrative costs; our goal is simply to highlight a few of the possible options.

First, responsibility could be divided *equally* among the manufacturers that produced cigarettes smoked by the claimant. This method would be the easiest to administer, as it would require only the knowledge of which brands were smoked and some basic arithmetic.⁵³² Moreover, it is at least one step better than an allocation based solely on market share in that only those companies that manufactured the particular smoker's cigarettes would pay for that smokers' harms. If consumers are reasonably brand loyal, then manufacturers of relatively safe cigarettes should thrive and competition for safety should emerge. Nevertheless, the nexus between causation and payment of damages would be fairly attenuated, reducing the beneficial incentive effects of the system.

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528. See 42 U.S.C. §§ 300aa-13 to -14 (1994).

529. See Ausness, *Compensation*, *supra* note 48, at 1125; LeBel, *supra* note 505, at 493

530. See 26 U.S.C. § 9501(b)(1) (1994).

531. See *id.* § 9510(b).

532. Although we do not address the problem here, claimants under a smoker's compensation system may, depending on the nature of the program, have an incentive to overstate the amount that they smoked and to lie about the brands of cigarettes that they smoked. A smoker's compensation program should, therefore, be designed with that possibility in mind. We take up that issue more fully in Hanson et al., *supra* note 40.

Second, rather than dividing liability equally, a smokers' compensation system could prorate liability according to the length of time a smoker consumed each manufacturer's product. This method would require the factfinder to establish additional information, and would thus add to the administrative costs of the process. Pro rata liability, however, would represent an improvement over the equal allocation method inasmuch as it would allocate damages in a way that more closely approximated the harm done by the respective manufacturers. This approach, too, may have problems. For example, insofar as smokers systematically smoke disproportionately dangerous cigarettes for disproportionately short durations, this equal-allocation-by-time method would not create optimal ideal deterrence. To help address any such problem, this allocation system could be combined with a rebuttable presumption that all cigarettes are equally dangerous.⁵³³ Manufacturers of demonstrably safer cigarettes would be permitted to rebut that presumption, thereby reducing their shares of liability.⁵³⁴

A third allocation system would involve estimating the number of cigarettes smoked of each brand. Doing so would further refine the allocation process, but at much greater cost. It may be that a smoker smokes a half-pack of Brand X every day for ten years. If that person moves on to Brand Y for another ten years, while also increasing consumption to a pack per day, she has smoked twice as many Brand Y cigarettes, though the time frame for each brand was the same. Recognizing this problem, Garner suggests the per number means of allocating liability, coupled with a rebuttable presumption that cigarettes are equally dangerous.⁵³⁵

Fourth, it may be desirable to allocate the damages in some way other than purely on a pro rata basis.⁵³⁶ The allocation could, for example, be structured on a "winner-take-all" basis. Such a system could assume any number of forms. For instance, the manufacturer who produced the most cigarettes

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533. Similar presumptions might be employed with any of the options described in this subsection. That is, any of the proposed rules could simply be rebuttable presumptions.

534. Although the administrative board may lack information to judge adequately the relative riskiness of cigarettes, manufacturers probably do not. By placing the burden on manufacturers, therefore, the presumption forces the well-informed manufacturer to inform the poorly informed regulator. Furthermore, it does so in a way that pits manufacturers against manufacturers in contrast to the current regime in which manufacturers have common incentives to maintain one simple story—that there is no proof that any brand of cigarettes causes cancer and that smoking cigarettes is not addictive. A code of silence in response to a presumption that all cigarettes are equally dangerous, however, is certainly not unimaginable given the industry's history, and would partially undermine the primary motivational impact of ex post incentive-based regulation by sharply reducing care level considerations from manufacturing decisions. While this behavior would not be in individual companies' best interests, oligopolistic decisionmaking might prompt such action, particularly if the industry felt that the smokers' compensation system could be dismantled if it failed to produce results. Even were it the case that manufacturers could not manage to cooperate in that way, however, administrative regulators might not be sufficiently competent to sort out any informational disputes and competing claims among manufacturers.

535. See Garner, *supra* note 48, at 316-17.

536. For example, if most long-term smokers tend to smoke the relatively safe brands of cigarettes, then pro rata allocation would inefficiently penalize makers of the safe brands.

smoked by the claimant could bear all liability. Such a method would reduce the administrative costs associated with inter-manufacturer disputes. Or the company producing the first brand smoked could bear a disproportionate share of the liability. This “first-brand penalty” could be justified on the grounds that first brands create the addiction and that their toxins linger in a smoker’s body for the greatest number of years.⁵³⁷

The final general approach to dealing with brand-specific harm would be to establish a danger quotient for each brand of cigarette. A science panel, for example, could create a formula that incorporated output factors believed to lead to disease and epidemiological regression analyses by brand. Based on testing, each brand of cigarette would be assigned a quotient indicating its danger. After allocating liability, the tribunal would adjust the amounts based on the relative danger quotient of the relevant brands. To refine the system further, the panel could establish various danger quotients for each brand with respect to different diseases. This approach has obvious deterrence benefits over the other approaches, but those benefits may be outweighed by the additional administrative cost.

The information-forcing effect of ex post incentive-based liability would refine any of the methods suggested above over time.⁵³⁸ Though all of these possibilities force tradeoffs between accurate causation measures and administrative costs, any of them could feasibly be implemented, depending on the resource constraints faced by adjudicators. Another factor in the choice between the methods we have suggested is our initial estimates of how individualized cigarette harms are: If we had good evidence that smoking behavior was highly variable across smokers or that different brands varied substantially in dangerousness, we would have good reason to invest more in individualized causation determinations.

b. *The Cigarette Card*

The list of five options for allocating liability discussed in the previous subsection is hardly exhaustive. Moreover, each option has many strengths and weaknesses that we are unable to discuss in this Article. Nevertheless, in this subsection we suggest a possible means of overcoming, or at least reducing, many of the likely problems that implementation of the above options would create. In this subsection, like the last, our discussion is only cursory and suggestive.

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537. If it turned out that smoking costs were not linear, liability could instead be weighted according to estimated marginal damage. If, for example, it turned out that smoking for five years were relatively harmless, and that the cigarettes smoked between years six and ten were more destructive, the system might put greater liability on the manufacturers of those brands smoked between years six and ten. *Cf. supra* note 442 (describing the typical assumption of economists that pollution has increasing marginal costs).

538. *See supra* notes 457, 475, and accompanying text.

One method of overcoming the difficult informational requirements of the allocation models described above is by enacting a requirement that anyone wanting to purchase cigarettes must first purchase a "cigarette card." The card, which could be based on the same magnetic strip (or computer chip) technology used for credit cards and ATM cards, would be issued to any legal-aged smoker who wanted to buy cigarettes and would have to be presented by the smoker each time she purchased cigarettes. The card could keep track of a variety of potentially relevant risk factors, such as the number of packs purchased by the smoker, which brands the smoker purchased, and the smoker's age at the time of purchase. If that smoker were later to bring a claim against cigarette manufacturers, the smoker's cigarette card information could be used to help resolve many of the potentially difficult causal questions. Moreover, the new data could be used by epidemiologists and biostatisticians to expand what is known about the effects of smoking, the effects of different brands (or ingredient mixes within those brands), the effects of different smoking patterns, and so on. Using advanced statistical techniques, we could learn a great deal more about the effects of cigarettes; that learning, in turn, could be used to hone further the agency's causal determinations and ultimately affect manufacturer product design.

A drawback of the cigarette card is that it would create significant administrative costs. But the costs of this proposal seem less significant in comparison to the costs that would be imposed by the variety of regulatory restrictions that the national tobacco settlement proposal envisages. For example, the proposal would:

- Mandate minimum federal standards for a retail licensing program that federal, state, and local authorities would enforce;⁵³⁹
- Impose penalties, both civil and criminal, for violations of the licensure requirements;⁵⁴⁰
- Impose licensing fees on sellers to cover administrative costs of issuing licenses;⁵⁴¹
- Set a minimum age of eighteen to purchase tobacco and require retailers to check the photo identification of anyone under twenty-seven;⁵⁴²
- Ban all sales of tobacco products from vending machines; ban the sale of tobacco products from opened packages; establish a minimum package size of twenty cigarettes; ban the sampling of

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539. See *Tobacco Settlement*, *supra* note 32, at 12.

540. See *id.* app. II at 44. Selling tobacco products without a license, for example, would be a criminal violation punishable at the federal level with a minimum penalty for individuals of \$1000 or imprisonment for six months or both; and for corporations, with a maximum penalty of \$50,000. State and local penalties could be more severe than these. See *id.*

541. See *id.* at 13.

542. See *id.* at 11.

tobacco products; and ban the distribution of certain tobacco products through the mail.⁵⁴³

Such provisions pose restrictions similar to those entailed by a cigarette card system. Issuing the cards and creating a system that would collect the data from the cards would create significant administrative costs, to be sure, but not, we suspect, overwhelming ones.

The case for the card system is even stronger when one considers its other potential benefits. For example, the use of the card could assist in imposing age requirements on the purchase of cigarettes. That is, cards would be issued only to consumers who are otherwise legally allowed to buy cigarettes.⁵⁴⁴ To appreciate the potential ways in which a cigarette card might be helpful to a cigarette seller, consider some of the "smart-card" technologies that institutions concerned with correctly identifying people are beginning to employ. Some companies are developing a card that is embedded with a microchip containing detailed personal information.⁵⁴⁵ Representatives of the biometrics industry report that still better means of identification verification are now available and will soon be widely used.⁵⁴⁶ Biometricians are developing better and cheaper ways of using unique human characteristics, such as fingerprints, hand prints, facial imaging, or retina patterns, to identify people.⁵⁴⁷ As the technologies improve and costs decrease, the benefits of a "smart" cigarette card, measured purely in terms of preventing underage smokers from buying cigarettes, could well overwhelm the costs of the system.

There is a related potential benefit of a cigarette card. Any regulatory regime that prohibits underage smokers from buying cigarettes, and that has the effect of raising cigarette prices, will give rise to black market forces that

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543. *See id.* at 11-12.

544. The idea of an identification card to assist retailers in avoiding selling to underage consumers is nothing new. British politicians are currently considering whether national identity cards should be issued in order to "stem the soaring crime rate and prevent minors buying cigarettes and alcohol." Helen Arnold, *Mistaken Identity: Identity Cards*, SUPER MARKETING, Sept. 6, 1996, at 20. Moreover, 16 European countries already have identity card policies, 10 of which are mandatory. *See id.* The greatest advantage of the cards in those countries is that they provide credible photo identification of consumers. Such cards would represent less of an advance in the United States, however, inasmuch as photo identification is widely held by consumers in the form of a driver's license.

545. *See* Stephen Lynch, *Life on the Line: Banking on ATM Cards*, ORANGE COUNTY REG. (Cal.), Feb. 2, 1997, at K8. A 256-byte memory chip card is being used, for example, in Germany's health care system. *See* Dr. Otfried P. Schaefer, *Introduction of Chip Technology to Healthcare in Germany* (visited July 22, 1997) <<http://www.smartcard.co.uk/health.html>>. The card contains information such as the insured's name, address, date of birth, status, the name of the insurance provider, and the expiration date of the insurance. *See id.* For now, the primary goal of the chip card is to lower administrative costs, but the technology is also being developed to assist the health care system in diagnosing and treating illness. *See id.*

546. *See* Geoff Nairn, *The Key to Your Identity: Falling Costs Will Allow Fingerprint Verification To Be Widely Used*, FINANCIAL TIMES (London), July 15, 1997, at 12.

547. *See id.*; *see also* Evan Perez, *Changing the Face of Security Systems*, COM. APPEAL (Memphis, Tenn.), Jan. 21, 1996, at 3C (describing a facial imaging system that "uses your face as the key to access automated teller machines and office buildings, or check the identity of welfare recipients and computer network users").

could undermine the goal of the regulation.⁵⁴⁸ The card could be used to assist in preventing or reducing black market cigarette consumption and production. It could, for instance, be utilized to limit the number of packs of cigarettes that any one smoker would be permitted to purchase over a given time period. If it were empirically determined that no individual smokes more than three packs per day, for example, then that maximum could form the basis of a buying cap for the month. To be sure, the adult might sell each of the ninety packs per month, but the adult would not be able to sell more than that amount. Moreover, the cigarettes would be purchased at the full, regulated price. Thus, it is difficult to imagine how a profit could be made by reselling those cigarettes, unless underage smokers not allowed to purchase cigarettes legally were willing and able to pay *more* than the fully internalized price. But such a possibility seems remote.⁵⁴⁹ On a more extreme level, anyone found carrying cigarettes that could not be accounted for on their cigarette cards could be subject to criminal penalties—analogueous to the open-container laws in many states.

The card could also assist individual smokers' efforts to quit smoking. That is, a smoker could ask to have self-imposed limits on her card that would prevent her from purchasing more than a specified number of cigarettes over a specified time period. Thus, the card could serve as a personal hand-tying technology for those smokers who want to cut down or ultimately to quit but, absent such a tool, have great difficulty doing so.⁵⁵⁰ Finally, the card could be used to help eliminate the alleged "positive externality" associated with smoking. With the card as a measure of people's conduct, pension plans could more easily charge less to smokers.

Although the potential advantages of a cigarette card may be enormous, we have thus far ignored a difficult to quantify, but nevertheless real, cost. A reaction of many readers may well be that our proposal gives too much information to governmental agencies, therefore creating a "Big Brother" problem. We sympathize with that concern, but we believe the problem is not as significant as it may initially appear. First, it is not clear that the sort of information that the cigarette card system would generate is any different from the sort of information that the American public already routinely provides to governmental and private agencies. In other words, it may be too late to worry about the sort of privacy concerns that this proposal raises.⁵⁵¹ Moreover, to

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548. See *infra* Subsection V.B.2.

549. The cap, whether it be three packs a day or four or whatever, would be set at a high enough level that the cap itself would not create a demand for black market cigarettes.

550. Cf. *supra* text accompanying notes 190-197 (describing smokers' common, but largely ineffective, hand-tying strategies).

551. As one writer put it recently, "Stored in computer databases around the country are profiles detailing what you buy at the grocery, where you spend your money, how much you paid for your home. Your medical condition. Your credit card and Social Security numbers. Almost every trait that makes you, well, you." Sandy Smith, *Instant Access*, TENNESSEAN, Mar. 10, 1996, at 1F.

the extent that the “Big Brother” problem associated with the cigarette card system is viewed as extraordinary, the system could be tailored to reduce or eliminate the concern. For example, the means of identification could be selected so as to reduce the amount of information that would be kept centrally, information that might otherwise be used or misused against the consumers who use the cards.⁵⁵² Further, Congress could create very strict controls and limits on what can be done with the information that is obtained through the program.

Despite such modifications, some might object to any regulatory system that keeps track of who is buying cigarettes. To that very basic criticism, we have two responses. First, we suspect that, for some, it is motivated in part by a kind of status quo bias. Consider a different reference point—something other than the regulation of a currently unregulated product, such as the decriminalization of some currently illegal product (for example, heroin). If we were to lift the ban on such a product, the idea of imposing heavy point-of-sale regulation, including the collection of information regarding who is purchasing how much of the product, might not seem so extraordinary. Indeed, such issues would presumably be considered an essential part of any proposal to legalize a currently illegal drug. Second, for those still opposed in principle to mandatory regimes of this sort, we offer the possibility that the scheme could be voluntary. Those who wanted to use the card without having data collected regarding their purchases could do so, though at some cost. For instance, they might not be able to enjoy any of the *ex ante* savings to which they might otherwise be entitled through their pension plans. Similarly, they might be disallowed from collecting damages from the system for any smoking-related illness or injury that they experienced.

c. *Damages*

Assuming a claimant proves causation, how much should that person receive? There are two general sorts of losses that might be compensated, economic losses and intangible losses. Taking deterrence as our only goal, an ideal smokers’ compensation scheme would, at least in an abstract world resembling an economist’s model, award full compensation for both economic and noneconomic harms caused by cigarettes. In the real world, however, the picture is clouded by a number of complicating political and administrative considerations. In our forthcoming article (with Michael Zamore),⁵⁵³ we will lay out some of those factors and their implications for the types of injuries that should be compensable and the extent of compensation. For now, we

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552. For instance, representatives of manufacturers developing technologies for accurate fingerprint verification claim that the data they collect cannot be misused because fingerprints cannot be generated from the stored data. See Nairn, *supra* note 546, at 12.

553. See Hanson et al., *supra* note 40.

simply want to avoid any potential confusion by reemphasizing that the \$7.00 per pack figure that we came up with in Part III does not represent an accurate measure of the cost of cigarettes. Moreover, we do not take that figure to represent an approximate measure of the damages that would be paid by manufacturers under a smokers' compensation system.⁵⁵⁴

3. *Summary*

In this section, we have explored two possible ex post incentive-based regulatory systems. One uses the traditional court-based tort model as its starting point; the other looks to workers' compensation as a model. Either type of system may be able to avoid many of the problems with conventional regulatory responses to market failures, particularly if the information gathering necessary to make the system work were enabled by something like the cigarette card. We now turn to a discussion of the effects of an ex post incentive-based regime on the behavior of cigarette producers and consumers.

B. *What Might the Cigarette Market Look Like in a World with Ex Post Incentive-Based Regulation?*

1. *Safer Cigarettes and Safer Smokers*

If an ex post incentive-based approach—whether it be on the enterprise liability or smokers' compensation model—were to be successfully implemented, what might the cigarette market look like? There are many possible outcomes, and we do not pretend to be able to predict with any certainty which one would occur. Still, we can speculate about some of the possibilities. For example, if we assume that cigarettes can indeed be made substantially safer than they currently are, the cigarette market might look very different from its current form.⁵⁵⁵ Manufacturers would have an incentive to achieve the optimal mix of care levels (that is, investments in safer cigarette designs) and activity levels, which would be regulated through the price charged per pack. If the full costs of cigarettes were imposed on manufacturers, they might discover that the best means of achieving optimal product safety includes any of the following:

- Substantially reducing nicotine levels in cigarettes so as to reduce the lifetime amount of smoking by any given individual (that is, to allow smokers to quit more easily) while also reducing

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554. Cf. *infra* note 579 and accompanying text (discussing the appropriate measure of damages that cigarette manufacturers should pay).

555. For an illuminating recent attempt to imagine what may come of the emerging market in cigarette substitutes, see Warner et al., *supra* note 106, at 1088-91.

somewhat the levels of carcinogens and other dangerous substances found in cigarettes;

- Alternatively, substantially *increasing* nicotine levels, and moderately reducing carcinogen levels, to get the same result;⁵⁵⁶
- Substantially reducing or eliminating the carcinogens and other harmful ingredients while only moderately reducing (or increasing) the level of nicotine;
- Moderately reducing (or increasing) nicotine levels and moderately reducing carcinogen levels, but marketing cigarettes only to people over a particular age. Then, after a number of years, offering to help those smokers stop smoking or switch to some even less dangerous alternative “nicotine-delivery system”; or
- Developing a nicotine-free tobacco product (which, because of its lack of nicotine and relatively high price, consumers would use only sparingly) and producing an alternative, nontobacco, nicotine-delivery system that would be sold in high quantities and at low prices.

Which variant of those approaches manufacturers would pursue depends on a number of factors—such as the cost of developing technologies for removing nicotine and carcinogens from tobacco, the cost of developing alternative nicotine-delivery systems, and the effect on consumer demand of any change in cigarette design. Under an *ex post* incentive-based approach, the parties with the best information on all of those questions—the tobacco industry—would be given the incentives to make the right choices.

In addition to giving manufacturers incentives to choose the optimally safe cigarette design, an *ex post* incentive-based regime would give them incentives to market cigarettes to those consumers who are less likely to suffer long-term harm from smoking. For example, given that smokers who start at a very young age are significantly more likely to suffer the long-term health effects of smoking,⁵⁵⁷ manufacturers might well stop marketing their cigarettes to younger consumers. Indeed, they may even make substantial investments in preventing underage smoking.

If we combine both of these possibilities—safer cigarettes (whether they be less carcinogenic or less addictive or both) and safer smokers—we can imagine an *ex post* incentive-based regime dramatically reducing the costs imposed on society by cigarette smoking. Another, less likely possibility is that cigarettes simply cannot be made significantly safer and cannot be marketed in a way that is significantly safer than they currently are. If that were the case, even after the industry was forced to bear the full costs of smoking for some time, then the final outcome of an *ex post* incentive-based approach

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556. It might be that fewer cigarettes overall would be smoked if each cigarette provided more, rather than less, of the nicotine smokers crave.

557. See SURGEON GENERAL'S PROGRESS REPORT, *supra* note 3, at 44, 45 fig. 3

might be either that all cigarettes would be incredibly expensive (and thus consumed only by the wealthy, unless subsidized by the government) or that cigarettes would be priced out of the "legal" market entirely. In either case, the main remaining regulatory concern would be how best to deal with the black market for low-priced cigarettes.

2. *Black Market Cigarettes*

Some readers may be concerned that an ex post incentive-based regime would create a large black market in unregulated cigarettes. When cigarette prices rise once the full costs of smoking are imposed on manufacturers, there will be strong market incentives for someone to produce and sell illegal cigarettes that undercut those prices. For a number of reasons, we regard it as unlikely that an ex post incentive-based system would substantially increase black market concerns.

First of all, we should note that the potential for black market effects does not distinguish ex post incentive-based regulation from any other type of regulation. That is to say, any serious effort to regulate the market for cigarettes through command-and-control regulation would suffer from black market problems *at least* to the same extent as ex post incentive-based regulation would. In addition, depending on what we mean by "black market" cigarettes, an argument can be made that an ex post incentive-based system would *reduce* rather than increase black market concerns as compared with the status quo. For example, all underage smoking today arguably involves black market transactions, given that there are laws against selling cigarettes to underage smokers. If that is the relevant black market, we suspect that shifting to an ex post incentive-based regime would substantially *reduce* rather than increase the black market. Given that illegal cigarettes under our regime would likely be more expensive than under the current system, there would likely be far fewer underage smokers. Similarly, under an incentive-based regulatory regime, manufacturers' incentives would change dramatically. Whereas manufacturers under the current regime have many reasons to encourage, and no reason to discourage, the sale of their cigarettes to underage smokers,⁵⁵⁸ manufacturers under an incentive-based regime would have a strong incentive to ensure that purchasers of their cigarettes pay the full price so as to fund potential future damages claims. They would, in other words, seek to discourage black markets from emerging. Moreover, the threat of a black

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558. Cf. John Schwartz, '73 RJR Memo Sought Youth Market, GREENSBORO NEWS & REC. (N.C.), Oct. 4, 1995, at A1 (describing one manufacturer's considered strategy to attract young smokers). For similar reasons, tobacco manufacturers have an incentive to sell their cigarettes on black markets in other countries. See Raymond Bonner & Christopher Drew, *Cigarette Makers Are Seen as Aiding Rise in Smuggling*, N.Y. TIMES, Aug. 25, 1997, at A5; *Cigarette Smuggling Probe Eyeing Employees at RJR*, BOSTON GLOBE, Aug. 23, 1997, at A5.

market would increase manufacturers' incentives to design and market safer cigarettes with lower total costs. Such cigarettes could be sold at a lower price and could therefore eliminate some of the profit that would otherwise sustain a black market.

Perhaps the black market concern is not the effect on underage smoking but instead the effect of black market cigarettes on the efficacy of the ex post regulatory regime itself. On this view, the black market in question is the sale of cigarettes by companies that somehow expect to be able to avoid ex post liability for the harms caused by their cigarettes. If avoiding liability is possible, companies who expect to avoid liability would be able to undercut the prices charged by companies who participate in the system and who expect to pay their share of costs. As a result, the black market of unregulated cigarettes would grow and the legal, fully internalized market would shrink. How would manufacturers go about avoiding liability for the costs of their brands? For one thing, they might try to disguise the brand of cigarette they are selling (for example, by arranging to sell their cigarettes under a "front" brand name owned by a shell corporation of some sort, perhaps a foreign subsidiary), making it difficult to be identified. Similarly, they might engage in a version of "hit and run"—that is, selling cigarettes for a number of years, pocketing the profits, and then leaving the market before the health effects of that brand begin to manifest themselves.

Those types of black market concerns may not pose an insurmountable problem for ex post incentive-based regulation. First, both types of black market concerns are limited by the fact that consumers tend to be quite brand loyal⁵⁵⁹ and that entry into the cigarette market has long been notoriously difficult.⁵⁶⁰ Manufacturers may be unable to create significant demand for a new brand of cigarette in time to profit from that cigarette before removing it from the market. And insofar as there would remain a brand-disguising problem, the obvious solution would be to monitor the major cigarette manufacturers closely (perhaps even to audit them continuously) to keep track of what brands they were selling and what revenues they were receiving from those sales and then to impose stiff criminal penalties on companies (that is, on management) for attempting to disguise brands.⁵⁶¹ The hit-and-run

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559. See *supra* note 515 and accompanying text.

560. See Howell et al., *supra* note 254, at 9 ("The barriers consist primarily of the massive advertising expenditures necessary to achieve some level of brand recognition and the huge capital expenditures necessary to achieve the production efficiency scale enjoyed by the six major domestic cigarette manufacturers.").

561. In countries other than the United States, the principal black market concern appears to be the smuggling of illegal cigarettes into the country, often from the United States. See Bonner & Drew, *supra* note 558. Given the sheer size and market dominance of the U.S. cigarette manufacturers as compared with foreign manufacturers, domestically produced black market cigarettes seem more likely than foreign-made black market cigarettes. After the imposition of a strict ex post incentive-based regime on domestic manufacturers, however, there would be an increased incentive for foreign manufacturers to sell their cigarettes in the United States insofar as those companies might expect to avoid liability for the harms

concern, on the other hand, presents the issue of "judgment-proof" manufacturers and retroactivity, issues that are discussed below.⁵⁶² Basically, to deter hit-and-run cigarette manufacturers, liability must somehow be imposed on those companies, perhaps even on their shareholders, for the harms their cigarettes have caused. Manufacturers could be required either to post a bond or purchase full liability insurance coverage.⁵⁶³ In addition, it may be possible to tie the amount of compensation that would be provided through the smokers' compensation program to the number of legal cigarettes smoked by each individual claimant.⁵⁶⁴ If so, then consumers themselves might be given some incentive to eschew lower-priced black market alternatives. Such a solution, although partial, would be responsive to all potential sources of black markets.

Finally, note that the concern about black markets in cigarettes is in part motivated by the memory of Prohibition. The Prohibition analogy, however, is inapt. Cigarettes and alcohol are different in a number of important ways. To give one example, the production of low-cost alcoholic beverages can be accomplished on a reasonably small scale. Indeed, many people brew their own beer today, long after Prohibition's end. It is quite difficult (for us anyway) to imagine a substantial number of consumers being able to raise enough tobacco and manufacture enough cigarettes to be able to sustain even their own one-, two-, or three-pack-a-day smoking habits. Indeed, the work and money that such an operation would require would make buying the legal and regulated cigarettes (or just quitting smoking) attractive alternatives.⁵⁶⁵ In addition, cigarettes do not provide the intoxicating effects that help to explain the demand for alcohol and marijuana (even among those not addicted to them).

If policymakers are nevertheless concerned about the potential of incentive-based regulation to create a black market, they could respond by reducing the amount of the ex post fine imposed on the manufacturers. This would, of course, come at the expense of some deterrence; such is the tradeoff necessary to determine how much, if at all, to reduce the payments. Moreover, so long as the *relative* costs imposed on each manufacturer varied according to the relative social costs caused by that manufacturer's brand, some of the care level and activity level deterrence benefits of ex post incentive-based

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caused by their cigarettes. That problem is no different from the general issue of how to impose domestic product safety regulations (and products liability laws) on imported goods. Moreover, because under our proposed regime the giant domestic manufacturers would be hurt competitively by the lower prices of illegally smuggled cigarettes, they would have an incentive to assist in monitoring and preventing not only illegal smuggling of foreign cigarettes, but also illegal home-grown cigarette production.

562. See *infra* Subsection V.C.2.

563. See *infra* text accompanying notes 595-600.

564. Such a program would be reasonably simple to implement, for example, if the cigarette card were adopted. See *supra* Subsection V.A.2.b.

565. It might be argued that the widespread availability and use of marijuana is strong evidence that a black market in cigarettes would emerge. Many people do grow and smoke their own marijuana. But a marijuana smoker needs relatively little to satisfy her, unlike an addicted cigarette smoker.

regulation would be retained, even if the total amount of damages imposed on each manufacturer would be less than the total costs of that manufacturer's brand.⁵⁶⁶

C. *The Problem of Transition and the Case for Supplementary Ex Ante Regulation*

To this point, we have focused mostly on the disadvantages of command-and-control, performance-based, and ex ante incentive-based regulation and on the advantages of ex post incentive-based regulation—with special emphasis on the advantages of victim-initiated ex post approaches. Now we consider the principal complaints about ex post regulation. The first is essentially a transition question. The other three problems would present themselves even after the transition had been made to the new regime. In the process of discussing these potential problems, we identify the circumstances in which such a regime might benefit from being supplemented with (though not replaced by) command-and-control or performance-based regulations.

1. *Making the Transition to Ex Post Incentive-Based Regulation: The Retroactivity Question*

Even if we decide to adopt some type of ex post incentive-based regulation of cigarettes, how to make the transition to such a regime will present significant issues of implementation. The biggest transition question is to what extent we should impose on cigarette makers the costs of past cigarette smoking—that is, smoking that occurred before the adoption of the new regime. Although a full discussion of this issue is beyond the scope of this Article, we summarize the issue briefly here.

One way of putting the question is this: To what extent should cigarette companies be made retroactively liable today and in the future for the harms of past smoking? Surprisingly little has been written on the retroactivity question⁵⁶⁷

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566. If the cigarette card were adopted, there would be additional means of minimizing black markets. See *supra* text accompanying notes 548-549.

567. Defining the concept of "retroactivity" in this context involves an element of arbitrariness. For instance, retroactivity could mean applying the new regulatory regime to all cigarette-caused harms that are manifested after the regime is enacted, even if those harms were caused by cigarettes that were purchased and consumed before the new regime was adopted. That version of retroactivity could result in payments being made by manufacturers for harms whose symptoms become apparent many years after the exposure that gave rise to those harms. Alternatively, we could be somewhat "less" retroactive by requiring that the exposure have occurred within some set period before the adoption of the new regime. Or we could go in the opposite direction, even further back in time, and apply the new regime to all harms ever caused by cigarettes, even those harms that occurred and were manifested long before the regime was adopted, but for which the statute of limitations has not yet run. Of course, even the choice of a time limit for the statute of limitations is arbitrary. Finally, one could imagine a "completely" retroactive version of ex post incentive-based regulation that would apply to all harms ever caused by cigarettes, even for cases in which the statute of limitations has run and the victim is long since dead. All of those options might reasonably

in the specific context of cigarettes,⁵⁶⁸ although that may change as Congress begins to focus more closely on the issue. One of the few scholars to have written on the topic, Gary Schwartz, has argued that applying a rule of absolute manufacturer liability retroactively in the cigarette context would have no beneficial deterrence effects and would instead have the negative consequence of bankrupting the tobacco industry. He acknowledges that *prospective* absolute cigarette-manufacturer liability (that is, liability only for harms caused by cigarettes produced after the adoption of the new rule) might have some deterrence benefits.⁵⁶⁹ But, he argues, there would be no additional deterrence benefits to applying the rule retroactively.⁵⁷⁰ Indeed, he argues that applying absolute liability retroactively would only destroy the cigarette industry, thus eliminating future cigarette sales as a potential source of compensation for those harmed by smoking.⁵⁷¹

We have two general responses to Schwartz's conclusions. First, he seems to ignore the deterrence benefits of the precedent that would be set for other industries. The precedent would be that in circumstances such as this—when it is determined that a product causes an enormous level of externalized harm—the manufacturers of that product will be forced to internalize those costs, even if those costs occurred in the past. If the government could adopt such a rule, and could credibly commit to apply it to all future situations that fall within the scope of the rule, the effect would be to force manufacturers to take into account the full social costs caused by their products.⁵⁷²

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be called retroactive. Where one chooses to draw the retroactivity line will depend on issues of practicality. We do not attempt to defend one of these versions of retroactivity over the others in this Article, though we would probably agree that the practical problems associated with the most extreme versions of retroactivity outweigh whatever benefits those approaches might provide.

568. There are a few exceptions. See, e.g., Ausness, *Cigarette Company Liability*, *supra* note 48, at 950-52 (discussing the retroactive liability of the industry in the context of the failure-to-warn cause of action).

569. See Schwartz, *supra* note 28, at 157.

570. See *id.*

571. See *id.*; see also Gary T. Schwartz, *New Products, Old Products, Evolving Law, Retroactive Law*, 58 N.Y.U. L. REV. 796, 825 (1983) (arguing that applying strict products liability for harms caused by products manufactured in the past has no deterrence benefits).

572. See Louis Kaplow, *An Economic Analysis of Legal Transitions*, 99 HARV. L. REV. 509, 527-35 (1986). Kaplow was the first to provide a detailed argument for the proposition that, in all situations involving legal transitions, there is a strong efficiency argument favoring full retroactivity. See *id.* at 615-16. One way of putting the argument is that uncertainty about future government policy is no different from market risks of various sorts. Because we generally allow market risks to be allocated through private risk-transfer and risk-sharing arrangements, we should do so as well with respect to government risk, unless there is a good argument for doing otherwise. That would mean no special transition relief to protect parties from the effects of changes in government policy. See *id.* at 550-66. Kaplow's analysis applies to all legal transitions; shifts in common law tort rules are but one example that he discusses in particular. See *id.* at 598-600.

As Kaplow points out, however, his thesis explicitly relies on a number of important assumptions. See, e.g., *id.* at 520-21 (stating his assumptions that the transition policy was well-known in advance and will be followed consistently in the future, that the reforms themselves are desirable, and that substantive policy decisions are not themselves affected by the choice of transition policy). In addition, throughout most of his efficiency analysis, Kaplow assumes away a number of "institutional concerns" that could serve as justifications for transition relief in some contexts. See *id.* at 566-76 (relaxing some of those assumptions

The principal incentive benefit of applying our proposed ex post incentive-based regime retroactively would not be the effects on the tobacco industry itself, but the effects on *nontobacco* industries that are watching the handling of the tobacco situation by Congress and the courts. A decision in the tobacco case to apply the new regime retroactively would send a message to nontobacco product manufacturers. The message would be something like the following: "If you manufacture a product that is someday discovered to produce anything like the external harm caused by cigarettes, this could happen to you too."⁵⁷³ Given the existence of uncertainty regarding whether their particular products might become subject to significant government regulation, *all* product manufacturers would have a greater incentive to make optimal investments in product safety and to charge the appropriate price for their products.⁵⁷⁴

It may be, of course, that how the proposed incentive-based regime treats the harms of past smoking will not be taken as a precedent for how other industries will be treated. It may be, for example, that the circumstances in the cigarette context are sufficiently unusual as to blunt any deterrent message for nontobacco industries. On the other hand, it may be that, precisely because the cigarette industry is involved—with all of its lobbying clout—the deterrent message to other industries would be especially strong. Again, this is a very complex issue, and we do not attempt to resolve it here. As a practical matter, however, even if our handling of the transition issue in the cigarette context were to provide *some* precedential effect, we would not advocate trying to impose *all* of the past harms of cigarette smoking on cigarette manufacturers.⁵⁷⁵ Nevertheless, it is of critical importance—for incentive

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and suggesting that future analyses of legal transitions should focus on such institutional concerns)

573. Cf. *id.* at 599-600 (describing the incentive benefits of applying evolving tort law principles retroactively in the product context).

574. That these incentives would be efficient assumes, of course, that the regulatory shift—toward ex post incentive-based regulation—is a move in the efficient direction. If we grant that assumption, Kaplow would seem to reach the same conclusion as we do—at least regarding a shift from no regulation to a system of victim-initiated ex post incentive-based regulation such as enterprise liability

Common law evolution of tort doctrine . . . seems best served by a transition policy providing no relief or mitigation for past investments and actions. The economic analysis of incentives presented . . . suggests that such a policy would promote efficiency, and the additional consideration of market imperfections and institutional factors does not appear to warrant a contrary conclusion.

Id. at 602 (footnote omitted). If, however, the anticipated shift in regulatory regimes is thought to be inefficient, the optimal transition rule would be whatever most inhibits, and minimizes the effects of, the shift. See *id.* at 521. Given, therefore, that the desirability of a retroactive transition policy depends on the desirability of the proposed change, the initial determination that the new rule is superior to the old rule assumes added importance.

575. See *supra* note 567 (suggesting that we should not adopt the most extreme, i.e., most backward looking, definition of retroactivity). To get a rough sense of the staggering size of the harm caused by smoking over the years, the following thought experiment might be helpful. We calculated *supra* Table 1 the full social cost of a pack of cigarettes at the current levels of production to be nearly \$700. Approximately 24 billion packs of cigarettes are sold in the United States each year. See *Tobacco Settlement Hearings*, *supra* note 442 (statement of Jeffrey Harris). That amounts to \$168 billion in costs per year. If we took just the past ten years of cigarette consumption, then, and assumed that cigarette

reasons—that we impose at least some of those costs on the manufacturers, in addition to a substantial portion of future costs. That is, without an effort to impose some of the past harms on cigarette companies, the promise to apply such a transition policy on other, future cases loses credibility.⁵⁷⁶

Schwartz's second objection to holding cigarette companies retroactively liable involves the likelihood of the industry's bankruptcy.⁵⁷⁷ At least from a theoretical deterrence perspective, however, that possibility is not an obvious problem. In fact, the eventual bankruptcy of the current cigarette companies may be necessary in order to produce the sort of deterrence effect for other industries that we just described. That is, if existing cigarette companies simply do not have sufficient assets to cover the liability that is imposed on them by the new *ex post* incentive-based regime, those companies *should* probably be forced out of business. If the demand for cigarettes after the shift to an *ex post* incentive-based regulatory regime is sufficient to maintain the market for cigarettes notwithstanding the increase in prices, the bankruptcy of the current companies would mean only a change in ownership of those companies. The change in ownership might be from the current shareholders to the claimants (that is, the smoking victims) themselves. Or it might be from the current owners to some new group of investors. Either way, such a result would have the beneficial effect of sending a message to stakeholders in other industries that they run the risk of losing the entire value of their investment if their product is found to have caused large-scale harm for many years.⁵⁷⁸

Whether the current bankruptcy laws are the most efficient way of dealing with companies that become insolvent is a separate question on which we do not here take a position. The relevant question instead is whether there should

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production in the United States has remained roughly constant over that time, that would amount to \$1.68 trillion of costs. Trying to shift an amount that large from one set of parties in our economy (i.e., the cigarette manufacturers, their shareholders and creditors, their insurers, and their employees) to another set (i.e., smokers, families of smokers, first-party insurers of smokers, and the like) would present insuperable judgment-proof problems as well as administrative problems. In any event, it seems clear that a *fully* retroactive shift to *ex post* incentive-based regulation is simply not a politically practical possibility.

576. Interestingly, notwithstanding his arguments against holding cigarette makers liable retroactively, Schwartz would not seem to have "fairness" qualms with doing so. For example, he observes *both* that the evolution in tort law toward enterprise liability has been much more gradual than some commentators have suggested (such that expansion of liability to include product manufacturers could hardly have caught product manufacturers entirely by surprise), *see* Schwartz, *supra* note 571, at 797-811, *and* that judicial decisions in tort cases have almost always been (and generally continue to be) applied retroactively, *see id.* at 816-17. Thus Schwartz certainly does not view retroactive application of products liability law generally as unfair. *See id.* at 819 ("[M]ost of the retroactivity implicit in product liability opinions is not vulnerable to the charge of having subverted justified reliance.").

577. *See* Schwartz, *supra* note 28, at 157 ("A rule of absolute liability, to the extent that it is applied retroactively . . . would quickly wipe out all existing cigarette companies.").

578. It is conceivable that this possibility has already been taken into account *ex ante* by investors in cigarette companies, in which case the relatively low prices that they paid for their shares (and the relatively high returns they have enjoyed in the meantime) were compensation for the likelihood of the outcome that we are recommending. One reason, however, that the market may not have capitalized this risk into the price of cigarette shares is that investors may have been (and may still be) betting on the extraordinary political clout of the cigarette industry. *See supra* note 11.

be some additional protection, besides the normal bankruptcy laws, for companies whose largest liabilities happen to result from ex post incentive-based damage payments (such as products liability claims). We see no obvious deterrence reason that such special protection would be warranted.

Of course, political reality may require that, for any new regulatory regime to be adopted, some protection must be given to the existing cigarette companies. If that is so, an ex post incentive-based regime could be adjusted to accommodate that aim. For example, the damages assessed against manufacturers could be reduced to the amount necessary to avoid the companies' bankruptcy. One could ask how much the existing domestic cigarette companies could afford to pay and still stay in business.⁵⁷⁹ So long as, within the appropriate annual cap, each manufacturer paid its relative share (based not only on its market share but also on the *relative harm caused by that company's brands*), the deterrence benefits of ex post incentive-based regulation could still be achieved.

Perhaps, however, the bankruptcy concern is that, if the tobacco industry were put out of business, we would lose the principal source of revenues for

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579. Some have suggested that the maximum amount would be \$7.6 billion per year, which approximates the industry's current annual profits. See Jeffrey E. Harris, *American Cigarette Manufacturers' Ability To Pay Damages: Overview and a Rough Calculation*, 5 TOBACCO CONTROL 292, 292 (1996). As Professor Harris has observed, however, \$7.6 billion dramatically understates what the industry could afford. Moreover, he shows that, to arrive at an accurate estimate of the industry's real ability to pay, we must take into account the industry's ability to raise its prices in response to this new liability. See *id.* According to Harris's rough calculations, the "monopoly profit-maximizing price of cigarettes in the United States is currently about \$4 per pack. At such a price, annual pre-tax profits would exceed \$32 billion annually." *Id.* These calculations are based on assumptions about the shapes of consumers' demand curves for cigarettes and on the assumption that the existing domestic producers would not face competition from new market entrants. See *id.* at 293. If the new regime allowed competition by new market entrants, competition would limit the existing companies' ability to raise their prices to fund the ex post payments.

Even Professor Harris's calculations, however, may miss the point. First, he assumes that the industry will be allowed to engage in monopoly pricing. Although we concede that perfect competition in this market is unlikely in any event, our hope still is to encourage competition among cigarette companies as much as possible, along all dimensions including safety. Second, and perhaps more important, whereas it may be the case that \$32 billion per year (or some smaller amount assuming competition is allowed and encouraged) roughly approximates the *maximum amount of revenue* that can be collected from the cigarette industry via ex ante or ex post liability, the maximum price per pack at which cigarettes could trade without completely bankrupting the industry is probably much higher than \$4.00. (Indeed, cigarette prices in some countries have been reported to be as high as \$7.00 per pack in recent years. See *infra* note 582.) Prices higher than \$4.00 per pack may not maximize the cigarette revenues available to be used to compensate injured smokers or for whatever purpose, but those prices might more fully reflect the expected costs of cigarettes. And that—internalizing those costs, or coming as close to doing so as we can—is what our proposed ex post incentive-based regime is intended to do. It is not intended to maximize tax revenues from cigarettes.

We do not mean to suggest that, under our proposed regime, cigarette prices would necessarily rise higher than \$4.00 per pack, although that is a possibility. The equilibrium price of cigarettes under our proposal—if the only goal is to achieve as much deterrence as is practically and politically possible—would be a function of a number of factors, such as how responsive cigarette companies are to the incentive to make safer cigarettes. At the very least, if maximally achievable deterrence is the only goal, it is unclear that the ultimate equilibrium price of cigarettes would be the price that maximizes revenue.

compensating claimants who smoked before the industry failed.⁵⁸⁰ Thus, if the industry were rendered bankrupt by the claims of those whose injuries were, at the time of the shift to the new regime, already manifest, there would be no smoking revenues available to provide compensation for future claimants, whose injuries were not yet manifest. (It should be noted that, under our proposed regime, victims of smoking would not be able to recover from companies who never sold them cigarettes—for example, new market entrants.)⁵⁸¹

Our response is twofold. First, a bankruptcy court could, in theory, protect future cigarette claimants to some extent by setting aside a portion of the bankrupt company's assets (including future income potential) to cover such claims. Second, insofar as those assets are not sufficient to satisfy all of the claims, the excess liability could be covered through some compensation regime other than the ex post incentive-based system—for example, through some type of private or public first-party insurance. Thus, any such excess liability poses a question of choosing the optimal system of compensation rather than the optimal system of deterrence, which has been our focus.

Schwartz's bankruptcy concern might be that the prospective effect of absolute manufacturer liability would mean the end of the cigarette industry altogether. If that is so, our reaction is again twofold. First, it seems extremely unlikely. It is true that new entrants into the cigarette market (if we structure the system to allow new entrants) would have to charge a price that would include the full expected costs associated with their brand of cigarettes. At least initially (before safer designs were developed), this would be a sizeable amount. But even at that price, it is conceivable that there would continue to be a legal market for cigarettes.⁵⁸² Moreover, as manufacturers brought safer designs to market, the price would drop commensurately. Alternatively, it might be the case that after the adoption of the new regime and the

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580. Cf. Schwartz, *supra* note 28, at 156 (describing problems with liability-based compensation schemes, including the problem of companies going out of business after the liability regime is implemented).

581. It is worth emphasizing this point: The retroactive portion of the new ex post incentive-based regime would, in theory, not be imposed on new entrants into the cigarette market. A new company would nonetheless be affected by the new regime because liability would also be applied prospectively. Hence, a new company—in making its decisions regarding what investments to make in producing safer cigarettes, how much to charge for its cigarettes, and how to market them—would be induced by the new regime to take into account all the expected harms that its products will cause.

582. See Harry Berkowitz, *Jolt in Cigarette Price Eyed as Teen Cure: Senators Ready Bill on Immediate \$1.50-Per-Pack Hike*, *NEWSDAY*, Sept. 24, 1997, at A51 (noting average prices of cigarettes in various countries: Denmark, \$5.07; United Kingdom, \$4.40; Australia, \$4.08; France, \$3.51; Canada, \$3.34; and Switzerland, \$3.16); R.C. Longworth & Tim Jones, *If Tobacco Deal Becomes the Law, Questions Abound on Who Will Pay*, *CHI. TRIB.*, June 22, 1997, at C11 (noting that the average price of cigarettes in Norway is \$7.00); John Mintz, *Prices of Tobacco Company Stocks Surge on Report of Negotiations: Threat of Lawsuits Had Depressed Shares of Cigarette Makers*, *WASH. POST*, Apr. 17, 1997, at A8 (noting that there is no lack of smokers even though the average price of cigarettes in Europe and some Third World countries is \$4.00 to \$5.00 per pack); Susannah Vesey Rauscher, *Tobacco Under Fire*, *ATLANTA J. & CONST.*, Sept. 1, 1996, at 8D (noting that the Canadian price was \$5.53 per pack in 1991).

development of new, safer cigarette designs, consumers would not be willing to pay the price of cigarettes. Such a scenario would, indeed, spell the end of the *legal* United States cigarette market. That result, in and of itself, would be fine. In fact, it would be precisely the desired outcome (given the unwillingness of consumers to internalize the costs).⁵⁸³

2. *The Judgment-Proof Problem*

Perhaps the most troublesome disadvantage of an ex post incentive-based regulatory system is the so-called judgment-proof problem. Whenever manufacturers do not have sufficient assets (net of non-tort liabilities) to cover all the potential harms caused by their products, those manufacturers are said to be judgment proof. To the extent manufacturers are judgment proof, any ex post incentive-based regime—such as enterprise liability or smokers' compensation—could not have its full deterrent effect.⁵⁸⁴ Thus, enterprise liability or smokers' compensation can provide optimal accident-prevention incentives only if manufacturers have assets at least equal in value to the magnitude of the loss they can potentially cause. If the value of those companies' assets is smaller than the magnitude of the threat of loss they pose, then the companies' care level analyses would be skewed, their incentives to invest optimally in accident prevention would be impeded, and activity levels would be nonoptimal.

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583. The real problem in such a scenario would be the possible rise of an illegal or unregulated cigarette market. As we discussed *supra* Subsection VB.2, however, the adoption of ex post incentive-based regulation is more likely to cause a nontrivial price increase in cigarettes, some safety innovation on the part of cigarette companies, and some reduction in overall cigarette consumption. There might be, under such a system, some increase in certain kinds of illegal cigarette sales; but there also might be a decrease in other types of illegal cigarettes—such as cigarettes being sold to children. See *supra* note 558 and accompanying text. That outcome seems quite plausible, and considerably superior to the current state of affairs. Moreover, some versions of ex ante, command-and-control, or performance-based regulation could be used to supplement the ex post incentive-based system to address the instances of illegal cigarette sales.

584. See SHAVELL, *supra* note 423, at 167-68 (observing that, when injurers cannot pay fully for the losses they cause, "[t]heir incentives to take care may therefore be inadequate, since they will treat losses that they cause and that exceed their assets as imposing liabilities only equal to their assets"). Although the basic idea of the judgment-proof problem had been understood at some level prior to Shavell's work, see Wittman, *supra* note 423, at 204; Comment, *The Case of the Disappearing Defendant: An Economic Analysis*, 132 U. PA. L. REV. 145 (1983), it was Shavell who formalized the argument and coined the term "judgment proof problem." SHAVELL, *supra* note 423, at 167-70, 179-82; Steven Shavell, *The Judgment Proof Problem*, 6 INT'L REV. L. & ECON. 45 (1986). Many others have discussed the problem since. See, e.g., Henry Hansmann & Reinier Kraakman, *Toward Unlimited Shareholder Liability for Corporate Torts*, 100 YALE L.J. 1879, 1882-90 (1991) (explaining care level and activity level inefficiencies associated with the judgment-proof problem caused by limited shareholder liability); Kyle D. Logue, *Solving the Judgment-Proof Problem*, 72 TEX. L. REV. 1375, 1375 & n.2 (1994) (describing the judgment-proof problem and its relation to the deterrence and insurance goals of tort law); Lynn M. LoPucki, *The Death of Liability*, 106 YALE L.J. 1 (1996) [hereinafter LoPucki, *The Death of Liability*] (describing numerous strategies, including parent-subsidary ownership structure, that firms are using to render themselves judgment proof); James J. White, *Corporate Judgment Proofing: A Response to Lynn LoPucki's 'The Death of Liability'*, 107 YALE L.J. 1363 (1998) (providing evidence that LoPucki drastically overstates the extent of the judgment-proof problem); Lynn M. LoPucki, *Virtual Judgment Proofing: A Rejoinder*, 107 YALE L.J. 1413 (1998) (responding to White's claims point by point).

If one were to get serious about applying the new regime retroactively in the strongest possible sense (that is, holding cigarette manufacturers liable for all of the past harms of smoking), those manufacturers would almost certainly be judgment proof with respect to a large fraction of those costs. The sum of the costs of all past smoking is almost beyond comprehension.⁵⁸⁵ And the value of the assets of existing and past cigarette manufacturers would be tiny in comparison, perhaps only the value of the companies' machinery and equipment in the hands of the new entrants to the cigarette market, who, not being saddled with the liabilities for past harms, would likely be the highest bidders for those assets.⁵⁸⁶

But the judgment-proof problem does not arise only in the case of retroactive liability. A significant judgment-proof problem could arise in connection with the transition to an ex post incentive-based regime even if that regime were applied only to harms arising from future cigarette consumption. In that situation, there would be a strong incentive for new entrants in the cigarette market not to maintain capital reserves sufficient to cover their future regulatory liabilities. Since those liabilities would require payment (sometimes far) in the future, the incentive would be to enter the market and sell relatively cheap cigarettes—that is, cigarettes that do not include the premium for future ex post damage payments—for a number of years and then, when the first claims against the company under the ex post regime began to roll in, to declare bankruptcy. A company following that strategy could price its cigarettes at a substantial discount compared with the cigarettes of other companies and could conceivably generate enormous profits before the jig was up—before the first ex post claims were actually filed against it.⁵⁸⁷ For the plan to work, the companies would have to pay out the extra earnings over the years in the form of dividends to their shareholders. Protected by the doctrine of limited shareholder liability, these shareholders would be able to pocket the money without worrying about the company's impending future regulatory liabilities.

This judgment-proofing strategy is not just a theoretical possibility. Indeed, the existing tobacco companies—like some other industries—have, at least to some extent, already exploited the corporate form to limit the extent of their potential liability.⁵⁸⁸ Moreover, the temptation for existing cigarette

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585. See *supra* note 575.

586. Thus, bankrupting the existing tobacco companies would provide more deterrence than not bankrupting them would, but it would provide less deterrence than if those companies had assets sufficient to cover all of their liabilities.

587. We discuss this possibility briefly *supra* text accompanying notes 561-564.

588. See Hansmann & Kraakman, *supra* note 584, at 1881. Tobacco firms have publicly acknowledged that the purpose of organizing themselves as subsidiaries has been to evade tort liability. See *id.* at 1881 n.3. It was reported that Phillip Morris, for example, created its holding company "to better insulate each business from obligations and liabilities incurred in unrelated activities." *Id.*; see also LoPucki, *The Death of Liability*, *supra* note 584, *passim* (describing numerous strategies, including parent-subsidiary ownership, by which firms can, and according to the author do, render themselves judgment proof).

companies to take steps to judgment proof themselves will increase as smoking plaintiffs begin to have more success in courtrooms and as Congress begins seriously to weigh alternative regulatory regimes.

It is sometimes argued that command-and-control regulation is less susceptible to the judgment-proof problem than is ex post incentive-based regulation.⁵⁸⁹ The justification for this view is straightforward: Command-and-control regulation can be enforced by means other than ex post liability or fines. For example, a command-and-control regulator can impose care level standards on a manufacturer ex ante and then enforce those requirements through some type of ex ante fine or injunction, perhaps backed up with a threat of criminal punishment. None of these mechanisms is as susceptible to the judgment-proof problem as are ex post damages.⁵⁹⁰

Before we describe the ways in which the judgment-proof problem might be mitigated, we should first make one important, often-overlooked, observation: Ex ante forms of regulation suffer from a judgment-proof problem akin to the one associated with ex post regulation. If, under a command-and-control or performance-based regime, the regulated manufacturer knows that its assets are considerably less than any potential ex ante fine, the judgment-proof problem would reduce the manufacturer's incentive to abide by the regulations. Insofar as the regulator has alternative, nonmonetary means of punishing such a manufacturer (e.g., shutting the firm down or imposing criminal sanctions), however, and insofar as the regulator can detect the manufacturer's violations before injuries occur, the judgment-proof problem will not be as significant for ex ante regulation as it is for ex post regulation.

In any event, there are a number of potential responses to the judgment-proof problem that, if successful, would strengthen the case for ex post incentive-based regulation (and that, given the potential judgment-proof problems associated with ex ante regulation, should be considered in any case).⁵⁹¹ One solution would be to eliminate or weaken the doctrine of

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589. See, e.g., SHAVELL, *supra* note 423, at 279-82. Shavell, *supra* note 423, at 360-63, 369-70.

590. See SHAVELL, *supra* note 423, at 279-82. Shavell, *supra* note 423, at 361-63. Shavell also demonstrates that, under certain assumptions, an ex post command-and-control approach—namely, a fault-based tort system—can pose less of a judgment-proof problem than does a no-fault (or enterprise liability) system. See SHAVELL, *supra* note 423, at 281-82.

591. There is a possibility that some portion of the tobacco industry's potential liability would be covered under its property-casualty insurance policies, although there is controversy on this point. See Michael Prince, *Louisiana Hopes Insurers' Defense Stings Big Tobacco*, BLS INS., Mar. 31, 1997, at 1, see also Leslie Scism, *Tobacco Negotiators May Try To Target Insurers*, WALL ST. J., May 28, 1997, at A3 (reporting that state attorneys general have established a committee to investigate the extent of property-casualty insurance coverage of cigarette companies' potential liabilities). Property-casualty insurance companies insist that the liability policies they have sold to tobacco companies over the past 30 years contain exclusions that clearly preclude coverage for the harms caused to smokers and third parties by cigarette smoke. See Scism, *supra*. Moreover, it has been suggested that the coverage issue may be less clear with respect to suits brought by states than with respect to personal injury suits brought by individuals. See Prince, *supra*, at 1. In any event, few if any United States tobacco companies have yet sought products liability coverage from their insurance carriers. See Scism, *supra*. According to some insurance executives, however, the reason tobacco companies have not involved their insurers in the recent

limited shareholder liability. Cigarette claimants could then go after the assets not only of the cigarette companies themselves but also of the tobacco company shareholders. Such an approach would, of course, require a dramatic change in current corporate law. Professors Henry Hansmann and Reinier Kraakman, however, have made just such a proposal, advocating a form of pro rata unlimited shareholder liability on efficiency grounds.⁵⁹² Their proposal would, among other things, reduce the incentive-dulling effects of the judgment-proof problem in some contexts. Implementing such a regime, however, would pose sizeable administrative difficulties, not the least of which would be the problem of identifying which shareholders to go after (current shareholders, past shareholders, or both) and then locating and securing judgments against all of them. That problem would be especially acute given that shares in publicly traded companies frequently change hands on the open market.⁵⁹³ Whether or not the benefits of unlimited shareholder liability would outweigh the costs as a general matter (a matter on which we do not express an opinion), such a rule is, in our view, extremely unlikely to be adopted.⁵⁹⁴ Therefore, we do not consider the option further here. Instead, we consider briefly two other reasons that the judgment-proof problem, at least for future cigarette-caused harms, may not be an insurmountable problem for the transition to an ex post incentive-based regime.

First, the judgment-proof problem, at least for future harms, may not be as large as we have been suggesting. Specifically, accountants and nonequity creditors play an important role in monitoring companies and in preventing potential judgment-proof problems.⁵⁹⁵ To the extent cigarette manufacturers have to borrow money from banks (for example, to finance the purchase of equipment or inventory), those manufacturers' abilities to judgment proof themselves would be substantially limited. The lenders, whose interests are more aligned with those of the smokers' compensation claimants than with the interests of the tobacco equity holders, could protect themselves by insisting on loan covenants allowing them to put pressure on the companies if their liability-to-asset ratios rise too high. To enforce the covenants, the lenders

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litigation is that doing so would require them to relinquish some control of the lawsuits, including decisions regarding settlement, to the insurers. *See id.* Regardless, the stakes of this controversy are large.

592. *See* Hansmann & Kraakman, *supra* note 584.

593. Hansmann and Kraakman are aware of these administrative-cost objections to their proposal, as well as other objections. They suggest reasons that those objections are overstated. *See id.* at 1899-901.

594. In fairness, Hansmann and Kraakman's proposal is not entirely unrealistic in the cigarette context, if the rule of unlimited shareholder liability is, as they recommend, applied prospectively only. *See id.* at 1923. It is conceivable to imagine that, if Congress were to adopt a system of ex post incentive-based regulation of cigarettes (especially a smokers' compensation regime in which damages were limited and relatively certain), it would also adopt a rule that required all future shareholders in cigarette companies to be, in effect, excess insurers on a pro rata basis for the tobacco companies. There would still be administrative costs to keeping track of shareholders, but that problem may not be insurmountable.

595. *See* White, *supra* note 584, *passim* (giving reasons that Lynn LoPucki's claim that corporations are judgment proofing themselves on a large scale is overstated).

could rely on periodic audits to monitor those ratios.⁵⁹⁶ If those ratios were to rise, the lenders at some point would insist that the companies retain more of their earnings to fund the future smokers' compensation claims. If the companies refused, the lenders would resort to the remedies in their loan covenants. Ultimately, the cigarette companies who try this "hit-and-run" or judgment-proofing strategy may still go bankrupt, but, because of the presence of the monitoring lenders, that bankruptcy would come much sooner than otherwise, a fact that would reduce the overall profitability of the judgment-proofing strategy.⁵⁹⁷

To the extent a judgment-proof problem remains, there is a potential regulatory response short of unlimited shareholder liability. All cigarette companies wishing to sell cigarettes in this country could be required to show proof of financial responsibility for the potential harms that their products might cause.⁵⁹⁸ Financial responsibility could take the form of a bond posted with some agency of the government to be invested and held in trust on behalf of future victims of smoking-related illnesses. Or it could take the form of a liability policy with a highly rated property-casualty insurance company, a policy that would be required to include language specifically and fully covering any ex post liability imposed on the cigarette manufacturer.⁵⁹⁹ Most simply, financial responsibility could require that a company wishing to sell cigarettes show that it has sufficient capital to cover the expected costs associated with its product over time.⁶⁰⁰ If, in the end, despite all the potential reform efforts, the judgment-proof problem persists, it may be

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596. Under our proposed smokers' compensation regime, at least some portion of the companies' liabilities would be fairly predictable, based on the volume of sales and the available data on the link between smoking and various illnesses. Therefore, the lenders should be able to determine liability-asset ratios, at least roughly.

597. Because cigarette companies generate such enormous cash revenues, it may be that those companies tend not to be heavy borrowers, and therefore there might be less monitoring by lenders than occurs in other industries.

598. Hansmann and Kraakman suggest this option as a supplement to (but not a substitute for) unlimited shareholder liability. See Hansmann & Kraakman, *supra* note 584, at 1927.

599. It could be argued that cigarette companies would have difficulty finding liability insurers who would be willing to write such policies. See *supra* note 591 (discussing the fact that existing liability policies owned by cigarette companies contain specific exclusions for such claims). One of the reasons that insurers in the past may have insisted on such an exclusion, however, is the uncertainty with regard to the overall size of the potential liability. Under a smokers' compensation regime, the size of the companies' smoking-related liabilities would be more predictable than under the current regime; therefore, insurers may be more willing to write the coverage. It may be the case that legal uncertainty is not the reason for the exclusions in previous and existing liability policies. The reason for such exclusions might be the lack of demand from cigarette companies, who expect ultimately to be judgment proof. See SHAVELL, *supra* note 423, at 240-42 (observing that being judgment proof undercuts the incentive to purchase liability insurance and suggesting that mandatory liability insurance may be an appropriate response).

600. This sort of capitalization requirement is not unusual. Virtually all corporations in European countries are subject to capitalization requirements. See Clark D. Suth, *Federalism and Company Law: A "Race to the Bottom" in the European Community*, 79 GEO. L.J. 1581, 1584 n.9 (1991). In the United States, insurers are subject to similar reserve requirements. See S.S. HUEBNER ET AL., *PROPERTY AND LIABILITY INSURANCE* 607-14 (3d ed. 1982).

appropriate to supplement ex post incentive-based regulation with some type of ex ante regulation.

3. *Widely Dispersed Harm: Dealing with Public ETS Exposure*

Another potential disadvantage of victim-initiated ex post incentive-based regulation is the possibility that the harm caused by the product may be so widely dispersed that no single victim would have an incentive to incur the comparatively large costs of bringing a claim ex post.⁶⁰¹ If that were the case, the deterrence benefits of such a regime would not be realized. Perhaps the clearest case of a widely dispersed harm problem would be air pollution. The costs of air pollution resulting from automobile and other types of emissions could not conceivably be internalized to polluters through a victim-initiated ex post regime. Who would have an incentive to bring such a claim? And against whom exactly would they bring it? To deal with the external costs associated with many types of pollution, therefore, some form of government-initiated ex ante regulation is necessary. The widely dispersed harm problem, however, should not generally be a serious concern in the cigarette context, at least with respect to the harms resulting from smokers' illnesses and deaths, because the magnitude of the harm caused to smokers themselves and to their family members would often exceed the costs of bringing the claims. In addition, under the type of regime we are imagining—where causation and size of damage are the only factual questions—the litigation costs for such claims may be reduced.

Nevertheless, with respect to some of the harms associated with public ETS exposure, such as the increased incidence of asthma, the dispersed harm problem may be substantial. The standard way in which victim-initiated ex post regimes respond to the dispersed harm problem is by the use of class action lawsuits; the dispersed harm issue therefore becomes an issue of civil procedure.⁶⁰² To the extent that the dispersed harm problem cannot be eliminated through the aggregation of claims, however, some state-initiated

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601. See Shavell, *supra* note 423, at 363, 370.

602. See Rosenberg, *supra* note 521, *passim* (arguing that a class-based proportional liability rule should be used to resolve mass exposure cases). One potential problem with the class action solution, however, is that it may often pose a deterrence problem like that posed by excise taxes: Because the class action mechanism would aggregate the claims of smoking victims (for example, victims of public ETS exposure) and would also likely end up apportioning damages to the cigarette industry according to market share, there would be the standard care level unraveling effect described above. See *supra* notes 450-454. Although the industry in the aggregate would be forced to pay for those smoking-related harms, manufacturers would have little or no incentive to invest in developing ways of reducing those costs because the costs would be distributed pro rata across the industry (rather than according to brand-specific causation). An alternative victim-initiated ex post approach in this setting would be to allow the claimants to recover against either their employers (in the case of workplace ETS exposure) or the proprietor of the public venue at which exposure took place (in the case of nonworkplace public ETS exposure).

regulatory approach may be a useful supplement to a victim-initiated ex post regime.⁶⁰³

There are other potential problems that are peculiar to the case of public ETS exposure. Indeed, the harms caused by ETS exposure in public settings—such as the workplace, restaurants, bars, movie theaters, and the like—are different in two important ways from the harms suffered by the smokers themselves.⁶⁰⁴ First, with public ETS exposure, it is considerably more difficult to determine brand-specific causation. A person exposed to ETS in her workplace or in restaurants will have greater difficulty demonstrating what portion of her overall ETS exposure was attributable to a given brand of cigarettes than, for instance, a person exposed to ETS in the home, whose exposure comes from one or two smokers and their brands. Thus brand-specific cost internalization to manufacturers for public ETS exposure may be extremely difficult.⁶⁰⁵ For this reason as well, therefore, there may be cause to supplement ex post incentive-based regime with other regulatory approaches.

Second, in most public ETS exposure situations, there are at least two, and potentially more, “detractable” parties—that is, parties who would be responsive to having smoking-related costs imposed on them: (1) the manufacturer; and (2) the owner of the relevant business (which would be the *employer* in the case of workplace exposure or the *proprietor* in the case of non-workplace public exposure, as in a restaurant). The presence of more than one deterrable party with respect to those risks raises the question of which party should be forced to bear those smoking-related costs. We might try to impose the public ETS exposure costs directly on the cigarette industry, either through a smokers’ compensation or enterprise liability approach. Alternatively, we might place the workplace ETS exposure costs on employers, and the non-workplace ETS exposure costs on the relevant business proprietors, thereby giving employers and proprietors the incentive to develop and introduce cost-effective restrictions on smoking in “public” settings (i.e., those outside the home) or to

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603. One possible state-initiated ex ante command-and-control alternative would be government-mandated restrictions on smoking in public settings. That alternative might also respond to concerns that, under a regime where the public ETS exposure costs are imposed on employer-proprietors instead of on manufacturers, the employers and proprietors might be judgment proof. Whether such employer-proprietor judgment proofing is likely to be a problem would depend on the extent to which employers have an incentive to provide an adequately funded (either through outside insurance or through internal, self-insurance funds) health care plan for their employees and on the extent to which proprietors have an incentive to carry adequate liability insurance. Cf. *supra* text following note 590 (explaining that judgment-proof problems may also reduce the efficacy of command-and-control and performance-based regulations).

604. When we use the term “workplace ETS exposure,” we mean the exposure of employees in the workplace to the passive smoke produced by other employees or by patrons of the employer. When we say “nonworkplace public ETS exposure,” we mean exposure of patrons at restaurants and the like to passive smoke produced by other patrons or by employees.

605. This difficulty of determining brand-specific causation in public ETS exposure situations may be somewhat reduced (though not eliminated) if the cigarette card, discussed *supra* Subsection V A 2 b, were introduced.

provide a separate, well-ventilated space where all public smoking could take place.

The choice of who should bear those costs depends upon who, as between employer-proprietor and manufacturer, would be in a better position to develop and implement cost-justified means of reducing public space ETS exposure. The employer-proprietor might be in the better position. On the other hand, if public ETS exposure costs were imposed on manufacturers, they might have the needed incentive to find a cost-effective means of removing all toxins in cigarettes, including those that contaminate passive smoke.⁶⁰⁶ Adding the public ETS exposure costs to the price of cigarettes through manufacturer liability might also have enough of an activity level effect that additional public-smoking restrictions would be unnecessary. Choosing between those two general approaches is, needless to say, not an easy call.⁶⁰⁷ Either approach,

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606. This manufacturer care level effect is possible even though the public ETS exposure costs probably could not be internalized to manufacturers on a brand-specific basis. Although there might be some unraveling effect (and hence we are unlikely to see the development of cigarettes that emit no ETS), there could still be a beneficial manufacturer care level effect, given that all of the *other* costs of smoking would be internalized to manufacturers on a brand-specific basis.

607. Interestingly, to the extent that employers are already providing health, life, and disability insurance coverage to their employees through group plans (and most employers do), it may be the case that a large portion of workplace ETS exposure costs are already borne to some extent by employers. With respect to workplace ETS exposure costs, employer-provided first-party health, life, and disability coverage *approximates* a form of voluntary (market-generated) ex post incentive-based regulation. The problem with relying purely on the market, with no government intervention, however, is that, given the existence of the market failures we described *supra* Parts II-III, we cannot be sure that voluntary employer-provided insurance arrangements will fully internalize all of the costs of workplace ETS exposure. For example, under the current system, employer-provided insurance generally fails to cover the nonpecuniary harms of workplace ETS exposure, which means those costs are not internalized to the employer at all. *Cf. supra* notes 292-295 and accompanying text (arguing that the market alone cannot be expected to internalize workplace ETS exposure risk).

To the extent that employer plans currently operate as an ex post incentive-based form of regulating workplace ETS exposure, it is understandable that some employers are already voluntarily attempting to restrict workplace smoking. Of course, as we indicated above, employers effectively bear many of the other smoking-related costs, too. *See supra* notes 247, 270, and accompanying text. Thus, it may also be in part to reduce *those* costs, and not just to reduce the workplace ETS exposure costs, that employers have voluntarily introduced workplace smoking restrictions. With respect to those other smoking-related costs, however, it seems clear that manufacturers, rather than employers or proprietors, are the cheapest cost avoiders. The main reason is that cigarette manufacturers, through care level and activity level adjustments, are in a position to minimize the costs of *all* smoking-related harms, not just the harms caused by smoking on the job or in other public spaces.

With respect to non-workplace ETS exposure—such as the ETS exposure of patrons of restaurants and bars—there is nothing approximating an ex post incentive-based approach to deterrence, either for pecuniary or for nonpecuniary harms to patrons. Thus, if we wanted to impose those costs on proprietors, we would need to adopt something along the lines of a “patrons’ compensation system” or “proprietor liability regime.” Again, we would not expect the market alone to internalize this sort of public ETS exposure, for all the reasons discussed *supra* Part II and *supra* Section III.A. Moreover, even if those particular market failures did not exist, it might still make sense to regulate public ETS risks. It may be, for example, that the loss of customers due to ETS is not large enough to make it worthwhile for many proprietors to do anything about smoking. In a world in which there is smoking allowed in most business establishments, firms will have an incentive not to become one of the few that impose smoking restrictions. New nonsmoking customers might not bother to shift to the smoking-restrictive business even if they were well-informed, because so many of the other public spaces they frequented would still be full of passive smoke. On the other hand, if a number of proprietors and employers could all agree to ban smoking, or to confine it to certain places, the strategy might work. But collective action problems may prevent that

however, could have substantial benefits over the command-and-control alternatives—such as banning smoking in all nonresidential buildings⁶⁰⁸—because they both rely on parties with better cost-minimizing information than regulators have.

D. *Summary*

This part considered two possible ex post incentive-based regimes and one specific method for getting the information necessary for effectively implementing any regulatory regime (but particularly an ex post incentive-based one). After briefly outlining the changes in manufacturer and consumer behavior we would expect under our proposed system, we suggested some ways to ease the transition to a new regime, cabining if necessary the full retroactive sweep of liability. We concluded that, to the extent there are factors that can weaken ex post incentive-based regulation as a means of correcting market failures, alternative approaches—such as command-and-control, performance-based, or ex ante incentive-based approaches—may be useful supplements. If, for example, we thought that judgment proofing might be a problem for some cigarette manufacturers but not others, it might make sense to supplement an enterprise liability or smokers' compensation regime with some minimal ex ante command-and-control rules.⁶⁰⁹ If such a mixed system were to be adopted, however, the key, in our view, would be: (1) adopting and maintaining a strong ex post incentive-based system in order to get all of the deterrence benefits described throughout this Article; and (2) coordinating that incentive-based system with whatever other regulatory regimes were in operation so as to avoid underdeterrence or overdeterrence.⁶¹⁰

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from happening as well, justifying some form of ex ante regulation

608. See, e.g., Smoke-Free Environment Act of 1993, H.R. 3434, 103d Cong. (1994).

609. Another situation in which ex post incentive-based regulation may be inferior to ex ante command-and-control regulation is when the normal assumption that manufacturers are better informed than regulators about the costs of (and the markets for) their products does not apply. See Shavell, *supra* note 423, at 369. For example, a particular product market might consist entirely of small, mom-and-pop operations that have neither the resources nor the expertise to invest in determining the long-run safety and health effects of their products or alternative designs for their products. A regulator who specializes in the regulation of such products might have better information about such things, in which case some type of ex ante regulation might be a useful supplement to ex post liability. See *id.* Although this situation could be important in other contexts, it would seem relatively inapplicable in the case of the tobacco industry, given the cigarette manufacturers' enormous size and large research budgets. It would be relevant in the case of public ETS exposure, however, since the government might possess better information about reducing risks associated with such exposure than potential defendants such as small employers or restaurant proprietors. In any event, such direct regulation should be used as a supplement, not as a replacement, for an ex post incentive-based system.

610. A number of scholars have argued that the optimal approach to controlling risk, especially in the area of product safety, likely entails a mixture of regulatory responses. See, e.g., Shavell, *supra* note 423, at 365 (arguing that a "complete solution to the problem of the control of risk . . . should involve the joint use of liability and regulation"). For an extended discussion of how an ex post incentive-based system could and should respond to the existence of alternative systems of deterrence (such as command-and-control regulation or ex ante incentive-based regulation) to avoid under- and over-deterrence, see Hanson & Logue,

VI. AN ASSESSMENT OF THE PROPOSED NATIONAL TOBACCO SETTLEMENT

On the basis of the forgoing analysis, we believe a strong case can be made for instituting a victim-initiated ex post incentive-based system of regulating cigarettes—whether that system be an enterprise liability regime or a smokers' compensation regime of some sort. Thus far, however, our analysis has been fairly abstract. In this part, in an effort to be more concrete and responsive to current events, we apply the framework that we have developed to the proposed national tobacco settlement.

Although ours is the first law review article to analyze the proposed settlement, we enter the debate as relative latecomers. Because of the salience and significance of the agreement, many academics, commentators, and policymakers have already weighed in.⁶¹¹ As opinions have solidified on the question of how, if at all, the proposed settlement should be amended, a powerful consensus has emerged among opinion makers that the settlement proposal, or a modified version of it, represents the best hope for providing meaningful regulation of cigarettes. With some tinkering, these parties have argued, the proposal should be adopted, even (or especially) if doing so would significantly reduce any role of tort law.⁶¹² Our goal in this section is to

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Tort Law in Context, *supra* note 40.

611. See, e.g., sources cited *supra* notes 7, 22; sources cited *infra* note 612.

612. While there is disagreement among President Clinton's advisers, for example, those advisers have relatively minor objections to the President's support of the pact. Secretary of Health and Human Services Donna Shalala, rumored to be among the most skeptical of the President's advisers, nevertheless reportedly sees the agreement "as an opportunity to get some things from the industry—a focus on nonsmoking that goes beyond teenagers to all Americans, and substantial money for public health—that greatly exceeds what the administration would have achieved solely with its FDA regulations." Michael K. Frisby, *Opponents of Tobacco Pact Face Big Hurdle: Clinton*, WALL ST. J., Aug. 8, 1997, at A14; see also Laurie McGinley et al., *The Settlement: Foes Vow To Toughen, Not Trash, Tobacco Deal*, WALL ST. J., June 23, 1997, at B1 ("[V]irtually no one who matters is vowing to kill the deal. Even those who are most critical of the terms seem[] determined to amend them, rather than try to scuttle the entire package."); Jeffrey Taylor & Hilary Stout, *Clinton Panel Likely To Bless Tobacco Deal*, WALL ST. J., July 22, 1997, at A3 (predicting that a panel convened by the President would recommend that the President embrace the basic deal, with some minor changes). Some key players who are opposed to the deal in its current form also believe the pact's shortcomings are surmountable. Former Surgeon General C. Everett Koop and former FDA Commissioner David Kessler, for example, are critical of the limits placed on FDA authority in the agreement, but suggest that they might support the agreement if it were modified. See John M. Broder, *White House Sees Adverse Effects in Tobacco Plan*, N.Y. TIMES, July 9, 1997, at A1. More importantly, none of the key critics was, until perhaps very recently, significantly concerned about the tort law implications of the proposal or about the type of regulations that the settlement would rely upon. See, e.g., *id.* (stating that Dr. Koop thinks "that a broad settlement with large payments for public health programs and strict limits on cigarette advertising and promotion could outweigh the costs of limiting the industry's legal liability"); Jeffrey Taylor, *Clinton Urged To Review Tobacco Papers*, WALL ST. J., July 30, 1997, at A3 (explaining that Koop and Kessler do not view industry immunity from punitive damages in civil liability suits as a "deal breaker"). Indeed, some of the advisers said things to suggest that they may prefer a settlement that reduces the role of tort law. See, e.g., Taylor, *supra* ("Dr. Kessler said he doesn't oppose proposals to compensate farmers for settlement-related losses. 'I would much rather see money going to them than to lawyers' for smokers who have sued tobacco companies, he said."). As this Article goes to press, however, antismoking groups and public health advocates, including Dr. Koop, may be approaching a consensus view in opposition to tort immunity for the tobacco industry. See Alissa J. Rubin & Myron J. Levin, *Anti-Smoking Groups Appear To Close Ranks*, L.A. TIMES, Jan. 23, 1998, at D3.

destabilize that consensus view and to persuade readers that if any reform is to improve upon the status quo, it would need to look very different from the reform envisaged in the settlement proposal. It would need to look more like the tort system that the current proposal would, in essence, supplant.

Before beginning our analysis, we should note that the proposed settlement appears to be premised on the assumption that the cigarette market is subject to many of the very same market failures that we identified in Parts II-III. For instance, a variety of the proposal's provisions, including enhanced warning requirements,⁶¹³ are intended to respond to the problem of imperfect information. The agreement also reflects a concern about the sorts of externalities that we identified. For instance, one provision is directed at reducing ETS in workplace settings⁶¹⁴—a noninsurance externality. Insurance externalities seem also to have played some role in the agreement. Indeed, the very cases that led to the settlement—the cases brought by state attorneys general to recover Medicaid expenditures for smoking-related injuries⁶¹⁵—were themselves motivated by the fact that public insurance programs do not adjust tax rates according to each potential claimant's smoking status.⁶¹⁶ Moreover, several provisions regarding specific regulation of cigarette designs and recipes appear to reflect a more general assumption that the largely unregulated cigarette market fails to encourage safer cigarettes.⁶¹⁷ In short, the proposed regulations appear to be motivated by the same sorts of concerns that we presented in Parts II-III.

Unfortunately, however, the regulatory instruments and devices that the proposed resolution would employ are, roughly speaking, precisely the opposite of what the basic lessons of Parts IV-V suggest. That is, the settlement would rely almost entirely upon command-and-control regulations, to a lesser extent upon performance-based regulations, and arguably not at all on ex post incentive-based regulations. Rather than attempt an exhaustive analysis of the agreement, we concentrate in this part on key provisions that appear intended to address the information and externality problems that we have identified. We employ the framework and lessons of Part IV to categorize each provision and to identify a sample of its predictable flaws. Also in this part, we examine the proposed settlement in terms of how well it addresses the transition issues that we described in Section V.C.

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613. See *Tobacco Settlement*, *supra* note 32, at 10, *infra* Subsection VI B 1

614. See *Tobacco Settlement*, *supra* note 32, at 30-31

615. See cases cited *supra* note 68.

616. Cf. Sugarman, *supra* note 277, at 161 (noting that social insurance programs fail to sort by smoking status). If social insurance programs charged higher premiums or taxes to smokers, the state attorneys general would have been unable to show damages

617. See, e.g., *Tobacco Settlement*, *supra* note 32, at 14-16, *infra* Subsection VI D 1

A. *The Complete Rejection of Ex Post Incentive-Based Regulation*

Perhaps the most striking aspect of the proposal from our perspective is its nearly complete rejection of the ex post incentive-based approach. It rejects this approach in two ways. First, it substantially weakens the threat of tort law and, in any event, eliminates any beneficial deterrence effect that tort law might have. Second, it does not adopt any alternative form of ex post incentive-based regulation.

1. *The Proposal's Civil Liability Provisions*

The preamble of the proposal promises that the legislation, if enacted, would "reaffirm[] individuals' right of access to the courts, to civil trial by jury and to full compensatory damages."⁶¹⁸ The details of the proposal, however, tell a different story. Among the most important effects of the agreement on tort law would be the following:

- Attorneys general actions, class actions, and all addition-based claims are settled;⁶¹⁹
- "[A]ll other personal injury claims are reserved";⁶²⁰
- For cases regarding past conduct that are not settled by the agreement, no punitive damages are allowed (such damages are included as part of the settlement),⁶²¹ only individual trials are allowed (no class actions and no aggregation of claims whatsoever without the defendant's consent),⁶²² and "protocol" companies⁶²³ are to share liability costs, but will not be jointly and severally liable for liability of nonprotocol manufacturers;⁶²⁴
- A damage cap is imposed for judgments and settlements, equal to 33% of the annual industry base payment (that is, a damage cap of \$5 billion in most years), subject to the following conditions:
  - If judgments and settlements exceed that cap in a given year, the excess does not have to be paid in that year and instead rolls over to the following year;⁶²⁵
  - Any judgments or settlements run against defendants but give rise to an 80% credit against the annual payment in the year the money is paid to plaintiffs;⁶²⁶

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618. *Tobacco Settlement*, *supra* note 32, at 2.

619. *See id.* at 39.

620. *Id.*

621. *See id.*

622. *See id.*

623. Protocol companies include the five tobacco companies that were parties to the agreement, as well as future industry entrants who opt into the protocol.

624. *See Tobacco Settlement*, *supra* note 32, at 39-40.

625. *See id.* at 40-41.

626. *See id.* at 41.

- If an individual judgment exceeds \$1 million, then any amount in excess of \$1 million will not be paid that year unless every other judgment or settlement can be satisfied within the annual aggregate cap. The excess would then roll forward to the following year.⁶²⁷
- "In the event that the annual aggregate cap [of \$5 billion] is not reached in any year, a Commission appointed by the President will determine the appropriate allocation of the amount representing the unused amount of the credit."⁶²⁸

These provisions, taken together, would quite clearly work an enormous change in the status of tort cases, potential and actual, surrounding cigarettes.

2. *The Effect of Civil Liability Provisions*

To appreciate fully the effect of those provisions on cigarette lawsuits, it is helpful to recall, briefly, the history of tobacco litigation. As many legal analysts have observed, lawsuits against the industry were brought in two "waves," both of which ultimately failed to overcome the industry's formidable defenses.⁶²⁹ Among the factors that combined to provide near immunity for the industry were the huge success of the assumption-of-risk and other plaintiff-conduct defenses, the federal preemption of warning-based claims, the difficulty faced by individual plaintiffs in proving specific causation, and the relatively low potential compensatory damages that individual plaintiffs could expect to receive even if they won.⁶³⁰

In recent years, however, a number of changes have improved the prospects of tobacco plaintiffs. For instance, evidence has emerged from previously undisclosed industry documents suggesting that manufacturers may have known and manipulated the addictiveness of cigarettes, actively targeted their advertising at underage consumers, and publicly denied evidence that they had regarding the health consequences of smoking.⁶³¹ That evidence has had a variety of interrelated effects. First, it has improved plaintiffs' prospects of winning punitive damages. Second, in part because of the potential for increased damage awards, the new evidence has also given rise to a number of new substantive legal theories, many of which hold the promise of finally defeating the industry's heretofore invincible plaintiff-conduct defenses.⁶³² In addition to the new substantive legal theories, there have been significant

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627. *See id.*

628. *Id.*

629. *See supra* note 14.

630. *See* Kelder & Daynard, *supra* note 3, at 71; Rabin & Sugarman, *supra* note 28, at 16; Schwartz, *supra* note 28, at 145, 153.

631. *See supra* notes 144, 161, 219, and accompanying text, *see also* Kelder & Daynard, *supra* note 3, at 64, 72-74, 76-80; Schwartz, *supra* note 28, at 145, 153.

632. *See* Kelder & Daynard, *supra* note 3, at 64, 72-74, 76, 80-85.

procedural innovations—such as the class action lawsuit—that permit plaintiffs to cooperate and coordinate their efforts in a way that makes litigation against the tobacco industry begin to look like a fair fight.⁶³³ Those developments have given rise to what legal scholars call the third wave of tobacco litigation. Indeed, it is primarily because of those evidentiary, substantive, and procedural developments—and, more generally, the threat posed by the third wave—that the tobacco industry was, for the first time in its history, willing to negotiate a possible settlement.

The limits on civil liability contained in the proposal would essentially return plaintiffs to the position that they were in five or ten years ago, at the end of the second wave. First, the proposal would eliminate punitive damages for past industry conduct.⁶³⁴ That one change alone would dramatically reduce the chance that any individual smoking plaintiff would ever bring a case against the industry. The compensatory damages in the typical case involving an individual smoker are relatively low,⁶³⁵ and most lawyers would be unwilling to mount a challenge against an industry notorious for its overpowering and relentless litigation style without any prospect of punitive damages.⁶³⁶ Moreover, without the potential claim of punitive damages, a plaintiff's attorney has little ability, and even less incentive, to bring into evidence many of the recently released (and yet to be released) documents detailing the most deceptive and culpable conduct of the industry. Without those documents, jury antipathy toward, or lack of sympathy for, smokers may place plaintiffs at a significant disadvantage in the courtroom.⁶³⁷

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633. *See id.* at 64.

634. *See Tobacco Settlement*, *supra* note 32, at 39.

635. That is true simply because many smokers experience the worst of the ill-health effects of cigarettes later in life, often after a smoker has retired and the smoker's children are grown.

636. The roll-over caps on compensatory damages, *see Tobacco Settlement*, *supra* note 32, at 40-41, may also discourage plaintiffs from initiating suits. On the other hand, the fact that liability would not substantially increase a manufacturer's costs—a point developed below, *see infra* notes 640-641 and accompanying text—may remove or reduce manufacturers' incentives to defend against individual claims. In other words, plaintiffs may be more likely to win a suit under the proposed settlement, all else being equal, because manufacturers may be less averse to losing.

637. The elimination of punitive damages under the settlement seems to have been justified on two grounds. First, manufacturers thought that eliminating punitive damages would provide greater predictability in their liability payouts, since punitive damages are alleged to be especially difficult to predict. *See generally* Daniel Kahneman et al., *Assessing Punitive Damages (with Notes on Cognition and Valuation in Law)*, 107 YALE L.J. (forthcoming May 1998) (discussing the reasons behind wide variations in jury verdicts for punitive damages). Second, as part of the settlement, the industry would be required to pay a sizeable chunk of money that is understood by some to take the place of punitive damages. *See Tobacco Settlement Hearings*, *supra* note 442 (statement of Gale Norton), available in 1997 WL 14150621.

If those are indeed the justifications for limiting punitive damages, however, there are other means of dealing with those concerns that better serve deterrence goals. For example, the settlement might have provided specifically that tobacco plaintiffs *could not* recover punitive damages but that they *could* put on evidence of past industry conduct. Such an approach would give the industry the predictability with respect to punitive damages that it seeks; the approach would also increase plaintiffs' chances of winning meritorious cases against the industry, however, by reducing the effectiveness of plaintiff-conduct defenses. The settlement, as currently written, arguably would permit evidence of past industry conduct on issues other than punitive damages. After all, the agreement merely says that, for past conduct cases, no punitive damages will be allowed. It says nothing about excluding evidence of past conduct for other purposes. *See*

Even without the carrot of punitive damages, plaintiffs might be willing to bring claims against manufacturers if they could continue to combine, and thus lower the average cost of, their relatively small claims in the form of class actions. But that option, too, is eliminated by the settlement,⁶³⁸ and with it many of the legal theories that were economically viable only in class action form.⁶³⁹

Even if smoking plaintiffs were somehow able to overcome the forgoing obstacles to bring successful individual cases against cigarette companies, those suits would have virtually no deterrence value under the proposal because of the way damage payments and defense costs would be allocated. According to the proposal, defense costs and 80% of liability costs would be distributed among the tobacco companies on the basis of market share.⁶⁴⁰ Any incentive, therefore, to develop safer cigarettes would be substantially reduced, because of the unraveling problem described above.⁶⁴¹ Moreover, most of those civil liability costs would have been paid out by the industry even if no member were held civilly liable. From each manufacturer's perspective, those costs are fixed and therefore have no effect on ex ante accident-prevention incentives. If the proposal were adopted, tort law would hereafter have no beneficial deterrence effect in the cigarette market.

Tobacco Settlement, *supra* note 32, at 39. (Evidence of past conduct would presumably be admissible for any theory of liability that required a showing of scienter on the part of industry officials—such as fraud claims.) It is nevertheless easy to imagine the industry's lawyers raising colorable objections in many cases when plaintiffs attempt to get such evidence admitted. Another approach to achieving the same deterrence and predictability objectives would be to eliminate or cap punitive damages, as the industry wants, but simultaneously to eliminate all plaintiff-conduct and warning-based defenses to industry liability.

Perhaps the argument that really underlies the proposal's treatment of punitive damages is that tort law punitive damages are, as a general policy matter, undesirable and should not be required of any industry. Although that argument has some plausibility, we ultimately find it unpersuasive. First, for the reasons already mentioned, if punitive damages are eliminated, other changes should also be made to ensure that plaintiffs will still have incentives to bring claims. Moreover, from an efficiency perspective, this may be a context in which punitive damages are especially appropriate and should, therefore, not be eliminated. The principal economic justification for punitive damages is based on the difficulty of detecting and attributing harm. Thus, under this rationale, punitive damages (or damages in excess of the harms caused) are appropriate only in circumstances in which those harms are unlikely to be detected or are unlikely to be linked to the defendant who caused them. See WILLIAM M. LANDES & RICHARD A. POSNER, *THE ECONOMIC STRUCTURE OF TORT LAW* 160-61 (1987); A. Mitchell Polinsky & Steven Shavell, *Punitive Damages: An Economic Analysis*, 111 HARV. L. REV. 869 (1998). Those sorts of detection-avoidance concerns would seem to be present in the cigarette context. Given recent revelations about the cigarette companies' concerted efforts to keep hidden information about the harmfulness and addictiveness of cigarettes, the argument for allowing punitive damages may be especially strong with respect to the past harms caused by cigarettes.

638. See *Tobacco Settlement*, *supra* note 32, at 39. The settlement agreement offers no clear rationale for this provision. As far as we can tell, it represents an effort simply to reduce the chances that the tobacco companies will ever lose a tort case.

639. See *supra* note 68 (discussing class actions brought in which the aggregation of claims and lawyers' fees would make the expense of fighting the tobacco companies worthwhile).

640. See *Tobacco Settlement*, *supra* note 32, at 41.

641. See *supra* Subsection IV.C.2 (describing the unraveling problem created by ex ante taxes), *supra* notes 99-101 and accompanying text (describing the unraveling problem created by a free market when consumers have only generic risk information); *supra* note 602 (describing the potential unraveling problem in class actions).

B. *The Proposal's Attempt To Inform Consumers*

In place of tort law, or some alternative form of ex post incentive-based regulation, the proposed settlement would rely almost entirely on command-and-control and performance-based regulations to address the market failures. For example, in response to the problem of imperfect information, the agreement would implement the following: new warning requirements,⁶⁴² new marketing restrictions,⁶⁴³ and a "look-back" provision designed to create incentives to reduce underage smoking.⁶⁴⁴ In this section, we describe each of these proposed regulations and argue that each of them is deeply flawed, at least as compared to an ex post incentive-based regime of regulation. Their central flaws relate to the insight of Part IV above: that command-and-control regulation (and, to a slightly lesser degree, performance-based regulation) relies heavily on regulators to recognize the pertinent tradeoffs and how best to make them, whereas incentive-based regulation relies instead on the regulated entity, which is usually better informed than regulators. In analyzing the various provisions of the proposed settlement, we attempt to highlight a few of the ways in which that somewhat abstract drawback of command-and-control and performance-based regulations would likely manifest itself in the proposed regime.

1. *Warning Requirements*

a. *Summary of Provision*

The proposal's most obvious attempt to ensure that consumers are well-informed is its requirement that each of the following warnings be included on cigarette packaging and advertising (on a rotating basis):

- "WARNING: Cigarettes are addictive";
- "WARNING: Tobacco smoke can harm your children";
- "WARNING: Cigarettes cause fatal lung disease";
- "WARNING: Cigarettes cause cancer";
- "WARNING: Cigarettes cause strokes and heart disease";
- "WARNING: Smoking during pregnancy can harm your baby";

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642. See *Tobacco Settlement*, *supra* note 32, at 10-11.

643. See *id.* at 8-9.

644. See *id.* at 24-25. Categorizing these provisions poses a slight challenge. If those regulatory responses were fully successful, they would solve the underlying consumer-information market failure and would meet all the information-related deterrence goals that we seek to obtain through victim-initiated ex post incentive-based regulation. Thus, those categories of provisions arguably share the more ambitious goal of incentive-based regulation: transforming a malfunctioning market into a well-functioning market. Because the provisions take the form of command-and-control regulations, however, they constitute somewhat of a hybrid between command-and-control-style regulation and incentive-based regulation. However they are categorized, they contain all the drawbacks of pure command-and-control regulations.

- "WARNING: Smoking can kill you";
- "WARNING: Tobacco smoke causes fatal lung disease in non-smokers";
- "WARNING: Quitting smoking now greatly reduces serious risks to your health."⁶⁴⁵

Those warnings would appear in white lettering on a black background and would occupy at least 25% of the front of a cigarette pack, near the top.⁶⁴⁶

b. Critique

Although the proposed warning requirements are doubtless an improvement over the current ones,⁶⁴⁷ that is not saying much. Like the current warning requirements, the proposed warning requirements would be largely ineffective as a means of overcoming the various sources of imperfect consumer information.

For instance, most of the proposed warnings are phrased to influence general, not personal, beliefs (thus failing to overcome the third-person effect⁶⁴⁸). Those warnings directed at the individual smoker, meanwhile, leave room for considerable doubt (and may even create doubts) regarding the relative risks posed.⁶⁴⁹ Furthermore, the warnings do not specify qualitatively or quantitatively the actual risks posed by cigarettes in terms of either probabilities or magnitudes. In short, the proposed warnings appear unlikely to convey any health-risk information that most smokers do not already have (which is not to say that consumers are now adequately informed of the risks).

Similarly, the problem of addiction is not addressed by the warnings. Only one warning even mentions the addictiveness of cigarettes, noting simply that

645. *Tobacco Settlement*, *supra* note 32, at 10.

646. *See id.* at 10-11. In addition, the FDA would be required under the proposal to promulgate a rule governing the disclosure of tobacco smoke constituents. *See id.* at 11, 19-20. Manufacturers would need to disclose to the FDA all ingredients added to their cigarettes. Moreover, they would need to disclose ingredient information to consumers as food manufacturers now must disclose food additives. *See id.*

647. *See infra* note 649 (listing the current warning requirements).

648. *See supra* Subsection II.B.1. (describing the third-person effect and its implications).

649. *Cf. HILTS*, *supra* note 12, at 12-13, 17-18 (detailing the industry's use of a massive public relations campaign addressed both to doctors and to ordinary citizens attacking the scientific data and the scientists behind it as a means of raising doubt about the hazards of cigarettes).

Previous warnings were subject to the same criticisms. The original warning mandated in 1965 did refer to the consumer directly, but was quite unemphatic in its message "Caution Cigarette Smoking May Be Hazardous to Your Health." Federal Cigarette Labeling and Advertising Act of 1965, Pub. L. No. 89-92, § 4, 79 Stat. 282, 283 (codified as amended at 15 U.S.C. § 1333 (1994)). In 1984, the requirement was expanded to four rotating warnings: (1) "Smoking Causes Lung Cancer, Heart Disease, Emphysema, And May Complicate Pregnancy"; (2) "Quitting Smoking Now Greatly Reduces Serious Risks to Your Health"; (3) "Smoking by Pregnant Women May Result in Fetal Injury, Premature Birth, And Low Birth Weight"; (4) "Cigarette Smoke Contains Carbon Monoxide." Comprehensive Smoking Education Act of 1984, Pub. L. No. 98-474, § 4, 98 Stat. 2200, 2201-03 (1984) (codified at 15 U.S.C. § 1333). Of the four, only one refers to the consumer's personal risk. Moreover, it is not clear whether that warning actually discourages smoking. *See supra* note 157. One of the warnings addresses itself only to a group (pregnant women) that excludes most consumers.

"[c]igarettes are addictive."⁶⁵⁰ Acknowledging that cigarettes are addictive, however, does little or nothing to respond specifically to the addiction problems that we described in Subsection II.B.4: the problem of path dependence, the problem of myopia, and the problem of multiple selves.⁶⁵¹ Indeed, one of the warnings continues to emphasize that serious health risks can be reduced by quitting. As we explained above,⁶⁵² such a warning could have the perverse effect of lowering the impact of all the other warnings.

Finally, the greater number and more prominent display of warnings could encourage smoking, particularly among children, by enhancing cigarettes' image as forbidden fruit.⁶⁵³ Cigarette manufacturers would continue,⁶⁵⁴ as best they could, to promote that image through their marketing and would otherwise attempt to downplay the risks of their products. For those sorts of reasons, the proposed warning requirements are likely to be ineffective or, worse, counterproductive.⁶⁵⁵

2. Marketing Restrictions and Antismoking Advertising

a. Summary of Provisions

The second general way in which the agreement seeks to address the information problem would be to "drastically curtail[]" the "advertising and marketing of tobacco products"⁶⁵⁶ and to require the industry to spend millions annually on antismoking advertisements targeted at young consumers.

650. *Tobacco Settlement*, *supra* note 32, at 10.

651. Moreover, the meaning of the word "addiction" may be unclear to some potential smokers. *See supra* note 256.

652. *See supra* note 157. A related problem may be created by the proposal's emphasis on the financing of smoking cessation programs. Lowering the perceived exit costs has two effects. Some people will exit while the going is good. Others will smoke more because they will have greater confidence that they will be able to quit when they want.

653. There is growing evidence that warnings may actually give a product an enhanced gloss and induce consumers, particularly young consumers, to purchase it. For example, several studies have demonstrated a "forbidden fruit" effect of television parental advisory warnings for violent shows. *See, e.g.,* Brad J. Bushman & Angela D. Stack, *Forbidden Fruit Versus Tainted Fruit: Effects of Warning Labels on Attraction to Television Violence*, 2 J. EXPER. PSYCHOL.: APPLIED 207 (1996). Similar studies on the labeling effects on alcoholic versus nonalcoholic drinks also support the theory that the warning itself may serve to make the product appear more attractive. *See, e.g.,* John M. Springer & Craig T. Nagoshi, *Magical Thinking and Alcohol Labels*, 69 PSYCHOL. REP. 767 (1991).

654. The forbidden fruit effect of warnings is probably not news to cigarette marketers. *See, e.g., RJR Memorandum*, *supra* note 161 (concluding that "a new brand aimed at the young group should not in any way be promoted as a 'health' brand, and perhaps should carry some implied risk" and stating that "the warning label on the package may be a plus").

655. The warning requirements would likely also have a preemptive effect on civil liability claims inasmuch as they would produce de jure preemption of inadequate-warning claims and de facto preemption of other products liability claims. *Cf. Cipollone v. Liggett Group, Inc.*, 505 U.S. 504, 524 (1992) (plurality opinion) (finding failure-to-warn claims preempted by federal law); *supra* note 9 (describing the irony of the *Cipollone* decision in this regard). Manufacturers' assumption-of-risk defenses would be even more robust, if that is possible, than they have been to date. To the extent that tort law would have any beneficial deterrence effect under the proposed regime that effect would be further attenuated.

656. *Tobacco Settlement*, *supra* note 32, at 8.

Among other things, the new regime would, consistent with the FDA's tobacco regulations of 1996:

- "Restrict permissible tobacco product advertising to black text on a white background except for advertising in adult-only facilities and in adult publications";⁶⁵⁷
- "Require cigarette and smokeless tobacco product advertisements to carry the FDA-mandated statement of intended use ('Nicotine Delivery Device')";⁶⁵⁸
- "Ban all non-tobacco merchandise, including caps, jackets or bags bearing the name, logo or selling message of a tobacco brand";⁶⁵⁹
- "Ban offers of non-tobacco items or gifts based on proof of purchase of tobacco products";⁶⁶⁰
- "Ban sponsorships, including concerts and sporting events, in the name, logo or selling message of a tobacco brand."⁶⁶¹

Going beyond current FDA regulations, the new regime would also:

- "Ban the use of human images and cartoon characters—thereby eliminating Joe Camel and the Marlboro Man—in all tobacco advertising and on tobacco product packages";⁶⁶²
- "Ban all outdoor tobacco product advertising";⁶⁶³
- "Prohibit tobacco product advertising on the Internet unless designed to be inaccessible in or from the United States";⁶⁶⁴
- "Establish nationwide restrictions in non adult-only facilities on point of sale advertising with a view toward minimizing the impact of such advertising on minors";⁶⁶⁵
- "Ban direct and indirect payments for tobacco product placement in movies, television programs and video games";⁶⁶⁶
- "Prohibit direct and indirect payments to 'glamorize' tobacco use in media appealing to minors, including recorded and live performances of music";⁶⁶⁷
- "[R]equire that the use . . . of words currently employed as product descriptors (e.g., 'light' or 'low tar') be accompanied by a mandatory disclaimer in advertisements (e.g., 'Brand X not shown to be less hazardous than other cigarettes') . . . ."⁶⁶⁸

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657. *Id.* at 8 (citing 21 C.F.R. § 897.32(a)-(b) (1997))

658. *Id.* (citing 21 C.F.R. § 897.32(c)).

659. *Id.* (citing 21 C.F.R. § 897.34(a)).

660. *Id.* (citing 21 C.F.R. § 897.34(b)).

661. *Id.* at 9 (citing 21 C.F.R. § 897.34(c)).

662. *Id.*

663. *Id.*

664. *Id.*

665. *Id.*

666. *Id.*

667. *Id.*

668. *Id.*

In addition to the limitations placed on advertising, the proposal would require the industry to fund "a \$500 million annual, national education-oriented counter-advertising and tobacco control campaign seeking to discourage the initiation of tobacco use by children and adolescents and to encourage current tobacco product users to quit use of the products."⁶⁶⁹ As with most of the advertising limitations, this provision evinces a special interest in discouraging underage smoking.⁶⁷⁰

b. *Critique*

The goal of the marketing restrictions is not to inform consumers but to protect them from being misinformed by manufacturers. The command-and-control approach to the problem, however, contains all the predictable and classic regulatory flaws. For instance, the restrictions may prevent manufacturers from effectively marketing healthier cigarettes, thereby reducing the companies' incentives to develop such cigarettes.⁶⁷¹ In contrast, if manufacturers were forced to internalize the costs that their products pose through, for instance, an ex post incentive-based regulatory regime, then advertising restrictions would be less necessary since manufacturers would market their cigarettes in a way that minimizes the total injury costs of cigarettes.⁶⁷² So long as manufacturers bear the total costs associated with

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669. *Id.* at 3; *see also id.* at 37-38 (describing the public education campaign in slightly more detail).

670. The preamble strongly implies that the primary goal of the settlement is to discourage underage tobacco use. *See id.* at 1. Nowhere does it explain, however, why that goal should have priority over other potential goals. One expert has stated that it is likely that the prioritization of underage smoking reflects the history of the politics of smoking. Antismoking groups have long recognized that their strongest political playing card has been underage smoking. There were already laws against it, laws that were largely unenforced. The fact that virtually all smokers pick up the habit when they are minors and the fact that smoking is addictive and dangerous has made the case against underage smoking especially easy to support. Interview with Richard Daynard, Chair of the Tobacco Products Liability Project, Northeastern University School of Law, in Boston, Mass. (July 22, 1997).

671. *Cf. VISCUSI, supra* note 49, at 147-48 (arguing that governmental advertising restrictions have discouraged safety innovations in cigarettes).

672. *See Croley & Hanson, Enterprise Liability, supra* note 40, at 786-92. Many commentators agree that safer cigarette designs are viable. *See, e.g.,* John Freeman, '60 Minutes' Stokes Cigarette Controversy, *SAN DIEGO UNION-TRIB.*, Apr. 1, 1994, at E14 (describing a 60 Minutes episode that charged Philip Morris with hiding for years its capability to produce a cigarette that could have prevented thousands of fire-related deaths and injuries); *cf. George Rodrigue, 'Safe' Cigarette Ignored, Researcher Says, DALLAS MORNING NEWS*, Aug. 17, 1997, at 1H (quoting former Philip Morris researcher Victor DeNoble alleging that for decades tobacco companies have rejected plans to make cigarettes safer); John Schwartz, *New Cigarette Clears the Smoke, but the Heat Is Still On*, *WASH. POST*, May 27, 1996, at A3 (quoting a former Brown & Williamson research director alleging that tobacco companies have been rejecting designs for safer cigarettes due to fear of legal liability). Critics of the tort system and defenders of the cigarette industry place blame for the fact that those designs have yet to be marketed successfully on existing products liability laws. *See, e.g.,* Norihiko Shirouzu, *Low-Smoke Cigarette Catches Fire in Japan*, *WALL ST. J.*, Sept. 8, 1997, at B1 ("[I]f the liability issue gets settled, many expect the U.S. makers to devise new products with safety features."). According to this argument, if manufacturers were to produce a safer cigarette, then that cigarette would be used as evidence against them to prove that their older design was defective. *Cf. Freedman, supra* note 161 (reporting the whistleblowing testimony of Dr. Jeffrey Wigand, in which he

their products, they have a significantly reduced incentive to mislead consumers with respect to the risk properties of cigarettes.⁶⁷³ Manufacturers would have to pay for the costs that they understate, and, in that sense, their claims would be bonded. Moreover, even if they understate the risks, cigarette manufacturers would still have to charge a price that reflects true risks. The price would, in effect, inform consumers and, at least potentially, counteract false claims.

Similarly, though cigarette manufacturers would still seek to target consumers, their motives in targeting consumers would be very different than they are now. Under an incentive-based regime, manufacturers would direct their marketing to low-risk smokers.⁶⁷⁴ There are a number of ways in which consumers may be low-risk. For example, some consumers may be more likely, other things being equal, to quit smoking before suffering many of the ill-health effects of long-term smoking. There is some evidence, for example, that quitting rates increase as education levels and age of initiation increase.⁶⁷⁵ Different, identifiable groups may be more (or less) likely to suffer serious ill-health effects of smoking. For instance, the younger a person is when he or she starts smoking, the greater will be that person's chances of developing lung cancer, other things being equal.⁶⁷⁶ Thus, under an

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described how he was told by the CEO of Brown & Williamson, for whom Wigand was working at the time, that "there would be no further discussion or efforts on any issues related to a safer cigarette," because "[a]ny research on a safer cigarette would clearly expose every other product as unsafe and, therefore, present a liability issue in terms of any type of litigation"). Whether or not the argument is valid with respect to the current products liability regime, it is clear that an enterprise liability regime, or some other ex post incentive-based regulatory mechanism, would greatly encourage safer cigarettes. The manufacturer would be liable for all cigarette-caused harms, regardless of the design of the cigarette. Thus manufacturers could lower their total costs only by making cost-justifiable safety improvements.

673. See *supra* Subsection IV.D.3. The historical marketing strategy of "low tar cigarettes," see VISCUSI, *supra* note 49, at 37-41, is a perfect example of the problems that may arise when manufacturers lack the incentives to take costs into their calculations. See *supra* notes 102-107 and accompanying text. As Hilts points out, the "low tar cigarette" did not work as a health concept, because "[p]uffing less or differently on a high tar cigarette might well be more effective," HILTS, *supra* note 12, at 61, but it was nonetheless manipulated by the industry for its innately appealing "advertising concept," *id.* Thus, "Those most concerned about getting less tar may not get less tar, but they feel better about it." *Id.*

674. See *supra* Section V.B.1.

675. See *Teen Smokers Find Habit Hard To Break. Study Says*, PHOENIX GAZETTE (ARIZ.), Feb. 16, 1996, at A8 (quoting a study finding that the quitting rate was 4.4% for people who began smoking before age 14, 9.6% for people who started between ages 14 and 16, and 13.6% for those who started after age 16). Lloyd D. Johnston, the director of a major study of teenage smoking, said that "the younger people start smoking, the more likely their habit is to take hold." Don Colburn, *Rise in Teen Smoking Has Experts Vexed*, WASH. POST, Sept. 10, 1996, at Z7. The Surgeon General's Progress Report tracks quitting rates between 1966 and 1985. See SURGEON GENERAL'S PROGRESS REPORT, *supra* note 3. The study notes that quitting in 1985 was highest among college graduates (61.1%) and much lower among those with some college education (46.0%), high school graduates without college (40.5%), and those without a high school diploma (41.3%). See *id.* at 287 tbl.9. The report also notes a "twelvefold difference in the rate of decline in smoking prevalence between the most and least educated groups in our society." *Id.* at 271.

676. See SURGEON GENERAL'S PROGRESS REPORT, *supra* note 3, at 44 ("The risk of developing lung cancer was greatest for those who began smoking at an early age"). Luis G. Escobedo, *Sports Participation, Age at Smoking Initiation, and the Risk of Smoking Among U.S. High School Students*, 269 JAMA 1391, 1393-94 (1993) ("It is also known that lung cancer mortality is highest among adults who began smoking before age 15 years.").

incentive-based regulatory system, manufacturers would not only lose some of their incentive to target children, they would also have an incentive to discourage children from smoking.

Without some type of incentive-based regulation, however, advertising restrictions merely create incentives for manufacturers to find loopholes through which they can continue to target underage smokers or otherwise "disinform" consumers.⁶⁷⁷ Indeed, a common critique of the proposal is that manufacturers would still be able to advertise effectively to kids.⁶⁷⁸ That critique has significant empirical, as well as theoretical, underpinnings. In countries that have previously adopted advertising restrictions equivalent to, or greater than, those envisaged in the agreement, cigarette manufacturers continue to target young smokers successfully.⁶⁷⁹ Similarly, although many commentators appear to have a strong intuition that current industry marketing practices have had an effect on the number of underage smokers, the evidence supporting that intuition is, at best, spotty.⁶⁸⁰ Evidence regarding the effects of antismoking advertisements or public service announcements of the sort that

677. See *supra* Subsection IV.D.1. Arguments have been made that the industry relies heavily on its underage consumer population. As one author expressed the point, "[I]f it were true that the companies steer clear of children, as they say, the entire industry would collapse within a single generation." HILTS, *supra* note 12, at 65. In fact, a look at past efforts of manufacturers to deter underage smoking indicates that many of the company-initiated programs were "useless and silly on their face. For example . . . 'Puck notices. We will place a notice on all of our packs and cartons: 'Underage sales prohibited.'"" *Id.* at 99. To the extent that manufacturers would be prevented from advertising under the proposed regime, retailers may be able to step in and fill that marketing void. Although there are licensing requirements in the agreement that would appear to require sellers to comply with the terms of the agreement, it is not clear whether conditioning a license on the licensee's consent to give up First Amendment privileges is constitutional. See *Hearings on the Global Tobacco Settlement Before the Senate Judiciary Comm.*, 105th Cong. (1997) (testimony of Laurence H. Tribe), available in 1997 WL 11234937 [hereinafter Tribe Testimony]; Douglas J. Wood, *Will Bans on Tobacco Ads Pass Muster?*, NAT'L L.J., July 7, 1997, at B9.

678. Interview with Richard Daynard, *supra* note 670.

679. See, e.g., Brion J. Fox et al., Analysis of the Proposed Resolution of the United States Tobacco Litigation 35 (Aug. 20, 1997) (unpublished manuscript, on file with the *Yale Law Journal*) (describing common advertising practices in other countries with substantial advertising restrictions and concluding that "[t]he advertising restrictions [in the settlement] are . . . unlikely to significantly reduce the pervasiveness of tobacco imagery in society"); John R. Garrison, CEO, American Lung Ass'n, Statement at the News Conference on Potential Tobacco Settlement (June 17, 1997) (asserting that "[t]he ability of the tobacco industry to reinvent itself and circumvent . . . restrictions" on targeting children is "remarkable"). In reaction to the proposed settlement in this country, advertising firms are said to be working already on new, effective ways to advertise within the limits of the settlement. See Yumiko Ono, *Firms Scramble for Ways To Sell Cigarettes*, WALL ST. J., June 23, 1997, at B11.

680. According to some commentators, what little evidence there is suggests that the principal effect of current marketing is on consumers' choice of which brands to smoke rather than on whether or not to smoke. For example, Douglas Wood argues:

[N]o study has been conducted that proves advertising motivates any child to take up smoking. Studies that have been performed show that peer pressure and sibling and parental examples are primary reasons a child begins to smoke.

Nor, to date, is there any study showing that advertising causes children who have chosen to smoke to continue doing so. Although advertising may cause someone to switch brands, banning certain advertising methods to avoid brand switching, let alone the complete ban of certain media proposed by the settlement, would probably not withstand constitutional muster.

Wood, *supra* note 677. For a summary of the evidence suggesting that advertising does encourage underage consumers to smoke, see Kelder & Daynard, *supra* note 3, at 65-66.

would likely be implemented in the proposed regime is also mixed.⁶⁸¹ California enacted a counter-advertising campaign in 1990, which served as a model for the settlement proposal.⁶⁸² Teenage smoking rates in California, however, have increased, not decreased, since 1990.⁶⁸³ As with warnings, counter-advertising may even enhance underage demand for cigarettes insofar as they bestow on cigarettes a forbidden fruit quality.⁶⁸⁴ As much as proponents of the agreement might believe that the advertising restrictions will substantially reduce underage smoking, there is little evidence to support that belief.⁶⁸⁵ Indeed, the evidence suggests that by far the best means of lowering underage smoking is a price increase,⁶⁸⁶ which, of course, is what an incentive-based system would yield.

We have a more fundamental concern about the child-centric nature of the marketing restrictions (and of the "look-back" provision⁶⁸⁷). Even assuming that the proposed strategies would be completely effective, it remains a significant problem in our view that many of the underage consumers who would have started smoking before the strategies were implemented might, once the strategies were implemented, begin a few years later. Supporters and opponents of the deal have argued that the trick to preventing people from ever smoking is simply to make certain they do not begin smoking before they are eighteen, because under the current regime most smokers begin well before they are eighteen.⁶⁸⁸ That argument, however, is based on an unproven and

681. See John Schwartz, *Officials Seek a Path To Cut into Haze of Youth Smoking. The Bottom Line No One Knows What Works*, WASH. POST, Nov. 2, 1997, at A1 ("Despite all of the anti-tobacco efforts in recent years, teenagers' attitudes toward smoking are growing more positive.")

682. See Adelson, *supra* note 163.

683. See *id.*

684. See *id.* ("[S]ome experts note that the more smoking comes under attack by adults, the more attractive or 'cooler' it becomes to many teen-agers."). *supra* note 653 and accompanying text (discussing the concept of "forbidden fruit" in the context of the settlement's warning provision)

685. Similarly discouraging results have recently been reported with respect to the efforts in Massachusetts to reduce underage smoking by more stringently enforcing laws prohibiting sales to minors. See Nancy A. Rigotti et al., *The Effect of Enforcing Tobacco-Sales Laws on Adolescents' Access to Tobacco and Smoking Behavior*, 337 NEW ENG. J. MED. 1044 (1997) (reporting the results of a two-year study assessing sales of cigarettes to minors and young people's access to, and use of, cigarettes in Massachusetts communities and concluding that well-enforced tobacco sales laws did not alter minors' perceived access to cigarettes or their consumption levels)

686. See Schwartz, *supra* note 681; see also Richard Tomkins, *After the Smoke Has Cleared The Tobacco Industry May Have Got off Lightly in Its Proposed Settlement with U.S. States*, FINANCIAL POST (N.Y.), June 25, 1997, at 8 (noting that other countries have found large price increases to be particularly effective at reducing the demand for cigarettes among the young)

687. The look-back provision, which is summarized and critiqued *infra* Subsection VI B 3, states that "[a] central aim of this legislation is to achieve dramatic and immediate reductions in the number of underage consumers of tobacco products." *Tobacco Settlement*, *supra* note 32, at 24

688. See, e.g., Thomas W. Merrill, *Financial Penalties for Youth Smoking 3* (1997) (unpublished manuscript, on file with the *Yale Law Journal*) ("We know that few adults start smoking after the age of 21. So if the tobacco companies agree to a program that would actually reduce the incidence of underage smoking by 60%, this would put them on a path pointing toward the eventual destruction of their domestic market."); Gerald J. Thain, *The First Amendment and Restrictions on Commercial Speech in the "Tobacco Settlement": An Analysis 2* (Oct. 16, 1997) (unpublished manuscript, on file with the *Yale Law Journal*) ("There is overwhelming evidence [that] the consumption of cigarettes will decline dramatically if smoking does not begin until the age when it is legal.")

dubious premise. Evidence of when smokers start under the current regime reveals nothing about when they would start under the proposed regime. If one assumes, as many industry critics do, that marketing efforts have been partially responsible for encouraging underage consumers to start smoking,⁶⁸⁹ and if such marketing were successfully curtailed under the agreement, it seems likely that manufacturers would begin targeting slightly older consumers. Advertising and selling cigarettes to eighteen year-olds are perfectly acceptable activities under the agreement. And if manufacturers can successfully target fourteen year-olds, it seems plausible that they will be just as successful at targeting eighteen year-olds.⁶⁹⁰ Indeed, the most recent Camel advertisements suggest that that is precisely the strategy that R.J. Reynolds plans on adopting. The animated Joe Camel campaign has been recently replaced with a variety of other advertising campaigns, including explicitly sexual imagery.⁶⁹¹

Finally, although we understand and agree that protecting children from the dangers of smoking is felt to be an especially strong need, the information problems that we described in Part II do not apply exclusively to children. Although some of those information problems may be more significant with respect to underage smokers (for example, the problem of myopia), none of the problems is age-specific. Thus the proposal's tendency to draw a bright line at the age of eighteen creates distinctions that are legalistic and irrelevant. One benefit of an incentive-based approach, by contrast, is that no such arbitrary lines appear. Any distinctions in advertising practices under such a regime would be based on the total costs caused by the cigarettes as marketed to a particular group.⁶⁹²

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689. See, e.g., Kelder & Daynard, *supra* note 3, at 65-66; Advisory Committee on Tobacco Policy and Public Health, Final Report 5 (1997) (unpublished manuscript, on file with the *Yale Law Journal*); *supra* note 25 and accompanying text.

690. Under the current regime, there may be a sort of race to the bottom of the age groups of potential smokers. If a manufacturer can hook a young child, that manufacturer not only gains revenues of that smoker for the following three or four years, while the smoker is still a minor, but also for the years following the time that the smoker reaches majority in which the smoker continues to smoke that manufacturer's brands. Thus, the targeted marketing of manufacturers may not be motivated by an attempt to hook the only age group that is potentially hookable, but to hook the hookable people at the earliest possible moment. Assuming that the regulations succeed only in postponing the age at which many long-term smokers initiate their habits, those regulations may still have a benefit. Specifically, smokers who start at a later age may be, on average, less adversely affected by their habit. See *supra* note 676 and accompanying text.

691. See Yumiko Ono & Bruce Ingersoll, *RJR Retires Joe Camel, Adds Sexy Smokers*, WALL ST. J., July 11, 1997, at B1. R.J. Reynolds decided to end the Joe Camel campaign six weeks after the FTC brought an unfair-advertising complaint against the company. See *id.* Some antismoking advocates claim that the decision was made in an effort to avoid turning over certain internal documents. See *id.*

692. See *supra* Subsection IV.D.1. To be clear, we do not necessarily object to a regulatory regime that includes some command-and-control regulations and some performance-based regulations to help prevent underage consumers from smoking. Instead, we object to a regulatory regime that relies exclusively on such regulations as opposed to one in which they serve to supplement incentive-based, cost-internalizing regulation.

3. The "Look-Back" Provision

a. Summary of Provision

To supplement the command-and-control regulation that we have thus far described, the proposal includes a so-called "look-back" provision, which is a form of performance-based regulation designed to reduce the level of underage tobacco use.⁶⁹³ The performance targets are roughly as follows: Underage use of cigarettes would have to decline by at least 30% by the fifth year after the proposal is enacted, 50% by the seventh year, and 60% by the tenth year.⁶⁹⁴ Those targets would be measured against the estimated underage smoking levels that have prevailed over the last decade according to the University of Michigan's Monitoring the Future study.⁶⁹⁵ If the targets are not met, the proposal would authorize (and require) the FDA to impose a surcharge on the tobacco industry in an amount that would approximate the "present value of the profit the industry would earn over the lives of all underage users in excess of the target," subject to an annual cap of \$2 billion.⁶⁹⁶

b. Critique

The look-back provision was designed to ensure that, even if the other proposed regulations aimed at underage smokers (for example, the advertising restrictions) do not have their intended effect, the industry would nevertheless have a powerful incentive to reduce underage smoking to acceptable levels.⁶⁹⁷ To use the taxonomy of this Article, the look-back provision can be understood as a form of state-initiated *ex post* performance-based regulation.⁶⁹⁸ The look-back provision—or perhaps a modified version of

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693. See *Tobacco Settlement*, *supra* note 32, app. V at 51 (summarizing the "look-back" provision).

694. See *id.* at 52.

695. Although we focus, for simplicity, on cigarettes, similar targets would be imposed for smokeless tobacco products. Based on an analysis of the look-back provision in the proposal and of the Monitoring the Future study, Professor Harms estimates the "base percentage" of underage daily smokers (the 1986-1996 historical average) to be 15.2%. See Jeffrey E. Harms, Prepared Remarks at the American Cancer Society's Press Conference on the Proposed Tobacco Industry-Wide Resolution 2 (July 24, 1997) (transcript on file with the *Yale Law Journal*). Thus, for example, the five-year goal of a 30% reduction from the base percentage would mean a target rate of 10.6% underage smokers. That target, as Harms points out, would amount to a 58% reduction from the current 1996 level of underage smoking, which is 18.2%. See *id.*

696. *Tobacco Settlement*, *supra* note 32, at 24. Under the agreement, the surcharge would be \$80 million for each percentage point difference between the target percentage reduction of underage smoking and the actual percentage reduction. See *id.* app. V at 53.

697. See *id.* at 24-25.

698. Presumably the provision is motivated either by the sorts of consumer-information market failures described *infra* Part II or by a political or philosophical decision that people under the age of 18 simply should not smoke. We are by no means against regulations motivated by a desire to provide special protection to children. To serve that goal, we are not averse to supplementing *ex post* incentive-based systems of regulation with other types that are specifically directed at protecting children. In many cases, as in this one, however, we believe that *ex post* incentive-based regulations better serve that particular goal than do the alternatives.

it—is considered by most policymakers and analysts to be the most promising means of ensuring that underage smoking is curtailed.⁶⁹⁹ That makes some sense, in light of the weaknesses that we have already highlighted with respect to the command-and-control regulations intended to limit underage smoking. Unfortunately, however, all of the sorts of flaws in the proposed command-and-control regulations afflict the performance-based look-back program as well.

As we described in Section IV.B, performance standards may *seem* to require less information on the part of the regulator than command-and-control regulation does. When one considers the information necessary to choose the standard in the first place, however, it becomes clear that fully efficient performance-based regulations require all the same information that is required of command-and-control regulations. To make this point clear, consider the target reductions in underage smoking—30%, 50%, then finally 60%. Where did those numbers come from? Why not target reductions of 100%, or 80%, or 23%? As we indicated in Section IV.B, with performance-based regulation the first necessary step is to justify the performance target. If the target percentages in the proposal come from some political or philosophical conclusion that a 60% eventual reduction in the level of underage smoking is the best achievable end state, it would be helpful to have that spelled out along with the arguments and the evidence behind those conclusions.⁷⁰⁰ In any event, the look-back provision would provide absolutely no incentive to reduce underage smoking rates by more than 60%, even if the costs to manufacturers of encouraging further reductions were quite low.

If one assumes, for the sake of argument, that the target levels of underage smoking were well chosen, that does not imply that the proposed regulation will generate the target outcomes. Indeed, a close examination of the look-back provision reveals numerous reasons that it will almost certainly fail to achieve the target goals. First, as some critics of the agreement have indicated, the penalty imposed for failure to meet the targets is inadequate.⁷⁰¹ The proposed \$80 million penalty for each percentage point by which the target is missed represents an underestimate of what it is supposed to reflect, “the present value

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699. See, e.g., Merrill, *supra* note 688, at 2 (noting that the look-back program appears “to be the crucial variable in deciding whether the global settlement is a tremendous breakthrough”).

700. The fact that no one, as far as we know, has challenged those numbers is not necessarily evidence of the fact that they are optimal percentages. More likely, the lack of criticism reflects the fact that no one knows the optimal percentages, a fact that itself contributes to our case for an ex post incentive-based regulatory approach.

701. See, e.g., *Don't Revise Pact, Tobacco Firms Tell Clinton*, BOSTON GLOBE, Aug. 20, 1997, at A20 (quoting Bruce Reed, President Clinton's top adviser on tobacco issues: “We've made clear we want to strengthen the penalties . . . [since] strict penalties for failing to meet reductions in smoking are absolutely essential”); Michael K. Frisby, *Tobacco Officials Balk at Changes Proposed To Beef Up Settlement*, WALL ST. J., Aug. 15, 1997, at B6 (summarizing a White House opinion that the surcharges were inadequate); Jeffrey Taylor, *Task Force Asks for Stiffer Tobacco Penalties*, WALL ST. J., July 9, 1997, at A2 (summarizing a similar view of the Koop-Kessler Committee).

of the profit the cigarette industry would earn over the life of underage smokers in excess of the required reduction."⁷⁰² The arbitrary \$2 billion per year maximum also renders inadequate the surcharge's bite.⁷⁰³ As some analysts have observed, if the maximum surcharge were spread across all cigarettes sold, the cost of noncompliance would be less than a dime per pack.⁷⁰⁴

Even assuming that the amount of the surcharge reflects what it is supposed to reflect, that surcharge would not eliminate manufacturers' incentives to market to underage smokers. When faced with the question of whether or not to target underage consumers, manufacturers would realize that if they did market to children, they would enjoy at least 40% (and, because of the cap and the abatement scheme described above, probably more than 40%) of the profits that they currently enjoy from selling to kids. Although the incentive to attract underage smokers to their brands might not be as strong, it would still be present.⁷⁰⁵ The problem stems from the fact that the target is set below 100%.

But even if the target were set at 100%, the surcharge, properly measured, would not create an incentive to discourage smoking. At best, it would make manufacturers indifferent between selling to minors and not doing so.⁷⁰⁶ And the problem is even more serious than just that. Even if the surcharges were increased to provide *some* incentive for manufacturers to meet the targets, they would possibly still be too low. It is not costless for the industry to prevent the sale of cigarettes to people under the age of eighteen. To the extent there are any costs associated with that effort (whether they be advertising expenses or

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702. *Tobacco Settlement*, *supra* note 32, at 53; see also Susan Page, *Clinton Expected To Talk Tough on Tobacco Pact*, *Child Protection*, USA TODAY, Sept. 16, 1997, at 6A ("The administration analysis shows that the proposed penalties would be largely offset by the profits companies would make from a higher level of cigarette sales to teens."); Carl T. Rowan, *Settlement Continues Tobacco's Devastation*, HOUSTON CHRON., June 25, 1997, at 22 ("Those who distrust big tobacco . . . say it will be more profitable for the industry to go on addicting teen-agers to far more costly cigarettes and pay the fines . . .")

703. See Merrill, *supra* note 688, at 9. This discussion is intended to illustrate the more general point that designing a performance-based regulation requires the same amount of information as designing a command-and-control regulation. See *supra* Section IV B. In the case of the look-back provision, the unity between the two types of regulations is especially clear, because the look-back provision contains a command-and-control exception that could well swallow the performance-based rule. Under the proposal, if the performance targets are not met and the surcharge is imposed on the industry, any manufacturer who has paid its share of the surcharge can petition the FDA to have up to 75% of the surcharge "abated." *Tobacco Settlement*, *supra* note 32, at 24. According to the abatement procedures, the manufacturer in such a situation must show by a preponderance of the evidence that it is entitled to an abatement—which would depend upon, among other things, the manufacturer showing that it had "pursued all reasonably available measures" to achieve the desired targets. *Id.* at 56. Thus, for up to 75% of the surcharge amount, the look-back provision is *not* a performance-based regime at all, but is an ex post command-and-control regime instead.

704. See, e.g., Fox et al., *supra* note 679, at 14.

705. See Merrill, *supra* note 688, at 9-10.

706. We are assuming here, as do the proponents of the proposed settlement, see, e.g., Merrill, *supra* note 688, at 3; Thain, *supra* note 688, at 2, that smokers who do not begin before they are 18 years old will not begin smoking at all. But see *supra* notes 689-691 and accompanying text (questioning that assumption).

forgone profits from older smokers discouraged from smoking by the effort), the amount of the total surcharge must be greater than just the profit attributable to the level of underage smoking in excess of the target level.

To take that point to its logical extreme, suppose that no plausible amount of investment on the part of the industry in marketing and restricting youth access would produce the target levels of underage smoking. In such circumstances, the best way to achieve the targets (perhaps the only way) may be through a price increase for all cigarettes.⁷⁰⁷ If that were the case, the amount of the surcharge would need to be large enough such that the price of cigarettes sold to all consumers would reach an equilibrium at which the quantity of underage smoking would approximate the target level. According to one economist, achieving that effect would require an enormous payment by the industry, a payment not only many times larger than the maximum amount under the surcharge, but also almost double the *total* payments required under the entire settlement proposal.⁷⁰⁸

Perhaps the most profound problem with the look-back provision has nothing to do with the *total* amount of the industry surcharge, but rather with the manner in which it is apportioned across the industry. The surcharge, like virtually all the payments required by the proposal, is allocated among companies according solely to their shares of the cigarette market.⁷⁰⁹ To see

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707. This scenario assumes, perhaps unrealistically, that manufacturers cannot cheaply price discriminate among smokers and charge significantly higher prices to underage consumers.

708. Professor Harris estimates, based on an analysis of the overall settlement proposal (including the look-back provision) and plausible assumptions about the price elasticity of demand for cigarettes, that the sum of *all the payments* expected to be made by the industry under the proposal—\$368.5 billion over 25 years, see *Tobacco Settlement*, *supra* note 32, at 34—would result in an implicit (or “virtual”) unit tax of \$0.62 per pack of cigarettes. See Jeffrey E. Harris, *Comments on Proposed Resolution* (last modified June 26, 1997) <<http://web.mit.edu/jeffrey/harris/ACSCcomments.html>>, at 1-3 & tbl.2; see also Harris, *supra* note 695, at 1. The implicit tax would be \$0.41 per pack initially, and then rise to \$0.62 per pack after the first five years. See Harris, *supra*, at 1-3 & tbl.2. Professor Harris has shown that the face value of all the payments to be made by the industry, once the “volume adjustment” provision in the agreement is taken into account, is \$304.3 billion. See *id.* at 3. He further calculates the present discounted value of those payments (assuming a 7% discount rate) to be \$194.5 billion. See *id.* at 1. In arriving at these numbers, Harris explicitly assumes that the marketing restrictions and the antismoking campaign directed toward underage consumers would have no effect on the level of smoking. Instead, he assumes that the recent historical trend of a 0.6% annual decline in overall smoking would continue. See *id.* at 3. He does, however, run a sensitivity analysis, assuming a 1% annual decline in smoking, which produced total industry payments of \$289.3 billion, with a present discounted value of \$186.4 billion. See *id.* According to Harris’s calculations, however, such an implicit tax would not be nearly enough to achieve the target levels of underage smoking set forth in the look-back provision. A tax of \$1.50 per pack (indexed to keep pace with inflation) would, by itself, reach those targets. The face value of the total industry payments that would be necessary, under the current proposal, to produce such a unit tax on cigarettes would be \$653.2 billion over 25 years. See Harris, *supra* note 695, at 2. He also determines that the surcharge would reach the \$2 billion cap. See *id.* at 3 n.13. Note that Harris’s calculations regarding the optimal unit tax for achieving the performance target ignore the potential effect of safer cigarette designs. If Harris had tried to take that possibility into account, and to imagine how alternative product designs would affect the demand for cigarettes, his task would have been much more difficult. In fact, to do the analysis completely, he would have required all the same information that would be needed to determine, on a command-and-control basis, what the optimal cigarette design should be. This observation should serve to reemphasize the benefits of an *ex post*, as compared with an *ex ante*, incentive-based approach.

709. See *Tobacco Settlement*, *supra* note 32, at 54.

the problem with that system of allocating the costs, suppose the aggregate amount of the surcharge accurately measures the profit attributable to underage smokers in excess of the target and that, except for those forgone profits, manufacturers can costlessly meet the target. Under those assumptions, the surcharge would still not produce the incentives necessary to achieve the target reductions, because of an unraveling problem of the sort that we have already encountered.⁷¹⁰ Each company would bear all of the costs of an investment in curtailing underage smoking of its cigarettes. In contrast, the benefits of its efforts would be shared by the entire industry; it would enjoy, at most, only its market share of those benefits.⁷¹¹ Thus, even were it in the industry's collective interest to lower underage consumption of cigarettes to target levels, it may not be in each company's interest to reduce underage consumption of its own cigarettes. Because all the companies face roughly the same incentives, they would all end up selling to underage consumers. The industry as a whole would end up bearing the maximum surcharge. Given this unraveling problem, the performance targets would not be met unless the targets and surcharges were tailored to specific companies,⁷¹² or unless the surcharge were drastically increased.⁷¹³

710. See *supra* Subsection IV.C.2.

711. The manufacturer may not enjoy even that much. Where industry efforts fall short of the target, no company will get to enjoy any benefits of its investments. The *ex post* command-and-control exception may be intended to mitigate that problem. See *supra* note 703. In light of the difficulty that the FDA would likely have in implementing that exception, however, it may create more problems than it solves. Where the industry overshoots the target, no company will enjoy the benefits of the overinvestment.

712. The Koop-Kessler Committee apparently noticed the potential unraveling problem and, at least initially, called for a change in the proposal so that the FDA would assess penalties on a company-by-company basis. See Taylor, *supra* note 701. We have seen very little recent mention of the unraveling problem with respect to any of the proposal's provisions.

713. The size of the necessary increase will depend on the number of manufacturers in the industry and their market shares. The fewer the number of manufacturers, other things being equal, the lower will be the necessary increase in the surcharge. Cf. Croley & Hanson, *What Liability Crisis?*, *supra* note 40, at 102-03 (making an analogous point with respect to the size of the insurance pools).

Also worth mentioning are two potential enforcement-related flaws with the look-back provision. Fox et al. have pointed out that the proposed settlement envisages relying on data regarding the prevalence of "daily smoking," despite the fact that there are many underage smokers who do not smoke daily, but smoke "frequently," and eventually become adult smokers. See Fox et al., *supra* note 679, at 14. Consequently, reductions in the daily smoking rates of underage smokers would, under the proposed regime, almost certainly overstate the actual reductions in the number of youths smoking. See *id.* As they explain, "If the industry can keep frequent smoking rates relatively high while delaying daily smoking for just a year or two, they will evade the surcharges completely, with little change in the overall number of people who initiate smoking as youth and go on to become addicted smokers." *Id.* at 14-15.

Second, it seems likely that underage smokers will be affected by many of the other provisions in the proposed settlement intended to discourage them from smoking. As already indicated, we are doubtful that those efforts will succeed in substantially altering underage smoking behavior. Nevertheless, they might influence the way underage survey respondents describe their behavior to survey takers. We can easily imagine, for example, that the potential "forbidden fruit" effect of the planned antismoking advertisements and warnings, see *supra* note 653 and accompanying text, might simultaneously increase youth smoking and decrease the willingness of youths to admit to adults that they are smokers. For such reasons, any apparent reduction in underage smoking may, under the proposed regime, overstate the true reduction. Cf. SURGEON GENERAL'S PROGRESS REPORT, *supra* note 3, at 265-66 (summarizing evidence regarding the effect of the "'social acceptability' bias in self-reported data").

Finally, even if the look-back provision were to work flawlessly, and underage smoking rates were eventually to decline by 60%, it seems entirely possible that smoking rates of legal-age consumers could increase to offset the decline in underage smoking. As indicated above, we are quite skeptical of, and concerned by, the widely held view that the current average age of initiation is somehow predetermined by nature.⁷¹⁴

As we detailed in Parts IV-V, under an ex post incentive-based approach, in contrast to the look-back performance-based provision, most of these problems would not emerge. There would be no need to decide ex ante upon a target level of underage smoking or upon the appropriate level or allocation of surcharges. Instead, the tobacco companies would be liable ex post for all the harms caused by their products, and the market would do the rest.

4. *The Proposal's General Price Effects: The Excise Tax Model*

a. *Summary of Provision*

Most analysts estimate that the sum of all the payments expected to be paid by the industry under the proposal—\$368.5 billion over twenty-five years⁷¹⁵—would cause cigarette prices to rise by about \$0.60 per pack.⁷¹⁶ It is possible, therefore, that, as a de facto excise tax, the proposed settlement would internalize some of the costs that consumers otherwise underestimate or externalize.

b. *Critique*

For a variety of reasons, the de facto excise tax will fail to internalize all the costs to consumers and manufacturers. First, the amount of the payment (and resulting price increase) is far too low. As we detailed in Part III, the expected costs of cigarettes total, on average, approximately \$7.00 per pack—at least ten times greater than the predicted price effects of the proposed regime. Moreover, our \$7.00 estimate, which we believe is conservative on its own terms, completely ignores the past costs of smoking, some of which cigarette manufacturers should be required to pay.⁷¹⁷

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714. See *supra* notes 687-691 and accompanying text.

715. See *Tobacco Settlement*, *supra* note 32, at 34. Jeffrey Harris has argued that the actual amount paid will be significantly lower than that. See *supra* note 708.

716. See, e.g., Luran Neergaard, *Deal Seen To Give Big Profits for Tobacco: US Treasury Does Audit*, BOSTON GLOBE, Aug. 17, 1997, at A1 (discussing a recent internal Treasury Department audit, which placed the figure at \$0.62 per pack); Harris, *supra* note 708, at 1-3 & tbl.2 (estimating that cigarette prices would rise \$0.62 per pack after the first five years).

717. The issue of whether the agreement does or should deal with past costs or only future costs presents all of the transition issues raised *supra* Subsection V.C.1. We discuss the proposal in terms of those transition issues in some detail below. See *infra* Subsection VI.E.1.

According to Professor Harris's calculations (applying a 7% discount rate, taking into account the "inflation protection" provision in the proposal,⁷¹⁸ and assuming Medicaid costs will grow by a nominal rate of 5% annually), the \$368.5 billion over twenty-five years may be just enough to cover the states' future cigarette-caused Medicaid expenses.⁷¹⁹ The proposal includes no payments to cover any past smoking-related costs to the Medicaid system. Nor does the proposal include any additional payments to cover the past and future smoking-related costs borne by the Medicare system, which Harris believes may exceed those borne by the Medicaid system.⁷²⁰ In fact, viewed this way, the agreement provides *no* cost-internalization payments for past or future smoking-related health care costs borne by private insurers or by individuals, no payments for ETS harms to third parties, and no payments for the nonpecuniary harms suffered by smokers' families and loved ones who must see the smokers suffer smoking-related illnesses and bury the smokers before their time.

Even if the average per pack price effect were of adequate size, there would remain, in this context too, a significant unraveling problem. The annual payments are fixed and allocated to manufacturers according to market share. Because those costs do not vary according to the risks of each manufacturer's cigarettes, those costs will create no incentive to design safer cigarettes. In sum, although \$368.5 billion is, by almost any measure, a lot of money, it comes nowhere close to internalizing the full costs of cigarette smoking.

C. *The Proposal's Attempt To Reduce Noninsurance Externalities*

The proposal makes one direct attempt to deal with noninsurance externalities. In a provision limiting smoking in public places, the proposal provides an *ex ante* command-and-control response to the external costs of public ETS exposure.⁷²¹ That proposed regulation would have the predictable drawbacks of all command-and-control regulations. For instance, it may prohibit smoking in some workplaces where ETS costs are *de minimis*, such as those with especially good ventilation systems or those where workers themselves are widely dispersed. Less obviously, the command-and-control

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718. See *Tobacco Settlement*, *supra* note 32, at 34.

719. See Jeffrey E. Harris, Written Testimony Before the Senate Judiciary Committee Hearings on the "Proposed Global Settlement: Who Benefits?" 1 (July 30, 1997) (on file with the *Yale Law Journal*). As Harris shows, however, the real face value of the total payout under the agreement is not \$368.5 billion, but a much smaller number (roughly \$304.3 billion), once volume adjustments are taken into account. See Harris, *supra* note 708, at 3.

720. See Harris, *supra* note 719, at 3. Assuming that only 5% of Medicare expenditures are attributable to smoking (which he says is a conservative estimate), Harris calculates the average annual Medicare expenditure for cigarette-related illnesses (during 1995-1996) to be \$9.3 billion. "Projected over a 25-year period, the present discounted value of such expenditures would come to \$192.3 billion." *Id.* at 4. None of those costs is covered under the proposal.

721. See *Tobacco Settlement*, *supra* note 32, at 30-31.

prohibition may reallocate or even increase the ETS costs borne by nonsmokers. For instance, a ban on smoking in public settings would likely have the effect of increasing the level of smoking at home, which would have ETS-related health consequences for smokers' family members. The proposal does nothing to respond directly to the problem of ETS exposure in the home or to the pecuniary and nonpecuniary costs borne by family and friends of smokers on account of the smokers' ill health and premature death.⁷²²

One of the benefits of applying an ex post incentive-based approach to all the costs of cigarettes (not just ETS costs) is that overall smoking levels, public and private, would likely decrease dramatically (because of the price effect) and cigarettes would likely become substantially safer, thereby reducing the need for, as well as the cost of, command-and-control or performance-based responses to public and private ETS exposure. Alternatively, policymakers might consider something along the lines of the employer liability plan (for workplace exposure) and patrons' compensation plan (for non-workplace ETS public exposure) described in Subsection V.C.3. Under those systems, the employers and the proprietors of public spaces themselves would be given incentives to seek the least-cost means of reducing public ETS exposure. If, however, any of the problems for ex post incentive-based systems were to be present—such as the judgment-proof problem or widely dispersed harm⁷²³—something comparable to the proposal's public-smoking restrictions may be warranted.

D. *Specific Provisions Intended To Improve Manufacturer Care Levels*

None of the provisions that we have examined thus far seems likely to have a significant positive effect on encouraging manufacturers to design and market safer cigarettes (that is, on manufacturer care levels). The proposed settlement, however, contains a number of command-and-control and performance-based provisions for regulating the design of cigarettes and the manufacturing processes of cigarette manufacturers.

1. *Command-and-Control Regulations*

On the command-and-control side, the FDA would be given the "authority to mandate the introduction of 'less hazardous tobacco products' that are

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722. For a rough and, we think, conservative estimate of the current per pack costs associated with all of these negative externalities, see *supra* Table 1.

723. See *supra* Subsections V.C.2-3.

technologically feasible."⁷²⁴ This potential for command-and-control regulations contains several drawbacks, at least when compared to an ex post incentive-based regulatory approach. For instance, it is not at all clear how the FDA is supposed to recognize a safer, technologically feasible cigarette that is currently unavailable. The suggested solution to that problem appears to be that the FDA will rely on manufacturers to provide such designs.⁷²⁵ At first blush, that makes sense because manufacturers are much better informed than the FDA with respect to such options. Under closer inspection, however, the policy does not make sense because it assumes that manufacturers will disclose information about potential designs and perhaps produce (or license someone else to produce) cigarette substitutes that they otherwise would not.⁷²⁶ Consequently, the policy could create a strong disincentive to produce such cigarettes, to disclose information about such cigarettes,⁷²⁷ or to create the designs in the first place.

There are a number of factors that might explain a manufacturer's unwillingness to design and produce viable cigarette substitutes under the proposed regime. For instance, a manufacturer could, by offering an alternative design, substantially destabilize the market for cigarettes. Cigarette substitutes would supplant traditional cigarettes and the market share of each manufacturer would be threatened. Insofar as the tobacco industry is aptly characterized as engaging in some form of tacit or express collusion,⁷²⁸ such a destabilizing act on the part of one manufacturer would be actively discouraged by other industry members.⁷²⁹ Perhaps only new entrants into the market—or

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724. *Tobacco Settlement*, *supra* note 32, at 14. That is true only "after a formal rule making subject to the Administrative Procedures Act ('APA'), with the right of judicial review." *Id.* The proposal would also provide for greater FDA oversight over the manufacturing process to prevent contamination and ensure compliance with quality standards. *See id.* at 18.

725. *See id.* at 14 ("The manufacturers will be required to notify FDA of any technology that they develop or acquire and that reduces the risk from tobacco products and, for a commercially reasonable fee, to cross license all such technology, but only to those companies also covered by the same obligations.")

726. The agreement provides in pertinent part:

[T]he Agency shall have the authority to mandate that a manufacturer subject to this Act who owns such technology (at such manufacturer's election) either introduce such products, or at a commercially reasonable market rate, license such technology to a manufacturer who agrees to bring the technology to market in a reasonable time frame. In the event that no manufacturer or licensee introduces such "less hazardous tobacco products," within a reasonable time frame set by [the] FDA, then the U.S. Public Health Service may produce either itself, or through a licensing arrangement, any such product.

Id. at 15.

727. With respect to past industry information of this sort, the proposal purports to "ensure that previously non-public or confidential [documents from] the files of the tobacco industry—including internal [health research] documents—are disclosed to [the] FDA, private litigants[, and the public]." *Id.* at 18. For the details of those arrangements, see *id.* app. VIII. For a collection of critiques of those arrangements, see Tribe Testimony, *supra* note 677; Hubert Humphrey III, Testimony Before the Senate Commerce Committee (July 29, 1997) (on file with the *Yale Law Journal*); Alan Morrison, Serious Flaws in Tobacco Deal (July 23, 1997) (unpublished manuscript, on file with the *Yale Law Journal*).

728. Cf. Anthony Flint, *Collusion on Tobacco in 64 Hunted Report Says Companies Joined in Strategies To Protect Documents*, BOSTON GLOBE, Oct. 1, 1996, at A1.

729. Cf. DOUGLAS F. GREER, *INDUSTRIAL ORGANIZATION AND PUBLIC POLICY* 278 (2d ed. 1984) (noting that "it is not surprising that many cartels attempt to standardize their product, restrict advertising,

relatively small players with little to lose—would be willing to take such a chance. For reasons discussed below,⁷³⁰ however, the proposed regime greatly discourages new entrants. In addition, there would be a disincentive to produce safer cigarettes to the extent that tort claims remain viable and evidence of safer cigarettes encourages courts and juries to find that the manufacturers should be liable for harms caused by traditional cigarettes.⁷³¹

Moreover, even if the FDA could somehow manage to identify a safer cigarette design, that does not imply that it should require that design to be manufactured and sold. Even if a “safer cigarette” is, other things being equal, safer than a traditional cigarette, other things may not be equal. As the experience with low-tar or “light” cigarettes amply demonstrates, a design change can lead to numerous changes that are difficult to anticipate and measure, particularly when the “safer” alternative is still in the design phase. Smokers may switch to the “safer” substitute and smoke more cigarettes, take more puffs per cigarette, or inhale more deeply the smoke of safer cigarettes than they did of the traditional cigarettes.⁷³² Nonsmokers may begin smoking and smokers may be slower to quit smoking because of the “low-risk” alternative. For those sorts of reasons, it is easy to imagine that the risks posed by the seemingly “safer” alternative would be as great or greater than those of traditional cigarettes. To put this point in economic terms, cigarette costs depend not just on manufacturer care levels, but also on activity levels and, in a way, consumer care levels. The forces of command-and-control regulation would likely affect manufacturer care levels alone. Under an ex post incentive-based approach, however, the market would yield the optimal mix of care levels and activity levels by internalizing the costs in the price of cigarettes and creating a market for safer cigarettes.

2. *Performance-Based Regulations*

The proposed settlement also provides that, so as to “insur[e] that the best available, feasible safety technology becomes the industry standard, [the] FDA will have the authority to promulgate Performance Standards . . . that require the modification of tobacco products to reduce the harm caused by those products.”⁷³³ Although the goal is ambitious, a closer reading reveals just how anemic the FDA authority would be. For a minimum of twelve years, the

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and regulate technological change, for standardization and stagnation are most conducive to cooperation”).

730. See *infra* Subsection VI.E.2.

731. One provision in the proposed agreement provides that “[t]he development of ‘reduced risk’ tobacco products after the effective date of the Act is neither admissible nor discoverable.” *Tobacco Settlement*, *supra* note 32, at 40. In light of that provision, manufacturers’ liability-based disincentive may be reduced. To the extent that courts or juries are already aware of safer cigarettes, however, they may on their own draw the inference that older designs are unreasonably dangerous.

732. See *supra* notes 102-107 and accompanying text.

733. *Tobacco Settlement*, *supra* note 32, at 15.

FDA's ability to regulate nicotine would be limited by the following conditions:

- Nicotine yields may be reduced but not eliminated;⁷³⁴
- Traditional tobacco products may not be prohibited;⁷³⁵
- Tobacco products may be modified, but only when the modification (1) will result in a significant reduction of the health risks to smokers; (2) is technologically feasible; and (3) will not result in the creation of a significant black market;⁷³⁶
- The authority to require modification can be exercised only upon a complex and multidimensional showing of "substantial evidence."⁷³⁷

Most critics of the proposal have emphasized that this set of procedural hurdles effectively weakens the FDA's current authority to regulate nicotine.⁷³⁸ Indeed, that appears to be the primary objection of, among others, President Clinton and the Koop-Kessler Committee.⁷³⁹ We suspect that the problems with the performance-based rules will run deeper. Even if the FDA could implement performance-based regulations on a whim, there is little reason to believe that such regulations would be efficient. Again, the FDA simply does not have the information that it would need to design efficient performance-based standards. Indeed, the fact that the FDA has not, under its current authority, implemented any form of significant cigarette design regulation can be seen as an implied acknowledgement on the part of the FDA of its own inability to regulate effectively.⁷⁴⁰

734. *See id.* at 15.

735. *See id.*

736. *See id.* at 15-16.

737. *Id.* at 16. As the agreement explains,

[A] showing of "substantial evidence[]" [must be] based upon an administrative record developed through a formal rule making subject to the Administrative Procedures Act, with the right of judicial review, and any such modification shall be subject to the current procedures of the Regulatory Reform Act of 1996 to provide time and a process for Congress to intervene should it so choose. In the event a party subsequently files a petition seeking an administrative review of whether a modification has, in fact, resulted in the creation of a significant demand for contraband or other tobacco products that do not meet the safety standard and [the] FDA denies the petition, the petitioner shall have the right to seek judicial review of the denial of the petition.

Id. The proposal also provides for the creation of a "Scientific Advisory Committee" to study the effects of nicotine. *Id.* In addition, it provides for the reduction of tar levels in all cigarettes to 12 milligrams, as currently measured by the FTC. *See id.* Although some of the substantive and procedural conditions of FDA regulation would be reduced after 12 years, *see id.*, the restrictions would continue to be quite substantial.

738. *See, e.g.,* Freedman & Hwang, *supra* note 7, Laune McGinley, *Tobacco Deal Hits Hurdle on FDA Role*, WALL ST. J., June 26, 1997, at A3; Dick Polman, *The Fine Print Looms Large over Smoking*, SAN DIEGO UNION-TRIB., Sept. 7, 1997, at G4.

739. *See* Frisby, *supra* note 701 (summarizing the White House critique), Barry Meier, *Clinton Officially Rejects Limits on F.D.A. in Tobacco Plan*, N.Y. TIMES, July 10, 1997, at A20.

740. Unfortunately, it is impossible for us to be more specific in our criticisms of these provisions because the proposal says nothing about the specific terms of the possible performance-based regulations that the FDA might try to implement.

E. *Transition Issues*

The proposed settlement agreement raises a number of vexing transition issues, along the lines of those discussed in Section V.C. What is distressing, however, is that the proposal, in some places, appears to be completely oblivious to the transition issues it raises. In other places, where transition issues are at least recognized, the agreement appears terribly confused about the appropriate response to those issues. In this section, we highlight a few such examples.

1. *The Distinction Between Past and Future Harms: \$368.5 Billion for What?*

Under the proposal, the industry would pay out a total of \$368.5 billion over twenty-five years⁷⁴¹ (not taking into account the effect of the volume-adjustment provisions⁷⁴²). Although this is far more money than most of us are accustomed to contemplating, it is impossible to determine whether or not it is the right amount of money without first asking: What is that \$368.5 billion supposed to cover? Is it a payment by the industry for the past harms caused by cigarettes? Or is it a series of payments designed to correct the market failures in the cigarette market on a purely prospective basis? Or is it something in between? The answers to those questions are critical to resolving the transition issues posed by the proposal. Unfortunately, such answers cannot be found in the text of the agreement.

One approach, discussed above,⁷⁴³ would be to regard all of the payments as being designed to cover the *future* smoking-related Medicaid costs (that is, as a purely prospective correction of the Medicaid insurance externality). A rationale for taking this view would be that the amount of the payments does roughly approximate the amount necessary to achieve that future deterrence objective, though all the other past and future costs of smoking would be left unaddressed, at least by the payments required under the proposal. But, of course, the coincidence of the amount of the payments under the agreement and the amount necessary to cover future Medicaid costs could be just that—pure coincidence. It could be that the payments are supposed to be in part for past and future smoking-related Medicaid costs, in part for past and future Medicare costs, in part for past and future private insurance costs, and so on. Either way, there is no doubt that the \$368.5 billion

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741. See *Tobacco Settlement*, *supra* note 32, at 34.

742. If the volume-adjustment provision is taken into account, a plausible estimate of the total industry payouts under the proposal would be roughly \$304 billion. See *supra* note 708.

743. See *supra* text accompanying notes 718-719.

is far less than the amount necessary even to internalize fully the past harms alone caused by cigarettes.⁷⁴⁴

Perhaps the uncertainty about where the \$368.5 billion figure comes from and what specific harms it is supposed to cover stems from a deeper confusion that characterizes the agreement: the apparent failure to understand the distinction between punishment for past harms and the regulation of risk of future harms, a distinction that is essential to optimizing both general and specific deterrence goals.⁷⁴⁵ As we noted earlier, political reality may require that any new regime protect the existing manufacturers (or at least some of them for some period of time) from bankruptcy.⁷⁴⁶ Therefore, full cost internalization may be impractical. But \$365 billion over twenty-five years is plainly inadequate, even taking into account bankruptcy concerns.⁷⁴⁷

2. *Barriers to Entry*

The proposal seems designed not only to protect the existing cigarette manufacturers (at least the ones who were parties to the settlement agreement) from bankruptcy, but also to protect them entirely from serious competition from new market entrants. Although this portion of the proposal is especially cryptic, the section dealing with “non-participating companies” would appear to impose the following requirements on any cigarette manufacturer that is not a party to the settlement agreement:

- They would be subject to all the same “access restrictions” and FDA “regulatory oversight” that would be imposed on participating companies;⁷⁴⁸
- A “user fee” would be applied to their products to cover their portion of the payments required under the agreement to fund public health programs and state enforcement of access restrictions;⁷⁴⁹
- To avoid constitutional challenges, they would not be subject to the advertising and “corporate culture” provisions⁷⁵⁰ that would be imposed on participating companies, which have consented to such restrictions;⁷⁵¹

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744. Cf. *supra* note 575 (estimating roughly the costs of cigarettes over just the past 10 years to be considerably in excess of \$1 trillion).

745. See *supra* Subsection V.C.1.

746. See *supra* text accompanying note 579.

747. See Harns, *supra* note 579, at 292 (suggesting that the tobacco industry could afford to pay roughly \$32 billion *per year*, based on plausible assumptions).

748. *Tobacco Settlement*, *supra* note 32, at 29.

749. See *id.*

750. *Id.* at 21. These provisions essentially require that companies comply with the spirit as well as the letter of the settlement.

751. See *id.* at 28-29.

- They would receive none of the protections from tort suits afforded to participating companies;⁷⁵²
- To ensure that these companies would not become judgment proof, each nonparticipating company would be required to "place into an escrowed reserve fund each year an amount equal to 150% of its share of the annual payment required of participating manufacturers," exclusive of that portion of the payment allocated to public health programs and federal and state enforcement, and the manufacturer would be allowed to reclaim unpaid funds, with interest, thirty-five years later;⁷⁵³
- "[T]he exemption from civil liability applicable to distributors and retailers of the products of participating manufacturers will not apply to distributors and retailers who handle tobacco products of non-participating manufacturers."⁷⁵⁴

The effect of all these requirements is that any nonparticipating company, presumably including any new market entrant, would have to pay one-and-a-half times the amount that participating manufacturers would be required to pay, *even though new market entrants may have had no responsibility for the past harms of smoking*.⁷⁵⁵ As if that were not enough, nonparticipating manufacturers would effectively be prevented from selling their products through existing distribution channels because any distributor or retailer who carries their products would lose its immunity for tort suits provided under the agreement. Thus, to compete with the participating manufacturers, a nonparticipating company must be prepared to provide its own distribution system. Both of those requirements obviously act as barriers to entry into the cigarette market, thereby serving to protect the existing, "participating" cigarette manufacturers from suffering the competitive consequences of failing to take into account, *ex ante*, the possibility of a transition to an *ex post* incentive-based regime of regulation.⁷⁵⁶ By creating barriers to market entry,

752. *See id.*

753. *Id.*

754. *Id.* at 29.

755. The justification given for the large escrow payments required of nonparticipating manufacturers is to avoid a judgment-proof problem—that is, to ensure that funds will be available to cover whatever tort liability those companies end up having *ex post*. That is certainly a desirable goal. *See supra* Subsection V.C.2. The problem with the provision as written, however, is that while it prevents judgment-proof companies from entering the market, the settlement overall lets existing manufacturers off the hook for past harms, sending the wrong general deterrence message to manufacturers in other industries.

756. Perhaps these provisions help to explain the fact that the stock prices of the major participating tobacco companies fell only briefly when the settlement agreement was announced. *See* James F. Peltz & Myron Levin, *The Tobacco Settlement: How Will Firms Fare?*, L.A. TIMES, June 21, 1997, at D1. Indeed, "[t]he consensus among tobacco equity analysts is that a settlement would significantly boost tobacco stock prices." Stuart Rossmiller, *DMG Comments on Nabisco Holdings Corp.*, Nov. 25, 1997, available in Bloomberg, RJR Nabisco Holdings Corp. Current News File. Of course, without a sophisticated event study, it is impossible to know with any confidence whether the proposed settlement agreement has had any effect on tobacco stock prices. And even if we could identify a significant effect, it would not be clear what such an effect would mean about the market's interpretation of the settlement agreement. It would depend on, among other things, what the market expects the eventual outcome of the tobacco litigation (and threats of FDA regulation) to be. In any event, it seems fairly clear that the market does *not* expect that,

a primary source of new ideas for developing safer cigarettes—the new, start-up tobacco companies—is eliminated.

F. *Assessing the Proposal from a Distance*

We have focused thus far mostly on individual provisions of the settlement. From that perspective, we have concluded that the proposal is fundamentally flawed. The chief proponents of the proposal—particularly the attorneys general who have endorsed it—have asserted that our vantage point is inappropriate. They urge critics to step back and view the proposal as a whole package.⁷⁵⁷ They point out further that the settlement represents a hard-fought negotiation against a savvy and wealthy industry that had yet to pay a penny to anyone injured by cigarettes.⁷⁵⁸ There are, of course, some imperfections in the agreement, they argue, but that is the nature of any give-and-take process. And when one looks at the proposal pragmatically and realistically, they claim, it is evident that much more was gained in the negotiations than was lost.⁷⁵⁹ In the conclusion, we will take up the question of whether, in fact, the settlement is preferable to what has been the status quo. For the remainder of Part VI, we want to respond to the claim that the proposal is somehow more attractive from a distance than it is from up close.

When one reads the entire proposal without focusing on the details, it is hard to deny that it reads as though the settlement would, if enacted, usher in a new age in the cigarette industry. In addition to the specific examples that we provided already regarding the bright promises of many of the settlement's specific provisions, the agreement has big-picture language of the sort that

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at the end of the day, the existing tobacco companies will be held fully liable for all the harms caused by their cigarettes in the past or that they will be left unprotected against unfettered competition from new market entrants if a settlement is reached.

757. Christine Gregoire, Attorney General of Washington, said in defense of the settlement "It isn't perfect, but it's the best anyone has put forward." James Brooke, *Attorneys General Defend Landmark Tobacco Pact*, N.Y. TIMES, June 25, 1997, at D6. Grant Woods, Arizona's Attorney General, admonished "You've got to keep this thing in perspective . . . This is the biggest public health and corporate settlement in the history of this country." *Id.* Tom Miller, Attorney General from Iowa and supporter of the settlement proposal, conceded that there may be some problems with obtaining full disclosure of tobacco company documents, but urged critics not to let those problems "divert attention from the broader settlement." Barry Meier, *Minnesota Official Invites Congressional Scrutiny of Tobacco Industry Files*, N.Y. TIMES, July 28, 1997, at A10.

758. See, e.g., Scott Harshbarger, *What We Won in Tobacco Deal*, BOSTON GLOBE, July 5, 1997, at A11 (arguing that "congressional criticism of our work is somewhat like a group of AWOL soldiers explaining how the war could have been won better or faster" and concluding that "[t]his is an opportunity that we must seize with both hands"). An unnamed tobacco representative recently said of the deal "It's not perfect, but it's far better than what the alternatives are." Saundra Torry, *Warning Against Delay, Tobacco Aides Defend \$368 Billion Settlement*, WASH. POST, July 18, 1997, at A10.

759. It is illuminating to consider, for instance, the initial reactions to, and criticisms of, the settlement made by Drs. Koop and Kessler before the Senate Commerce Committee. Koop and Kessler first argued, in effect, that the settlement should be scrapped and that Congress itself should draft a better set of regulations. Supporters of the agreement argued in response that such proposals were simply unrealistic and that the agreement represented a necessary compromise. See Sheryl Gay Stolberg, *Kessler and Koop Urge Congress To Do Away with the Tobacco Settlement*, N.Y. TIMES, July 30, 1997, at B7.

suggests something fundamental is about to happen to the incentives and mindset of the captains of the cigarette industry. For instance, the opening paragraph of the preamble reads as follows:

This legislation would mandate a total reformation and restructuring of how tobacco products are manufactured, marketed and distributed in this country. The nation can thereby see real and swift progress in preventing underage use of tobacco, addressing the adverse health effects of tobacco use and changing the corporate culture of the tobacco industry.⁷⁶⁰

Similarly, Title I of the proposed settlement is named "Reformation of the Tobacco Industry,"⁷⁶¹ and Section G of Title I is called "Compliance and Corporate Culture."⁷⁶² In that section, the proposal begins by observing that

[a] key element in achieving the Act's goals will be forcing a fundamental change in the way the tobacco industry does business. Accordingly, the Act will provide for means to ensure that the industry will not only comply with the letter of the law but will also have powerful incentives to prevent underage usage of tobacco products and to strive to develop and market less hazardous tobacco products.⁷⁶³

The message in all of this seems to be that because of this agreement, the industry can now be trusted. The culture of denial and deceit will be fundamentally reformed.⁷⁶⁴ Manufacturers will want to comply not just with the letter of the law, but also with the spirit of the law because the proposed settlement, if enacted, will change their basic incentive structure.

The fairly close reading that we gave to some of the settlement details suggests that claims regarding a change in corporate culture are grossly exaggerated. But, as we have said, in this section we want to step back, if that is possible, and take a more distant view of the settlement. If one imagines the range of regulatory options that we have described in this Article as lying along a continuum—with ex post incentive-based regulation at the left end, command-and-control regulations at the right end, and performance-based regulation somewhere in-between—and if one were to imagine stacking each of the settlement's provisions on top of that continuum according to the category of regulation that it represented, one could get an illuminating overall

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760. *Tobacco Settlement*, *supra* note 32, at 1.

761. *Id.* at 8.

762. *Id.* at 21.

763. *Id.*

764. For general accounts of the tobacco culture, see HILTS, *supra* note 12; and KLUGER, *supra* note 9. See also *supra* notes 11-13 and accompanying text (describing the industry's basic strategies to avoid meaningful regulation).

picture of the proposed settlement. Because the vast majority of provisions are command-and-control rules, the right side of the continuum would be stacked high. The left side, in contrast, would be flat. In between, there would be one, maybe two, examples of performance-based regulation, but even they would be located well toward the right end of the continuum. That landscape, as we have already stressed, is precisely the opposite of what would be ideal.

What makes this skewed landscape especially troubling, however, is that it is probably no accident. It is, from the tobacco industry's perspective, ideal. As we have emphasized throughout, command-and-control is the least effective form of regulation. It requires the regulator to have an enormous amount of information about the product, information that the regulator often must rely on the industry to provide. Insofar as the industry is the source of the regulator's information, it becomes relatively easy for the industry to manipulate the process and to avoid really having to internalize the costs of their actions.⁷⁶⁵ Furthermore, the regulations themselves are severely limited by the inability of the regulator to anticipate every countermove that the industry might make in its attempt to save the money that would otherwise have to be spent in complying with the spirit of the regulation. As we have argued in this part, those criticisms certainly apply to the settlement's numerous command-and-control regulations. To be sure, the agreement also contains some elements of performance-based regulations, which, in theory, might pose somewhat of a regulatory threat to the cigarette industry. As we have noted, however, the performance-based aspects of the settlement are rendered quite anemic by substantial ex ante and ex post loopholes and the poorly calibrated and relatively minor surcharges for failing to meet performance targets.⁷⁶⁶

Considering the big picture, therefore, we have no trouble rejecting the suggestion that the proposed settlement would somehow substantially alter the culture or incentives of the tobacco industry. To the contrary, the basic incentives of manufacturers would remain. They would still seek to find and to create loopholes in the regulations. They would still seek to misrepresent the risks to consumers and regulators. Under the proposed regime, their options may be fewer, but not by that much. And we see nothing in the agreement itself to indicate that there has been any sort of fundamental transformation in the industry mindset. There was no public admission regarding the health risks and addictiveness of cigarettes (except by the one manufacturer that was not party to the agreement).⁷⁶⁷ There has been no apology for past conduct and

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765. That phenomenon is known, generally, as the problem of "capture." See W. KIP VISCUSI ET AL., *ECONOMICS OF REGULATION AND ANTITRUST* 38-39 (2d ed. 1995).

766. See *supra* Subsection VI.D.2.

767. Bennett LeBow, CEO of Liggett's parent company, is regularly characterized as a tobacco industry maverick for settling with the state attorneys general and for conceding that cigarettes kill and are addictive (and that cigarette manufacturers intentionally targeted minors). See John M. Broder, *20 States Ask the White House To Spare One Cigarette Maker*, N.Y. TIMES, Aug. 21, 1997, at A19. In very recent

no admission of wrongful conduct. Indeed, in the time since the proposed settlement was made public, it has been business as usual for the industry: Witness Camel's recent advertisements,⁷⁶⁸ the introduction and advertisement of Winston's new additive-free cigarette,⁷⁶⁹ manufacturers' strong resistance to any regulations requiring that they disclose additives and total nicotine content,⁷⁷⁰ and their attack on Dr. Stanton Glantz.⁷⁷¹

Our very strong sense at the end of the day is that the proposed tobacco settlement would accomplish precisely what previous efforts to regulate the cigarette industry have accomplished. Specifically, the proposal would create

depositions in Florida, two tobacco executives made headlines by admitting that cigarettes may pose a health risk. Geoffrey Bible, chairman and CEO of Philip Morris admitted that about 100,000 Americans "might have" died from smoking-related diseases. *Philip Morris Chief Says Smoking Deaths May Number 100,000*, WALL ST. J., Aug. 22, 1997, at A4. The following day, Steven F. Goldstone, chairman of the company that owns the R.J. Reynolds Tobacco Company, testified that he believed that smoking plays a "part in causing lung cancer." Barry Meier, *Chief of R.J. Reynolds Says Smoking Has Role in Cancer*, N.Y. TIMES, Aug. 23, 1997, at A7. These recent admissions may have been intended to avoid outraging the Florida jury by continuing to deny that cigarettes have ill-health effects in the face of, among other things, LeBow's admissions to the contrary. See *id.*

As this Article went to press, there were reports that executives of the leading tobacco companies, including Geoffrey Bible, had admitted in testimony before the House of Representatives that nicotine is addictive, "as the term is commonly understood." Barry Meier, *Tobacco Executives Wax Penitent Before House Panel in Hopes of Preserving Accord*, N.Y. TIMES, Jan. 30, 1998, at A15. The executives also conceded, "in dramatic contrast to the testimony of tobacco officials four years ago," that smoking either causes lung cancer or is a risk factor in the disease. *Id.* The executives' concessions were apparently intended to "rally support for the embattled [settlement proposal]." *Id.*

768. See *supra* text accompanying note 691.

769. R.J. Reynolds very recently introduced a reformulated Winston cigarette, apparently in response to the growing public awareness of the nearly 600 additives—including licorice and ammonia—that cigarette manufacturers commonly include in their cigarettes. See Suein L. Hwang, *Health Groups Challenge Winston Ad Claims*, WALL ST. J., Aug. 25, 1997, at B1. Public health groups have criticized the ad campaign launching the new cigarette—a campaign that asks smokers, "What the heck have you been smoking?"—as misleading and amounting to a health claim. *Id.* They view the campaign as "evidence that the industry is still doing business as usual." *Id.*

770. Massachusetts was the first state in the nation to require manufacturers to reveal additives, including total nicotine content, in cigarettes sold in the state. According to Gregory Connolly, head of the Massachusetts Tobacco Control Program of the state Department of Public Health, the industry is "playing games" in an effort not to comply. Richard Saltus, *Makers To Reveal Cigarette Additives; Massachusetts Order Is First in the Nation*, BOSTON GLOBE, Aug. 20, 1997, at B1.

771. In July 1997, the National Smokers Alliance, a new citizens group funded mostly by the tobacco industry, filed a suit charging Dr. Stanton Glantz, a statistician and professor of medicine at the University of California San Francisco, with scientific misconduct in an influential study concluding that smoking bans in 15 communities produced no adverse economic impact on restaurants. Dr. Kenneth Warner, an economist and public health expert at the University of Michigan and one of the original peer reviewers of Glantz's study, made the following observation: "This seems like a two-sided strategy by the tobacco industry. . . . They're playing good guys in the settlement negotiations with the government, and they're playing the game harder than ever with Dr. Glantz." Bill Richards, *Pro-Tobacco Groups Step Up Attacks on a Longtime Foe*, WALL ST. J., July 23, 1997, at B1; cf. Suein L. Hwang, *Fire Fight: Doctor Whose Study Tied Joe Camel to Kids Takes an Odd Journey*, WALL ST. J., Feb. 21, 1997, at A1 (describing R.J. Reynold's aggressive and litigious reaction to Dr. Paul Fischer's famous study). Dr. Glantz's motion to dismiss the complaint has been granted. See *Tobacco Litigation at a Glantz: A Lawsuit To Silence an Industry Antagonist Is Thrown out of Court*, S.F. EXAMINER, Dec. 8, 1997, at A20. For a description of how the tobacco industry has financed a variety of "fake grassroots ('astroturf') organizations," see Kelder & Daynard, *supra* note 3, at 70. For another example of how the industry is employing those organizations in an effort to push the settlement, see Tatiana S. Boncompagni & Jill Abramson, *Tobacco-Funded Group Gives Legislators Free Trips*, WALL ST. J., Aug. 4, 1997, at A20.

the illusion of regulation (at least initially) while simultaneously protecting the industry from having to internalize the costs of cigarettes.⁷⁷² In the words of C. Everett Koop: "The tobacco industry has always been able to get around or hurdle over measures we set up to try to stop them . . . to make victories of steps we thought would set them back. . . . We don't want that to happen again here."⁷⁷³

VII. CONCLUSION

In this Article, we have attempted to offer a largely economic defense of a number of claims. First, the cigarette market is characterized by severe market failures—namely, information problems and negative externalities. Consequently, immediate government intervention is required, especially given the magnitude of the harms caused by cigarette smoking. Second, the best regulatory response to those market failures is generally to rely as little as possible on command-and-control regulation and to adopt some form of victim-initiated ex post incentive-based regulation, such as enterprise liability or smokers' compensation. Third, to the extent it is politically feasible, the adoption of such a regime should be made retroactive so as to internalize not only the harms caused by cigarettes in the future, but also the harms caused by past smoking. Finally, the recently proposed tobacco settlement agreement takes precisely the wrong approach in recommending the adoption of numerous command-and-control, and limited performance-based, measures and by eviscerating the only existing ex post incentive-based approach (tort law) without proposing any alternative such regime.

Based on the analysis contained in this Article, we recommend that Congress reject the settlement proposal and start over from scratch, this time beginning with the following question in mind: How can we design an effective ex post incentive-based response to the cigarette problem? This Article contains the framework for beginning that analysis, although much work on the details obviously remains to be done.⁷⁷⁴

Those who are interested in the cigarette problem might also ask, however: What if the apparent momentum in Washington to enact a comprehensive and preemptive federal regulatory response to the cigarette problem should die, and we should return to the status quo of a few months or a few years ago? Based on the arguments in this Article, if product-accident deterrence is our overriding goal, we would strongly prefer existing products liability doctrines to the proposed settlement.

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772. That was the effect, for example, of the two most significant prior efforts to regulate cigarette manufacturers. See *supra* note 9.

773. Taylor, *supra* note 612.

774. We take a step toward filling in some of these details in Hanson et al., *supra* note 40.

In contrast to this view, much of the recent discussion about whether and how to regulate cigarettes seems to be based on the assumption that products liability law—or, for that matter, any form of victim-initiated ex post incentive-based regime—should be dropped altogether. For example, to the question of whether cigarette manufacturers should be liable to smokers through one or another mechanism, a common response is that smokers should not be permitted to foist the consequences of their own decisions onto others. Richard Epstein, for instance, recently argued that cigarette manufacturers should not have to pay a penny to anyone and that, instead, “smokers should own up to . . . their actions.”⁷⁷⁵ Robert Samuelson expresses a similar sentiment: “I don’t smoke and would fight my children if they start. But otherwise, people have a right to choose. Punishing them for their choice denies their freedom. Rewarding them for the ill effects of their choice denies their responsibility.”⁷⁷⁶

That sort of “take responsibility” rhetoric is powerful, particularly in the United States, where we have long taken pride in our national ideal of rugged individualism. (This is, after all, Marlboro country.) If the goal is to make all parties “own up” to their decisions, however, several arguments can be made that the appropriate policy response would be to adopt enterprise liability or some other such victim-initiated ex post incentive-based regulatory system. First, although the critics of products liability currently seem to exercise exclusive rights to the “take responsibility” rhetoric, it is not at all clear why that rhetoric could not be deployed at least as effectively by defenders of tort law. For example, a strong argument can be made that, without products liability or some other type of ex post incentive-based regulation of cigarettes, tobacco *manufacturers* would be allowed to avoid responsibility for *their* actions.⁷⁷⁷ Indeed, some analysts have calculated that the proposed settlement would, if enacted, increase the industry’s net profits.⁷⁷⁸ Second, even if we are worried primarily about individual rather than corporate responsibility, the only way to be sure that smokers take full responsibility for their actions would be through the implementation of an ex post incentive-based regime of

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775. Epstein, *supra* note 22.

776. Samuelson, *supra* note 22; *see also* Chapman, *supra* note 22 (“The war on the tobacco industry is also a war on the right of individuals to make their own choices—and their obligation to take responsibility for the consequences.”).

777. *See supra* notes 12, 144, 161, 219, and accompanying text (providing examples of the industry’s most culpable conduct); *cf.* Mary J. Davis, *The Supreme Court and Our Culture of Irresponsibility*, 31 WAKE FOREST L. REV. 1075 *passim* (1996) (discussing several recent Supreme Court decisions on products liability and calling for the Court to reconsider doctrine that encourages irresponsible manufacturer conduct).

778. *See* John M. Broder, *Industry Windfall Seen in Tobacco Deal*, GREENSBORO NEWS & REC. (N.C.), Sept. 23, 1997, at A1 (describing an FTC study finding that “the tobacco companies could reap as much as \$123 billion in additional profits in the next 25 years if the settlement plan is adopted as drafted”); *see also* Peter Passell, *Tobacco Might Thrive with a \$1.50-a-Pack Rise for Cigarettes*, N.Y. TIMES, Sept. 25, 1997, at D2 (describing a study by a Stanford economist indicating that even if President Clinton’s proposed \$1.50 per pack tax were adopted, the market value of tobacco stocks would increase).

regulation and its effects on the price of cigarettes. Otherwise, smokers would continue to externalize substantial costs in the form of environmental tobacco smoke, higher insurance rates, and the like.

Under a victim-initiated ex post incentive-based system, there is no doubt that smokers would be responsible for their decisions. For starters, they would have to pay when purchasing each pack of cigarettes, in the form of higher product prices, for their right to make a claim when a smoking-caused illness occurs. The arrangement is virtually identical to the arrangement that exists between insureds and their first-party insurers. Thus, they would not be getting something for nothing and could not evade responsibility. Even to the extent smokers or their families receive compensation for their harms, it is difficult to say that the dead or seriously ill smoker would ever fully evade the ultimate responsibility for her smoking decisions.

That is not the only misconception about the role of civil liability laws in the cigarette context. Indeed, critics and supporters of the proposed settlement share two flawed premises, which nevertheless seem to be dictating the terms of the policy debate. First, both sides assume that the primary purpose of products liability law in this context is not to serve public health goals, but simply to compensate those injured by smoking. Second, both sides seem to agree that civil liability laws have, to date, failed to serve that or any other worthwhile goal. Consequently, most participants in the debate have indicated in one way or another that the elimination of products liability law would be no big loss, even for smoking plaintiffs. The proponents of the proposed settlement, for instance, point out that, even if \$368.5 billion does not cover all the harms caused by cigarettes, it is a lot more than nothing, which is what manufacturers are often said to have paid in tort damages to individual plaintiffs to date.⁷⁷⁹ Critics are typically less explicit. They make their views known either by not mentioning the effect of the settlement on tort law or by indicating that they would not challenge that effect if only the settlement could be adjusted to serve public health goals better.⁷⁸⁰

Arguably, however, the principal goal of products liability law is, broadly speaking, *public health*, not compensation. In the cigarette context in particular, the question then becomes whether the public health goal is better achieved through products liability law or through the types of regulation envisaged in the proposed settlement. Those who would sacrifice products liability law to accept the settlement implicitly assume that the public health benefits of the latter would outpace the public health benefits of the former. But, perhaps because of the general anti-tort sentiment in this country, that presumption has

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779. See, e.g., Benjamin Wieser, *Tobacco's Trials*, WASH. POST, Dec. 8, 1996, § W (Magazine), at 15 (stating that, of 800 suits filed against tobacco companies, only 12 went to trial and none resulted in the payment of damages to a plaintiff).

780. See *supra* note 612 (describing the consensus view that the tort law implications of the settlement proposal are of little significance).

been largely unexamined and is, for several reasons that we have already noted, highly questionable.

Products liability law comes far closer, at least in theory, to providing an *ex post* incentive-based type of regulation than any alternative form of regulation now being considered (other than the smokers' compensation regime we are proposing). Moreover, products liability law could have more than just a theoretical impact. It is true that no substantial tort judgments have been won against the tobacco industry. Nevertheless, products liability law is currently in a state of flux or disequilibrium. In our view, the growing inevitability of many large civil judgments against the industry helped push the manufacturers to the negotiating table and thus made the \$368.5 billion settlement offer possible. In other words, to say that the settlement agreement would produce \$368.5 billion while tort law has produced nothing is to misunderstand what motivated the agreement in the first place.

It would be more accurate to claim that command-and-control regulation, not products liability law, has failed those who have been harmed by cigarette smoking. The FDA has long declined to exercise its authority in this area, presumably because of the political power of the cigarette industry⁷⁸¹ and because of the FDA's lack of expertise regarding how best to regulate. Furthermore, it has been administrative regulation that has effectively derailed otherwise viable tort claims against cigarette manufacturers.⁷⁸² For example, the FTC-promulgated warning labels have given rise to the preemption defense⁷⁸³ and greatly strengthened the assumption-of-risk defense in tort law. Those defenses have until very recently proved an insurmountable barrier to tort recovery. Thus, in light of this past experience with administrative regulation, it is not clear that we should have much confidence in the expanded role for administrative regulation contemplated in the settlement proposal. Indeed, the American public should be troubled (though not especially surprised) by the fact that the settlement proposal, which the tobacco industry fully supports, would adopt a mix of regulation (lots of command-and-control provisions, some limited performance-based standards, and essentially zero *ex post* incentive-based regulation) that is entirely consistent with the interests of the tobacco industry.

Although we believe the case for *ex post* incentive-based regulation to be quite strong, we would not be surprised to learn that our analysis has overlooked some important considerations that may weaken the case.⁷⁸⁴

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781. See *supra* note 11; *supra* note 20 and accompanying text.

782. See *supra* note 9.

783. See *Cipollone v. Liggett Group, Inc.*, 505 U.S. 504, 530-31 (1992) (plurality opinion); *supra* note 9.

784. Some readers may find our arguments persuasive but nevertheless reject our policy recommendation. The biggest source of that turnabout seems to be the classic slippery slope problem. If we adopt this form of regulation for tobacco, the argument goes, why not for alcohol, chocolate, and fatty foods? One commentator has captured that argument as follows: "Plenty of companies make money selling goods and services that carry serious risks—including 130-proof whiskey, trips up Mt. Everest and cars that

Nevertheless, at the very least we hope that our arguments have been sufficiently provocative and developed to convince those in a position to enact policies to slow down and consider all the regulatory alternatives. Cigarettes and their immense ill-health costs have been, and will likely continue to be, with us for many years. Now is no time for legislative myopia.

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can travel twice the legal speed limit. But we don't let the family of a Corvette owner sue Chevrolet because he got killed trying to take a turn too fast." Chapman, *supra* note 22, *see also id.* ("McDonald's and Burger King sell fat-drenched fare that many people find impossible to resist even though it may someday kill or cripple them.").

To that sort of challenge we have a variety of responses. There are, in our view, many relevant distinctions between cigarettes and other products—distinctions that, when taken together, add up to a relevant difference. First, the magnitude of cigarette risks are far greater than the risks posed by any other consumer product. *See supra* notes 1-4 and accompanying text. Second, while there is no serious argument that a lifetime of smoking, even if done in moderation, actually improves one's health, *see Health Care Reform Hearings, supra* note 330, at 319 (statement of Jeffrey Harris) (responding to this same slippery slope argument and asserting that "cigarettes are toxic to all smokers at every dose"), EPA, SITTING THE RECORD STRAIGHT, *supra* note 4, at 6 (stating that there is no evidence of a threshold below which smoking will not cause cancer), recent studies suggest that moderate alcohol consumption may have healthful effects, *see* Marion Nestle, *Alcohol Guidelines for Chronic Disease Prevention: From Prohibition to Moderation*, NUTRITION TODAY, Mar. 13, 1997, at 86. Those two reasons add up to a third. By making cigarette manufacturers pay, there is little or no risk of actually causing consumers to switch to more dangerous activity. Fourth, there is good evidence (though there could be much better brand-specific evidence) regarding the causal link between cigarettes and the particular diseases they cause. Fifth, the number of cigarette manufacturers is limited, and the source of a victim's injuries is relatively easy to identify, thus facilitating a brand-specific causal analysis. In contrast, it is not possible to identify the particular health effects of the fat and cholesterol that some consumers derive from eating at McDonald's or Burger King. Sixth, almost all of the relevant harms of cigarettes are temporally distant from most of the benefits. While that may also be true of chocolate, it is less true of alcohol and even less true of other risky activities—for example, sky-diving or motorcycle riding. Seventh, cigarettes are chemically addictive. *See supra* note 144. Finally, the tobacco industry has actively misrepresented the underlying risks of smoking. *See supra* notes 12, 58, 769. And after all is said and done, to the extent there are other products that come close to cigarettes on a number of the above-listed dimensions, we have no problem with sliding down the slippery slope. *See supra* note 262.

APPENDIX: A CLOSER LOOK AT VISCUSI'S SURVEY DATA

In Part II, we attempted to rebut the commonsense notion that consumers are well-informed of the risks of smoking. In addition, we responded to the arguments and evidence presented by some efficiency-minded legal scholars (principally W. Kip Viscusi) that purport to buttress that commonsense notion. At the time, we postponed a more detailed critique of Viscusi's data and methodology. We take up that critique now. In particular, we examine in some detail the flaws in the survey data on which Viscusi primarily relies.

A. *A Questionable Reference Point*

In Section II.A, we described some of the findings of Viscusi's survey research (and his analysis of tobacco industry survey data) on the question of what consumers estimate the risks of smoking to be. One of Viscusi's central findings was that, to the question "[a]mong 100 cigarette smokers, how many of them do you think will get lung cancer because they smoke?",⁷⁸⁵ the average answer from survey respondents was 43%.⁷⁸⁶ This percentage is much larger than what Viscusi estimates to be the true reference point (the actual risk of lung cancer to smokers), which he puts at 5% to 10% per year.⁷⁸⁷ Thus, he concludes, smokers may actually be overestimating, rather than underestimating, the risks posed by cigarette smoking.⁷⁸⁸

Even if one were to accept Viscusi's summary of estimated risks as described in Part II, there is reason to suspect that he significantly understates the actual risks that consumers believed they were estimating. Viscusi calculates the reference point for assessing lung cancer risk by dividing the annual smoking-caused lung cancer mortality figure in 1982 (93,500) by the number of people who smoked in 1985 (52.9 million).⁷⁸⁹ The average *annual* risk of lung cancer mortality, by that measure, is approximately .00177 per smoker. But the average annual risk figure is not a plausible true-risk reference point. The survey respondents were asked how many of 100 "smokers" would get lung cancer because they smoked. Although the survey respondents were not told what the survey question meant by the term "smoker,"⁷⁹⁰ it is unlikely that they would have had in mind the risks faced by an average smoker in

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785. VISCUSI, *supra* note 49, at 155.

786. *See id.* at 68.

787. *See id.*

788. *See id.* at 145.

789. *See id.* at 68 & n.19. Careful readers may have noticed that respondents in the national survey were not asked about lung cancer *mortality*; they were asked only about lung cancer (fatal or not). *See id.* at 64. For this reason, Viscusi's true-risk reference point may be too low. Viscusi conducted two smaller surveys in Durham, North Carolina. In one, he asked 53 respondents the same question as was asked in the national survey. In the other, he asked 206 respondents about *death* from lung cancer. The average response in the former survey was that 41% of smokers would get lung cancer because they smoke; the average response in the latter survey was that 38% of smokers would die from lung cancer because they smoke. *See id.* at 76-77. The difference was not statistically significant, and Viscusi concludes "that the assessed lung cancer fatality rate from smoking is very similar to the assessed lung cancer incidence rate." *Id.* at 77.

790. In describing one limitation of the underlying studies, Viscusi writes:

The character of the data requires the analysis to focus on static consumption decisions. What are the individuals' risk perceptions and tastes, and how do these affect observed smoking behavior? The nature of the data analyzed consequently does not permit consideration of changes in smoking behavior, such as decisions to quit smoking.

any single given year, inasmuch as the term implies a continuing status and would not be likely to elicit a one-year risk estimate.

Viscusi nowhere explicitly acknowledges this key definitional problem with the survey data, but he does implicitly acknowledge it in the following way: In his calculations to obtain a range for the true-risk reference point, Viscusi multiplies the average annual risk figure (.00177) by the total number of years that a "smoker" might smoke. He chooses thirty years for the low end of the range (.05), and sixty years for the high end (.10).⁷⁹¹ It is this thirty- to sixty-year risk figure that he compares with respondents' risk perceptions. In other words, Viscusi understands that, to compare the actual risk of "smoking" against the respondents' estimates, the annual risk figure had to be multiplied by a substantial number to reflect the fact that survey respondents likely imagined "smoker" to refer to a long-term smoker (i.e., someone who smokes for thirty to sixty years). Viscusi's solution to the definitional problem, however, is inadequate. If survey respondents did understand "smokers" to mean "long-term smokers," then it is necessary to do more than simply multiply the average annual risk figure by some "long-term" number of years. Recall that the average annual risk figure is calculated with *all* smokers, including short-term smokers, in the denominator. Short-term smokers, however, face a much lower annual risk of lung cancer than do long-term smokers.⁷⁹² Consequently, the average annual risk figure on which Viscusi relies significantly understates the risk of smoking to long-term smokers.⁷⁹³

There is another reason to suspect that Viscusi's reference point understates the risk that survey respondents believed they were estimating. The survey question asked only about the risk of *lung cancer*. Many survey respondents might have, when answering the multiple-question, five minute telephone survey,⁷⁹⁴ estimated *total mortality* risks (including, for example, the risk of heart disease).⁷⁹⁵ Viscusi

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Id. at 87. Contrary to this statement, the studies reported by Viscusi do not measure "observed smoking behavior." Indeed, they do not even measure *reported* smoking behavior; they measure self-reported status as a "current smoker," a "never-smoker," or a "former cigarette smoker." *Id.* at 155. Each respondent was asked to characterize himself or herself, abstractly, in a way that he or she possibly had never consciously done. Complicating matters further, both the risk-perception and smoking "behavior" questions were presented as if there were no difference, in terms of risk or self-definition, between smoking a pack per week or three packs per day, *see id.*, a variable that can have a significant effect on a smoker's health, *see* SURGEON GENERAL'S PROGRESS REPORT, *supra* note 3, at 43-44.

791. *See* VISCUSI, *supra* note 49, at 68. Our calculations, based on Viscusi's numbers, indicate that the range is from .053 (30 years) to .106 (60 years).

792. *See supra* notes 139-140 and accompanying text (describing evidence that many smokers do manage to quit); *supra* note 156 and accompanying text (citing evidence that quitting reverses many of the ill-health effects of smoking).

793. Viscusi reports more recent evidence suggesting that 117,000 people die yearly from smoking-induced lung cancer. *See* VISCUSI, *supra* note 49, at 84 n.20. Viscusi opts not to base his reference point on that updated information because "[i]mposing such a standard retroactively is an inappropriate standard for judging the soundness of earlier decisions." *Id.* at 67. We disagree. In our view, the relevant question in this context is whether consumers are well-informed of the underlying risks of smoking. If they are not, then the market will not lead to the efficient outcome and enterprise liability (or some other form of incentive-based regulation) may help overcome that market failure. *See supra* Section II C. Using the updated mortality figures, Viscusi calculates a lung cancer risk range of between .06 and .125. *See* VISCUSI, *supra* note 49, at 68.

794. *See* VISCUSI, *supra* note 49, at 153.

795. This possibility seems especially likely given the order and phrasing of the survey questions. Immediately before the lung cancer question (Question 3), respondents were asked questions pertaining to cigarettes' total risks. Question 1 read: "When I mention cigarettes, what comes to your mind?" PROBE: "Anything else?" And Question 2 asked if respondents had heard (even if they did not agree) that smoking "will most likely shorten a person's life," "is dangerous to a person's health," "is bad for a person's health, but not dangerous," and "is not bad for a person's health." *Id.* at 154-55. The fact that Question 3 asked only about lung cancer was a subtle change of orientation that might have gone unnoticed by the telephone

implicitly acknowledges that possibility (as well as the possibility that consumers are more likely to underestimate the less salient risks of smoking).⁷⁹⁶ To correct for it, he calculates the "total smoking mortality risk" to be a range between .16 and .36—"roughly triple the lung cancer mortality risk."⁷⁹⁷ Other scientists using different methodologies, however, have estimated that the mortality risks of smoking are significantly higher. For instance, a 1962 Royal College of Physicians study summarized mortality studies indicating that approximately half of all adult smokers would die from a smoking-related illness.⁷⁹⁸ A 1992 study found that "in each 5-year age group from 45 to 74 the death rates of the smokers are more than double those of non-smokers," suggesting again that roughly half of all smokers die of smoking-related causes.⁷⁹⁹ Those figures suggest that Viscusi's subjects *underestimate* the relevant risks, and may, in Viscusi's words, "necessitate a change in the nature of the discussion."⁸⁰⁰ In sum, Viscusi's "true-risk reference point" is probably too low, and his claim regarding consumer overestimation of smoking risks is likely overblown. Moreover, it is really not possible to construct an accurate true-risk reference point absent much better information regarding what survey respondents thought they were estimating and regarding what the risks truly are to the specific group of "smokers" that survey respondents had in mind.⁸⁰¹

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respondents, in part because lung cancer is the most salient risk associated with cigarettes. For a summary of why lung cancer risks are the most salient, see *id.* at 77.

The order and wording of the survey, furthermore, likely biased respondents' estimates upward by reminding them of negative information about cigarettes and encouraging them to commit to a negative evaluation early on, before hearing other questions (including the lung cancer question). See generally HOWARD SCHUMAN & STANLEY PRESSER, *QUESTIONS AND ANSWERS IN ATTITUDE SURVEYS: EXPERIMENTS ON QUESTION FORM, WORDING, AND CONTEXT* 23-77, 179-201 (rev. ed. 1996) (discussing the possible effects of survey wording and ordering on outcomes); *id.* at 203-30 (discussing "agreeing-response bias" or "acquiescence").

Viscusi recognizes the potentially biasing effects of question order. See VISCUSI, *supra* note 49, at 88. Moreover, he emphasizes the "overwhelmingly adverse sentiment" that the first question elicited "even among current product users." *Id.* For whatever reason, however, Viscusi nowhere considers the possible biasing effect that those extremely negative answers might have had on subsequent answers. Cf. *infra* note 824 (explaining that the absence of a "don't know" option may have had a biasing effect).

796. See VISCUSI, *supra* note 49, at 69-70.

797. *Id.* at 70.

798. See ROYAL COLLEGE OF PHYSICIANS OF LONDON, *supra* note 60, at 44.

799. R. Peto et al., *Mortality from Tobacco in Developed Countries: Indirect Estimation from National Vital Statistics*, 339 LANCET 1268, 1270 (1992). The authors of that study explain further that "[i]f, conservatively, it was assumed that 'only' two-thirds of the observed more-than-twofold mortality excess is caused by tobacco then the [National Cancer Institute] study would still suggest that about 40% of all regular cigarette smokers would eventually be killed by their habit." *Id.*

800. VISCUSI, *supra* note 49, at 68. Survey respondents might also have, for the same sort of reason, been estimating total smoking-caused mortality and morbidity (including, for instance, emphysema), a possibility that Viscusi does not consider. If so, that probability would likely be substantially higher than 50%. See *Medical-Care Expenditures Attributable to Cigarette Smoking—United States, 1993*, 43 MORBIDITY & MORTALITY WKLY. REP. 469, 472 (1994) (noting that indirect losses associated with morbidity totaled \$6.9 billion in 1990); see also Jan J. Barendregt et al., *The Health Care Costs of Smoking*, 337 NEW ENG. J. MED. 1052, 1053 tbl.2 (1997) (concluding that smokers have a significantly higher chance than nonsmokers of contracting many serious diseases).

801. Viscusi acknowledges that "[h]ow one asks the risk-perception question can be of substantial consequence," and that "whatever risk perception question wording is chosen *should be well understood by respondents*." VISCUSI, *supra* note 49, at 74 (emphasis added). To determine whether results of the national survey provided "a reliable index of smoking risk beliefs," Viscusi conducted a number of telephone surveys in the Durham, North Carolina area to explore "the sensitivity of the risk responses to variations in the question formulation." *Id.* at 76. Based on his summary review of those studies, Viscusi concludes that they were probably reliable. See *id.* at 82-83.

For a variety of reasons, however, we remain concerned that the wording of the question did indeed affect the outcome and that Viscusi's sensitivity tests were inadequate. First, many of the other surveys that

B. *Qualitative Versus Quantitative Data*

There is a fair amount of survey data regarding consumers' risk perceptions of cigarettes. For instance, Gallup conducts annual surveys that track consumer awareness of smoking risks.⁸⁰² Viscusi, however, downplays the significance of those surveys for the following reasons

The wording of the questions pertaining to the risk does not elicit a specific probability judgment regarding the hazards of smoking. . . . The survey questions ascertain whether respondents believe that cigarette smoking is "harmful." However, the risk threshold as to what constitutes harm may differ across individuals so that the implications of designating any particular risk as harmful are not necessarily uniform across respondents. In addition, even for any particular respondent we do not know what it means for a product to be "harmful."⁸⁰³

For those reasons, Viscusi concludes that "[a]cross-person comparisons of qualitative risk variables may be invalid."⁸⁰⁴ They "cannot resolve the issue of whether the absolute level of risk perceptions

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Viscusi conducted did not vary the *wording* of the question as much as they varied the *question* being asked. (We have not seen the actual surveys; we have seen only Viscusi's cursory description of them.) As far as we can tell, there were only two surveys that reworded the question asked on the national survey. In one of them, respondents were asked "how many among the 2 million cigarette smokers in North Carolina would get lung cancer because they smoke," and in another they were asked "how many among 1,000 cigarette smokers would get lung cancer because they smoke." *Id.* at 76. Viscusi does not tell readers what the numerical responses were to those questions. Instead, he reports only that respondents tended to give their answers in percentage terms. *See id.* That fact, he indicates, suggests that the wording of the national survey is appropriate. Perhaps so, but, especially given that respondents translated their answers into the same terms, it would be interesting to know what their responses were. If the responses were significantly lower than the answers provided in the national survey, that would tend to cast doubt on Viscusi's conclusions. Moreover, Viscusi's other survey variations seem largely, if not entirely, unresponsive to the basic critique in this section—that is, that the word "smoker" was nowhere defined.

802. *See id.* at 48.

803. *Id.* at 48 (footnote omitted). Viscusi purports to offer "[a]n additional problem" with qualitative risk assessments—specifically, "that the subjective risk cutoffs for labeling an activity risky vary across individuals." *Id.* For example, college-educated workers described jobs with an annual injury rate of .06 as "dangerous," while workers who had not gone to college labeled a job with an injury rate of .09 "dangerous." *See id.* It is not clear to us that there is a difference between this "additional problem" and the first problem that Viscusi identifies—that is, that "the risk threshold as to what constitutes harm may differ across individuals." *Id.* In any event, although Viscusi finds this variation across education levels "substantial," *id.*, it is arguably insubstantial. The evidence suggests a difference of only three percentage points between college-educated workers and workers who did not go to college with respect to whether a workplace was considered dangerous.

804. *Id.* at 48. Despite his criticisms of qualitative studies, Viscusi argues that they nevertheless "provide a mechanism for tracking the development of risk perceptions over time." *Id.* at 49. He justifies that claim by asserting that "comparison over time for relatively stable population groups should be more reliable" than "[a]cross-person comparisons of qualitative risk variables." *Id.* at 48. If Viscusi is correct that the qualitative surveys are unreliable across persons, however, then there is no reason to believe that they are reliable over time. Contrary to his assertion, it is doubtful that population groups have been all that stable, at least in terms of the variables that he suggests might be significant across individuals. For instance, average education levels, income levels, and age levels have changed significantly since 1954, when Viscusi's comparison begins. In 1960, 41.1% of those 25 and older had completed at least four years of high school. *See* STATISTICAL ABSTRACT OF THE UNITED STATES, *supra* note 269, at 159 tbl.241. Per capita disposable personal income was \$8660 as measured in constant 1992 dollars, *see id.* at 448 tbl.692, and the median age of the resident population was 29.5, *see id.* at 14 tbl.13. By 1995, 81.7% of those 25 and older had completed high school, *see id.* at 159 tbl.241, while disposable personal income had risen to \$18,757, *see id.* at 448 tbl.692, and the median age of the resident population had increased to 34.3, *see id.* at 14 tbl.13.

is sufficient. Perceptions may be biased in either direction irrespective of a perception that smoking is 'harmful.'"⁸⁰⁵ In contrast, according to Viscusi, the quantitative surveys on which he bases his conclusions create "a meaningful, well-defined probabilistic metric."⁸⁰⁶

To that line of argument, we have several responses. First, there is considerable evidence from previous surveys that is not qualitative, and, hence, is invulnerable to his criticisms. For instance, one of Viscusi's own tables reveals that as of 1981 (the last year summarized), nearly one-third of all cigarette smokers polled believed that smoking was not "one of the causes of lung cancer."⁸⁰⁷ In the same year, over two-fifths of smokers believed that smoking was not one of the causes of heart disease and two-thirds believed that smoking was not one of the causes of birth defects.⁸⁰⁸ One-fifth of respondents did not think that cigarette smoking was even harmful.⁸⁰⁹ More recently, a 1990 survey in Canada put to respondents the following question: "To the best of your knowledge, what, if any, are the health hazards related to smoking?"⁸¹⁰ Only 44% of the 1030 respondents included lung cancer in their answers, and only 20% included heart disease.⁸¹¹ Such survey results suggest that for a substantial portion of the smoking population, underestimation of the risks of smoking is a significant problem.⁸¹²

Second, although Viscusi claims that he has measured consumer risk assessments with a quantitative, "meaningful, well-defined probabalistic metric,"⁸¹³ the precision his data appear to provide is likely an illusion. To be sure, respondents' answers to the survey questions were numerical. In that sense, Viscusi is correct to claim that the "wording of the questions pertaining to the risk[s] . . . elicit[s] a specific probability judgment" from respondents.⁸¹⁴ Those numerical responses, however, are unlikely to be any more precise—and may be less precise—than are respondents' judgments regarding whether cigarettes are "harmful." Cognitive psychology suggests that most people do not typically assess risks

805. VISCUSI, *supra* note 49, at 48.

806. *Id.* at 49.

807. *Id.* at 49 tbl.3-1. Nearly one-third also believed that smoking was not one of the causes of throat cancer. *See id.*

808. *See id.* at 50 tbl.3-2.

809. *See id.* at 50 tbl.3-2.

810. Environics Research Group Ltd., *Awareness of Health Hazards Due to Smoking* tbl.22C (Dec. 17, 1990) (unpublished manuscript, on file with the *Yale Law Journal*).

811. *See id.*

812. In anticipation of this sort of response, Viscusi offers the following reply:

The fact that some small segment of the population does not believe that smoking is harmful does not mean that they equate not being harmful with being risk-free. One can view each respondent as having some threshold risk value, above which a product is classified as harmful.

The fact that cigarettes may not be above this threshold implies only that the respondents believe the risk is not so great that it passes the harmful-risk cutoff.

VISCUSI, *supra* note 49, at 50-51. In our estimation, however, such a view is implausible. It strains the English language to suggest, as Viscusi seems to, that those respondents who answered that smoking is not harmful may well accurately estimate or even overestimate the risks of smoking. Viscusi's claim, recall, is that "[p]erceptions may be biased in either direction irrespective of a perception that smoking is 'harmful.'" *Id.* at 48.

The view seems even less plausible when one considers the substantial percentage of the same group of respondents who did not believe that cigarettes were one of the causes of lung cancer, throat cancer, heart disease, or birth defects: Nearly one-third of smoking respondents did not consider smoking to be one of the possible causes of lung cancer—which "has long been the best documented and most highly publicized risk of smoking." *Id.* at 51. In any event, the view that respondents have some threshold below which they classify a product as nonharmful does not alleviate the problem created by consumer optimism. If the risk does not clear a consumer's harmful-risk threshold, it seems doubtful that the risk will influence that consumer's consumption choices.

813. *Id.* at 49.

814. *Id.* at 48.

in precise probabilistic terms. For example, one researcher summarizes the literature as follows

Intuitively, we seem to understand only four degrees of probability for an event: very likely, somewhat likely (more likely to happen than not), somewhat unlikely (more likely not to happen), and very unlikely. Inside those four compartments all is gray. No difference makes any difference. [For example, a] 6 percent probability appears to us already sufficiently "very unlikely" that the significantly inferior probability of 1 percent is just "the same."⁸¹⁵

Given that dynamic, it seems unlikely that survey respondents truly considered the problem in precise numeric terms. More likely, they simply attempted to translate their vague qualitative risk assessments into numeric equivalents. Because this process of translation would only have been rough, respondents would have been likely to translate their estimates into well-known, "focal" numbers. If one were to begin with the four-category hypothesis, one might predict that answers would be disproportionately clustered at focal numbers representing the edges of the four quarters of 100.⁸¹⁶ For instance, those who believed that smoking poses virtually no risk might have chosen zero (or perhaps some other low focal number such as 5% or 10%). Those who believed that smoking poses a relatively slight risk might have translated their estimate to 25%. Those who believed that smoking poses a medium-sized risk might have chosen 50%. And those who believed that smoking presents a very significant risk might have chosen 75% or even 100%.

With that sort of prediction in mind, it is illuminating to examine with some care several notable features of the survey evidence on which Viscusi relies. The first question on the survey was what Viscusi describes as "an open-ended memory probe regarding individuals' reactions to cigarettes."⁸¹⁷ To summarize the responses to that question, Viscusi divides "reactions" into twenty-two categories, such as "causes lung cancer," "shortens life, kills," and "trying/have tried to quit."⁸¹⁸ Viscusi reports the percentage of respondents who gave answers in each category as well as "the mean lung cancer risk assessment . . . corresponding" to each category.⁸¹⁹ As Viscusi stresses, the "adverse sentiment against the product" is "stunning," even "overwhelming."⁸²⁰ For our purposes, the most illuminating finding is that 1.3% of respondents indicated that they did not believe, or at least were skeptical of claims, that cigarettes are harmful.⁸²¹ Among those nonbelievers and skeptics, the average probabilistic risk assessment was approximately 25%.⁸²² The fact that even those individuals overestimate the "true risk" of smoking by a factor of between two and five should give pause to anyone who would treat the respondents' numeric assessments as anything more than loose proxies for qualitative judgments. That point becomes especially clear when one carefully considers the distributions of probabilistic survey responses. Viscusi summarizes those distributions as follows

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815. Massimo Piattelli-Palmarini, *Probability Blindness: Neither Rational nor Capricious*, BOSTONIA, Mar./Apr. 1991, at 28, 32-33.

816. Cf. THOMAS C. SCHELLING, *THE STRATEGY OF CONFLICT* 111-13 (1980 ed.) (discussing focal-point solutions).

817. VISCUSI, *supra* note 49, at 88.

818. *Id.* at 89.

819. *Id.* at 88.

820. *Id.*

821. *See id.* at 89.

822. *See id.* (The mean risk perception of those respondents was 26.6%. Current smokers within that group estimated 23.5%. *See id.*)

TABLE 2. DISTRIBUTION OF LUNG CANCER RISK PERCEPTIONS
FOR CIGARETTE SMOKING⁸²³

DISTRIBUTION OF LUNG CANCER RISK PERCEPTION (RISK)	FRACTION WITH RISK PERCEPTIONS IN INTERVAL	
	FULL SAMPLE	CURRENT SMOKERS
RISK < .05	.052	.092
.05 ≤ RISK < .10	.046	.051
.10 ≤ RISK < .20	.117	.130
.20 ≤ RISK < .30	.136	.146
.30 ≤ RISK < .40	.090	.114
.40 ≤ RISK < .50	.052	.050
.50 ≤ RISK < .60	.239	.228
.60 ≤ RISK < .70	.070	.056
.70 ≤ RISK < .80	.084	.050
.80 ≤ RISK < .90	.042	.027
.90 ≤ RISK < 1.0	.041	.028
RISK = 1.0	.030	.026
Mean RISK (standard error of mean)	.426 (.005)	.368 (.009)
Sample size	3119	779

Unfortunately, Viscusi's distributional categories do not permit us to determine the precise extent to which estimates clustered around quartile cutoffs. Nevertheless the distributions do appear consistent with the four-category prediction. Moreover, several points that Viscusi makes in his description of the distribution indicate that, in fact, the distribution of survey responses is strikingly consistent with that four-category prediction. For instance, Viscusi concedes that there is "clustering of responses around salient risk levels, such as .25 and .50."⁸²⁴ Viscusi's only response to this clustering is that "the

823. See *id.* at 69 tbl.4-2; see also *id.* at 124 tbl.6-3 (including numbers for respondents aged 16-21).

824. *Id.* at 68. Complicating matters further (and making Viscusi's data even less precise), the clustering around 50% (approaching one-quarter of all responses) may partially reflect an attempt on the part of some respondents to answer "I don't know." Cf. SCHUMAN & PRESSER, *supra* note 795, at 114 (explaining that significant random or systematic errors may be created by respondents "who really have no views on the issues under inquiry and simply flip mental coins in order to satisfy the interviewer's expectation of an answer").

direction of bias imparted by such rounding is unclear."⁸²⁵ Thus, Viscusi's interpretation of the evidence seems to be that the respondents did have precise quantities in mind, quantities that they merely rounded off for purposes of the survey. Our claim, in contrast, is that the respondents did not operate with precise quantitative risk assessments. Instead, they had only foggy qualitative assessments that they forced into numeric terms for purposes of the survey. Insofar as our version is accurate, the numeric responses do not mean what they appear to mean.

Viscusi unwittingly endorses our interpretation of the distributional data when he attempts to explain "[a]n intriguing aspect of" the distributions—specifically, that a "reasonably large fraction of smokers . . . believe the risk level is 1.0 yet continue to smoke."⁸²⁶ Viscusi explains "[A] contributing factor [to this outcome] is that the assessed cases of lung cancer per 100 smokers tend to be clustered at salient numbers. Respondents assessing a RISK of 1.0 may believe that lung cancer is highly likely but not necessarily a certain outcome."⁸²⁷ Viscusi's point seems to be exactly ours. Respondents may well have chosen numbers that reflect nothing more than a rough approximation of their qualitative risk assessments.

If, indeed, that was the tendency of survey respondents, then all of the problems that Viscusi identifies with qualitative surveys were present with his "quantitative" survey. One cannot determine whether a person who gave 25% as a response (because she believed that cigarettes pose only a slight risk of lung cancer) is pessimistic or optimistic. Paraphrasing Viscusi, the risk threshold as to what constitutes "a slight risk" may differ across individuals, making the implications of such designations unclear and not necessarily uniform across respondents.

In light of the evidence regarding how individuals assess risks, the "qualitative" surveys that Viscusi disparages may be superior to his favored "quantitative" surveys, on at least two grounds. First, such surveys better reflect the qualitative categories that many people use when assessing risk, and they do not create survey noise by forcing respondents to translate those categories into a less familiar language. Second, they do not create the potentially dangerous illusion of having employed "a meaningful, well-defined probabilistic metric."⁸²⁸

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825. VISCUSI, *supra* note 49, at 68.

826. *Id.* at 124.

827. *Id.* at 124-25.

828. *Id.* at 49.