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First-Party Insurance Externality: An Economic Justification for Enterprise Liability

Jon D. Hanson

Kyle D. Logue

THE FIRST-PARTY INSURANCE EXTERNALITY: AN ECONOMIC JUSTIFICATION FOR ENTERPRISE LIABILITY

Jon D. Hanson† *and Kyle D. Logue*‡ *

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† Law Clerk, Judge José A. Cabranes, United States District Court for the District of Connecticut; B.A., Rice University; J.D., Yale Law School.

‡ Law Clerk, Judge Patrick E. Higginbotham, United States Court of Appeals for the Fifth Circuit; B.A., Auburn University; J.D. Yale Law School.

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INTRODUCTION

Guido Calabresi was the first to argue that accident law should minimize the costs of accidents, including the costs of avoiding accidents.[1] Calabresi warned, however, that under certain circumstances the presence of insurance will thwart the "general deterrence"[2] goal of accident law:[3] Irrespective of the liability rule, if insurers do not classify insureds into sufficiently narrow risk pools, insureds will in large measure externalize[4] accident costs to their insurers.[5] Calabresi called this problem the "externality due to insufficient subcategorization";[6] we shall refer to it as the "insurance externality."

That insurance can blunt the deterrence[7] effects of a liability rule is uncontroversial.[8] In fact, some commentators have argued

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1 GUIDO CALABRESI, THE COSTS OF ACCIDENTS: A LEGAL AND ECONOMIC ANALYSIS 26 (1970).

2 This Article adopts Calabresi's "general deterrence" approach, which "involves attempting . . . to decide what the accident costs of activities are and letting the market determine the degree to which, and the ways in which, activities are desired given such costs." *Id.* at 69 (emphasis omitted). It also "involves giving people freedom to choose whether they would rather engage in the activity and pay the costs of doing so, including accident costs, or, given the accident costs, engage in safer activities that might otherwise have seemed less desirable." *Id.*

3 Calabresi was not the first to recognize this point. *See, e.g.*, Fleming James, Jr., *Accident Liability Reconsidered: The Impact of Liability Insurance*, 57 YALE L.J. 549, 557-63 (1948); Glanville Williams, *The Aims of the Law of Tort*, 4 CURRENT LEGAL PROBS. 137, 165 (1951).

4 *See infra* note 138.

5 G. CALABRESI, *supra* note 1, at 144-45, 248. To understand why insufficient classification permits insureds to externalize the costs of accidents, see *infra* Sections I(B)(2), II(C) & II(D).

6 G. CALABRESI, *supra* note 1, at 145.

7 *See infra* note 28 and accompanying text and Section II(A) for a definition of "deterrence."

8 *See* KENNETH ABRAHAM, DISTRIBUTING RISK 17, 44 (1986); GEOFFREY PALMER, COMPENSATION FOR INCAPACITY 24 (1979); RICHARD A. POSNER, ECONOMIC ANALYSIS OF LAW 187-88 (3d ed. 1986); Izhak Englard, *The System Builders: A Critical Appraisal of Modern American Tort Theory*, 9 J. LEGAL STUD. 27, 55 (1980); John G. Fleming, *The Role of Negligence in Modern Tort Law*, 53 VA. L. REV. 815, 823 (1967); James, *supra* note 3; Richard J. Pierce, Jr., *Encouraging Safety: The Limits of Tort Law and Government Regulation*, 33 VAND. L. REV. 1281, 1298-1300 (1980); Richard A. Posner, *A Theory of Negligence*, 1 J. LEGAL STUD. 29, 33 (1972); Steven Shavell, *On Liability and Insurance*, 13 BELL J. ECON. 120, 120 (1982); Stephen D. Sugarman, *Doing Away with Tort Law*, 73 CALIF. L. REV. 555, 574-76

that *liability insurance*[9] should be prohibited because of its potential for reducing *injurers'* incentives to prevent accidents.[10] Somewhat surprisingly, however, no scholar since Calabresi who has raised the issue has seriously considered whether *first-party insurance*[11] significantly reduces a potential *victim's* incentive to prevent an injury. That is, no scholar has considered the possibility of a first-party insurance externality.[12]

For example, Professor Shavell, in his analyses of the relationship between liability rules and insurance, assumes in one article

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(1985); Oliver E. Williamson, Douglas G. Olson & August Ralston, *Externalities, Insurance, and Disability Analysis*, 34 ECONOMICA 235, 243-44 (1967).

9 Liability insurance (sometimes called third-party insurance) provides coverage to the injurer against having to pay for the costs of accidents for which it is liable.

10 *See* G. CALABRESI, *supra* note 1, at 248-50 & n.7; WILLIAM A. PROSSER & W. PAGE KEETON, LAW OF TORTS 585 (5th ed. 1984) ("For a time . . . there was considerable uncertainty as to whether any contract by which one was to be protected against the consequences of his own negligence . . . was contrary to public policy."). The legality of negligence liability insurance was established in the U.S. by the precedent-setting decision of the Missouri Supreme Court in Breeden v. Frankfort Marine Accident & Plate Glass Insur. Co., 220 Mo. 327, 119 S.W. 576 (1909). In contrast, the Soviet Union prohibits liability insurance, in essence, because of the concern for the insurance externality. *See* Alice Tay, *The Foundation of Tort Liability in a Socialist Legal System: Fault Versus Insurance in Soviet Law*, 19 U. TORONTO L.J. 1, 15 (1969); Andre Tunc, *Introduction*, XI INTERNATIONAL ENCYCLOPEDIA OF COMPARATIVE LAW 3 (1973). The objection to liability insurance based on the insurance externality has recently been made by Sugarman, *supra* note 8, at 574-76.

There are reasons to believe that commercial liability insurance does not blunt, but may enhance, the deterrence effects of products liability law. *See infra* note 247. Moreover, legal economists now argue that as a general matter liability insurance—even if it increases the number of accidents—may be socially desirable. The economic reasoning supporting this conclusion is roughly as follows: So long as victims are fully compensated for their injuries, they will be indifferent between accident and nonaccident states of the world. Risk-averse injurers prefer having liability insurance to not having it. Therefore, allowing potential injurers to purchase liability insurance is Pareto superior to disallowing it (*i.e.*, injurers are made better off while no one else is made worse off). Even if allowing liability insurance raises the accident rate, the resulting increase in liability insurance premiums will be more than offset by the utility gain resulting from the reduction in risk faced by potential injurers who are risk averse. WILLIAM A. LANDES & RICHARD POSNER, THE ECONOMIC STRUCTURE OF TORT LAW 13 (1987); R. POSNER, *supra* note 8, at 188; STEVEN SHAVELL, ECONOMIC ANALYSIS OF ACCIDENT LAW 212-13 (1987). Although this justification is irrelevant to our analysis (for we are not arguing in favor of disallowing any form of insurance), note that the justification depends on the unrealistic assumption that consumers are fully compensated for their injuries. *See infra* Section IV(B) (discussing nonpecuniary losses and fact that consumers are not "fully compensated" for nonpecuniary losses).

11 First-party insurance is non-liability insurance that individuals purchase to cover themselves against various forms of personal loss (*e.g.*, health insurance).

12 In the conclusion, we suggest that the failure of legal economists to address the first-party insurance externality stems from the fact that these scholars, when discussing first-party insurance, focus on the example of car insurance. Car insurance, unlike other forms of first-party insurance, may provide a reasonable amount of risk segregation. *See infra* text accompanying notes 232-47.

that "victims [cannot] alter accident risks"[13] and in another article that first-party insurers can costlessly observe insureds' prevention activities. Under either of these assumptions, first-party insurance will never distort the incentives of potential victims to take precautions.[14] Put differently, Shavell simply assumes away the possibility of a first-party insurance externality.

Similarly, scholars engaged in the important debate over the efficiency of our current liability regime also assume away the first-party insurance externality.[15] Professor Priest, for example, argues that enterprise liability[16] is inefficient because it requires manufacturers to provide consumers with product risk insurance when, in his view, product risks can be more efficiently allocated through first-party mechanisms.[17] Priest premises this conclusion on his assumption that all first-party insurance adequately segregates (or, as Dean Calabresi would say, "subcategorizes")[18] risk pools according to product risks.[19] Priest's ultimate conclusion—that manufacturers should compensate consumers only when the manufacturer has been negligent (as legal economists define the term)[20]—relies heavily upon this assumption about first-party insurance.[21]

Professor Landes and Judge Posner also assume that first-party insurance creates no externality. They claim that all consumers are indifferent to risk, given that all consumers possess first-party insur-

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13 Shavell, *supra* note 8, at 131.

14 Steven Shavell, *On Moral Hazard and Insurance*, 93 Q.J. ECON. 541 (1979); *see infra* Section II(C).

15 For a summary of this debate, see Richard B. Stewart, *Crisis in Tort Law? The Institutional Perspective*, 54 U. CHI. L. REV. 184 (1987); Steven P. Croley & Jon D. Hanson, What Liability Crisis? An Alternative Explanation for Recent Events in Products Liability (forthcoming in 8 YALE J. ON REG. __ (1991)).

16 By "enterprise liability" we do not mean "market share liability." Rather we mean nonwaivable absolute liability against the manufacturer. "[E]nterprise liability . . . provides in its simplest form that business enterprises ought to be responsible for losses resulting from products they introduce into commerce." George L. Priest, *The Invention of Enterprise Liability: A Critical History of The Intellectual Foundations of Modern Tort Law*, 14 J. LEGAL STUD. 461, 463 (1985); *see also infra* note 31 (discussing further what is meant by "enterprise liability").

17 George L. Priest, *The Current Insurance Crisis and Modern Tort Law*, 96 YALE L.J. 1521, 1550-61 (1987).

18 G. CALABRESI, *supra* note 1, at 145.

19 Priest, *supra* note 17, at 1550-61.

20 Under a negligence regime, manufacturers are liable only for those accidents that are least-cost preventable by the manufacturer. *See infra* note 28 (defining "preventable"). According to Priest, any liability standard stricter than negligence generates harmful and unnecessary insurance. Priest, *supra* note 17, at 1526, 1538; George L. Priest, *Modern Tort Law and its Reform*, 22 VAL. U.L. REV. 2, 3 (1987).

21 Moreover, although Professor Priest concludes that a negligence rule is more efficient, he avowedly disregards a principal deterrence justification for enterprise liability: the optimization of manufacturer and consumer activity levels. Priest, *supra* note 17, at 1537 n.90; *see* Croley & Hanson, *supra* note 15, at Part III.

ance. Indeed, Landes and Posner rely on this claim to justify excluding insurance considerations[22] from their analysis of products liability regimes.[23] Implicit in their reasoning must be the assumption that first-party insurance does not distort the effects of products liability rules or, in other words, that there is no insurance externality. Relying on this assumption, Landes and Posner proceed to argue that the current liability regime is generally efficient.[24]

Thus, in reaching contrary conclusions about the efficiency[25] of the current liability regime, Priest and Landes and Posner, like all other legal economists involved in this debate, fail to consider the possibility of a first-party insurance externality.[26] Nevertheless, these scholars and the debate in which they are engaged are having

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22 *See* Section I(A) (describing insurance considerations).

23 W. LANDES & R. POSNER, *supra* note 10, at 273; *see also* William M. Landes & Richard A. Posner, *A Positive Economic Analysis of Products Liability*, 14 J. LEGAL STUD. 535, 536 (1985). In this article, Landes and Posner proffered the following explanation:

> "We assume risk neutrality and therefore do not worry about the insurance effects of strict liability. . . . [T]he assumption of risk neutrality is plausible. . . . [P]otential victims . . . can insure, through accident insurance . . . against the consequences of product-related injuries. And if insurance is actuarially fair, a risk-averse individual will act as if he is risk neutral with respect to expenditures on safety."

Id. Other scholars have avoided analyzing the effects of first-party insurance, also on the assumption that individuals are risk neutral. *See, e.g.*, John Prather Brown, *Toward an Economic Theory of Liability*, 2 J. LEGAL STUD. 323 (1973) (implicit); Steven Shavell, *Strict Liability Versus Negligence*, 9 J. LEGAL STUD. 1, 1 (1980).

This Article assumes that all (or substantially all) consumers have first-party insurance against the risks of product-related injuries. This assumption is commonly made in the literature on products liability law. *See, e.g.*, W. LANDES & R. POSNER, *supra* note 10, at 273. As Professor Priest points out, "[t]oday, the vast majority of Americans possess health, disability, and life insurance coverage, either through private first-party sources or through government supported Medicaid, Medicare, Veterans' Benefits and the like." Priest, *supra* note 17, at 1552; *see also id.* at 1586-87; SENATE SUBCOMM. ON THE AGED, 99TH CONG., 2D SESS., WORKING PAPER NO. 1: A PROFILE OF HEALTH BENEFITS AND THE UNINSURED (Subcomm. Print 1986); George L. Priest, *Compensation Systems and Tort Law: A Preliminary Comparative Approach*, in RISK COMPENSATION & LIABILITY: THE POLICY CHOICES (1986). Priest argues further that although a tiny fraction of the American population is without some form of basic health and disability insurance, that fraction is not central to the policy issues at stake in the products liability debate. Priest, *supra* note 20, at 18-20.

24 *See generally* W. LANDES & R. POSNER, *supra* note 10, at 273-311 (defending the current liability regime—including its strict liability components—as generally efficient).

25 For the purposes of this Article, a liability regime is "efficient" if it minimizes the total costs of product accidents. The term "efficient" is also used to describe the least-cost means of effecting any goal. The terms "efficient" and "optimal" are used interchangeably.

26 Other commentators have failed to consider the potentially deleterious consequences of the first-party insurance externality. *See, e.g.*, PETER W. HUBER, LIABILITY: THE LEGAL REVOLUTION AND ITS CONSEQUENCES Ch. 7 (1988); Patricia M. Danzon, *Tort Reform and The Role of Government in Private Insurance Markets*, 13 J. LEGAL STUD. 517, 518 (1984); Richard Epstein, *Products Liability as an Insurance Market*, 14 J. LEGAL STUD. 645, 667-68 (1985) (implicit); Alan Schwartz, *Proposals for Products Liability Reform: A Theoretical Synthesis*, 97 YALE L.J. 353, 384-88 (1988).

a profound influence on the shape and direction of products liability law.[27]

PREVIEW

Law-and-economics scholars generally agree that an efficient products liability regime would accomplish two principal economic goals. First, it would encourage parties to prevent all preventable accidents (the "deterrence" goal).[28] Second, it would efficiently allocate the risk of unprevented accident costs (the "insurance" goal).[29]

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27 *See, e.g.*, Paul M. Barrett, *Courts May Have to Lead Product Liability Reform*, Wall St. J., Oct. 7, 1988, § 2, at 1, col. 4 (discussing impact of scholarship, including Peter Huber's and George Priest's, on increasing the chance of fundamental judicial restructuring of products liability law); Theodore Eisenberg & James A. Henderson, *The Quiet Revolution in Products Liability: An Empirical Study of Legal Change*, 37 UCLA L. REV. 479 (1990) (demonstrating that courts have already begun restructuring products liability law); *see also* Stewart, *supra* note 15 (describing influence of scholarship in this area). For a review of proposed federal legislation and a list of recently enacted state legislation responding to the "liability crisis," see ROBERT COOTER & THOMAS ULEN, LAW AND ECONOMICS 447-61 (1988); Robert E. Litan & Clifford Winston, *Policy Options*, in LIABILITY: PERSPECTIVES AND POLICY 223 (R. Litan & C. Winston eds. 1988); Priest, *supra* note 20, at 1; Robert Riley, A Critical Analysis of S. 1400, 10-14 (1989) (unpublished manuscript on file with authors). For explanation of this "crisis," see authorities cited *infra* note 50. For a full review of this debate and full discussion of its effects, see Croley & Hanson, *supra* note 15.

28 An accident is "preventable" only when it can be prevented at a cost less than the expected accident cost.

29 *See* John E. Calfee & Clifford Winston, *Economic Aspects of Liability Rules and Liability Insurance*, in LIABILITY: PERSPECTIVES AND POLICY, *supra* note 27, at 16; Danzon, *supra* note 26, at 518; Daniel A. Graham & Ellen Pierce, *Contingent Damages for Products Liability*, 13 J. LEGAL STUD. 441, 441 (1984); Priest, *supra* note 17, at 1537; Shavell, *supra* note 8.

This Article does not address the comparative administrative costs of products liability rules. It is widely accepted, however, that it is theoretically unclear whether a negligence regime or an enterprise liability regime would be less expensive to administer. R. POSNER, *supra* note 8, at 528-29; S. SHAVELL, *supra* note 10, at 263-64; Landes & Posner, *supra* note 23, at 550; Schwartz, *supra* note 26, at 399; Croley & Hanson, *supra* note 15. For a review of the theoretical and empirical literature on this topic, see S. SHAVELL, *supra* note 10, at 262-65.

We realistically assume that product injuries occur only to the purchasers of the products. *Cf.* AAI/AIA JOINT INDUSTRY STUDY, LARGER PRODUCT LIABILITY CLAIMS CLOSED IN 1985 26 (1986) (less than 14% of claims dollars were paid to bystanders). This assumption is commonly made. *See, e.g.*, Landes & Posner, *supra* note 23, at 537. Moreover, relaxing this assumption would not alter our ultimate conclusion that an enterprise liability regime would be most efficient, for it is uncontroversially accepted that enterprise liability is efficient in this context. RICHARD EPSTEIN, MODERN PRODUCTS LIABILITY LAW 59 (1980); Landes & Posner, *supra* note 23, at 550-51; Schwartz, *supra* note 26, at 369 n.27. Courts agree. *See, e.g.*, Elmore v. American Motors Corp., 70 Cal. 2d 578, 586, 451 P.2d 84, 89, 75 Cal. Rptr. 652, 657 (1969). For economic justifications of enterprise liability on the basis of its ability to lower total accident costs by reducing those to third-party victims, see RICHARD B. STEWART & JAMES E. KRIER, ENVIRONMENTAL LAW AND POLICY 227 (2d ed. 1978); A. Mitchell Polinsky, *Strict Liability v. Negligence in a Market Setting*, 70 AM. ECON. REV. PAPERS & PROC. 363 (1980). This Article also assumes that all relevant markets are reasonably competitive. For discussions of the effect of

This Article explores the insurance and deterrence implications of important and long overlooked facts. Consumers are insured through first-party mechanisms against most of the risks of product accidents. However, first-party insurers rarely and imperfectly adjust premiums according to an individual consumer's decisions concerning exactly what products she will purchase, how many of those products she will purchase, and how carefully she will consume them.[30] Such consumer decisions we refer to as "consumption choices." This failure by first-party insurers to adjust premiums according to consumption choices gives rise to a first-party insurance externality. Based on this insight, this Article offers an economic justification for an "enterprise liability" regime that does not recognize the defense of contributory negligence.[31]

Section I initially explains the insurance goal of a products liability regime. It then discusses several causes and the insurance implications of the first-party insurance externality. Section I concludes that, contrary to the claims of recent scholarship,[32] whether enterprise liability is inferior or superior to first-party insurance at allocating the risk of product accidents remains an unanswered empirical question. Section II explains the deterrence goal of a products liability regime. It then describes two additional causes of the first-party insurance externality. Most important, Section II examines the deterrence implications of that externality and argues that, because of the failure of first-party insurance to classify according to consumption choices, consumers externalize[33] the

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market power on liability rules, see Dennis Epple & Arthur Raviv, *Product Safety: Liability Rules, Market Structure, and Imperfect Information*, 68 AM. ECON. REV. 80 (1978); Mitchell Polinsky & William P. Rogerson, *Products Liability, Consumer Misperceptions, and Market Power*, 14 BELL J. ECON. 581 (1983).

30 *See infra* Sections I(B)(2) and II(D) (discussing externalities associated with first-party insurance).

31 By enterprise liability we mean absolute manufacturer liability. The concept of "product defect" is irrelevant for our purposes. Note that we recommend enterprise liability not as a default rule: under our proposal there would be no opting out of the liability rule through warranty limitations or exculpatory clauses. An immutable rule is more appropriate because the first-party insurance exteruality, as we show, undermines the contractual relationship between manufacturers and consumers for the same reasons that it undermines the efficacy of a liability rule less strict than absolute liability. This point is made in much greater detail in Steven P. Croley & Jon D. Hanson, Understanding Products Liability (unpublished manuscript on file with authors).

32 *E.g.*, P. HUBER, *supra* note 26, at 133-34, 205-06; Guido Calabresi, *First Party, Third Party, and Product Liability Systems: Can Economic Analysis of Law Tell Us Anything About Them?*, 69 IOWA L. REV. 833, 838 n.20 (1984); Epstein, *supra* note 26; Priest, *supra* note 17; Michael J. Trebilcock, *The Role of Insurance Considerations in the Choice of Efficient Civil Liability Rules*, 4 J.L. ECON. & ORG. 243 (1988) [hereinafter Trebilcock, *Efficient Liability Rules*]; Michael J. Trebilcock, *The Social Insurance-Deterrence Dilemma of Modern North American Tort Law: A Canadian Perspective on the Liability Insurance Crisis*, 24 SAN DIEGO L. REV. 929, 929 (1987) [hereinafter Trebilcock, *The Dilemma*].

33 *See infra* note 138 (explaning "externalization").

costs of product accidents to first-party insurers.

Section III analyzes the comparative efficiency of various products liability rules in light of this insurance externality. The Section demonstrates that, under certain assumptions, a regime of enterprise liability that excludes a defense of contributory negligence would most efficiently serve the deterrence goal of products liability law.

To simplify exposition, this Article assumes in Sections I through III that consumers are perfectly informed about the expected risks of their consumption choices and that all such risks are pecuniary (*i.e.*, replaceable by money or a substitute good). Admittedly, these assumptions are unrealistic. Therefore, Section IV reanalyzes the issues discussed in Sections I through III in light of the fact that consumers may be imperfectly informed about product risks and that these risks may contain a significant nonpecuniary element. The Article's ultimate conclusion, though slightly qualified by Section IV's reanalysis, remains essentially unchanged: Because first-party insurers fail to classify insureds according to their consumption choices, an enterprise liability regime excluding the contributory negligence defense would most efficiently serve the deterrence goal of products liability law. This conclusion, of course, represents a radical departure from the recent scholarly consensus that products liability law should move away from enterprise liability.[34]

I
OPTIMAL PRODUCT RISK INSURANCE: FIRST-PARTY INSURANCE VERSUS ENTERPRISE LIABILITY

A. The Insurance Goal: Allocating Risk[35]

A tort regime's ability to allocate the risks of unprevented product accidents may be as important a determinant of that regime's

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34 *See, e.g.*, P. HUBER, *supra* note 26 (arguing that manufacturers should be permitted to contract around products liability rules); Kenneth S. Abraham, *Environmental Liability and the Limits of Insurance*, 88 COLUM. L. REV. 942 (1988); Calfee & Winston, *supra* note 29 (arguing for return to negligence); Danzon, *supra* note 26 (arguing in favor of returning to a negligence regime and limiting or eliminating nonpecuniary losses); Epstein, *supra* note 26 (same); Priest, *supra* note 20 (arguing in favor of adopting a particular negligence regime); Schwartz, *supra* note 23 (arguing that consumers and manufacturers should be permitted to opt out of the default rule, and that the default rule should be strict liability with a defense of contributory negligence, and that nonpecuniary-loss damage awards should be disallowed by default). For a more complete explication of these views, see Croley & Hanson, *supra* note 31.

35 For accessible discussions of the theory of insurance, see KENNETH ARROW, ESSAYS IN THE THEORY OF RISK BEARING 134-43 (1971); R. COOTER & T. ULEN, *supra* note 27, at 55-70; S. SHAVELL, *supra* note 10, at 186-99.

overall efficiency as is its ability to deter product accidents.[36] The proper allocation of risk increases social welfare directly by reducing the risk borne by the risk averse.[37] It also increases social welfare indirectly by permitting the risk averse to engage in socially desirable, risky activities and by permitting them to use the assets they would otherwise reserve to offset potential losses.[38]

If transaction costs were zero and if insurers and consumers were perfectly informed as to each individual consumer's expected accident costs,[39] risk-averse consumers would willingly pay an actuarially fair insurance premium[40] to protect themselves fully against the uncertain costs of product accidents. Under these assumptions, insurers could write and monitor fully specified policies[41] that would induce insureds to invest optimally in accident prevention.[42] Under the more realistic assumptions of positive transaction and information costs, however, the provision of full insurance against product risks will, for several reasons, create a loss of social welfare.

1. *Moral Hazard*

First, to the extent that insurers do not perfectly adjust premiums to reflect the actual risks generated by each insured's consumption choices, insureds will not fully internalize expected accident costs and, consequently, will not invest efficiently in prevention.[43] An individual insured will tend to consider only what she must pay out-of-pocket rather than the total costs. In the long run, the total costs will be included in raised premiums, but the extra cost will be

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36 S. SHAVELL, *supra* note 10, at 192.

37 Risk-averse individuals are those whose marginal utility of income, though positive, decreases as income increases. In other words, an individual is risk averse if she prefers a certain return to an uncertain return of the same expected value. Milton Friedman & L. J. Savage, *The Utility Analysis of Choices Involving Risk*, 56 J. POL. ECON. 279 (1948); John W. Pratt, *Risk Aversion in the Small and in the Large*, 32 ECONOMICA 122, 122-24 (1964). The evidence suggests, and it is generally presumed, that consumers are risk averse. R. COOTER & T. ULEN, *supra* note 27, at 60; R. POSNER, *supra* note 8, at 11. For a brief explanation of why consumers demand insurance, see note 204, *infra*.

38 S. SHAVELL, *supra* note 10, at 190-92.

39 Expected accident costs equal the costs of an accident multiplied by the probability of its occurrence.

40 An "actuarially fair" premium equals the insured's expected accident costs. This Article assumes for simplicity that insurance premiums are actuarially fair. *But see infra* notes 46, 48 (examples assume premiums exceed what would be actuarially fair in order to give the insurer a profit).

41 A fully specified policy would exhaustively enumerate the obligations of insureds and insurers in every possible state of the world.

42 S. SHAVELL, *supra* note 10, at 195; Shavell, *supra* note 8, at 127-28; *see infra* Section II(C).

43 Optimal accident prevention requires placing the total costs of accidents on those activities which create them. *See infra* Section II(A).

spread over all policyholders. All insureds have this incentive and follow this strategy. Therefore, all insureds end up paying more for insurance and having more accidents than they would if they were required to weigh the full costs to themselves of an accident-prone activity against the benefits they receive.[44] This phenomenon is known as "moral hazard."[45]

2. *Cross-Subsidization*

To the extent that insureds who present different levels of risk (expected damages) are charged the same premium and lumped into the same insurance pool, low-damage insureds will cross-subsidize high-damage insureds. Consequently, the former will pay more (and the latter will pay less) than the efficient amount towards insurance. An allocatively efficient insurance regime would charge insureds competitively according to their individual risk.[46]

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44 The classic illustration of this problem arises when some people (you know who you are) dine out and agree in advance to split the check evenly. Each has an incentive to order more expensively than if paying only for his own meal. Yet, in the end, each individual as a member of the group must bear the cost of the collective over-ordering.

45 Moral hazard also includes more deliberate acts, such as arson or suicide, that insureds sometimes engage in because they are insured. For more complete expositions of moral hazard, see Mark V. Pauly, *The Economics of Moral Hazard: Comment*, 58 AM. ECON. REV. 531 (1968); Kenneth J. Arrow, *The Economics of Moral Hazard: Further Comment*, 58 AM. ECON. REV. 537 (1968); Bengt Hölmstrom, *Moral Hazard and Observability*, 10 BELL J. ECON. 74 (1979); Shavell, *supra* note 14; *see also* Epstein, *supra* note 26, at 653 (discussing moral hazard). The problem of moral hazard plagues all forms of first-party insurance. Health insurance provides a typical example. Patients who are fully insured tend to consume a much greater volume of health services than do patients who are partially insured. *See* Joseph P. Newhouse, Willard G. Manning, *et al.*, *Some Interim Results From a Controlled Trial of Cost Sharing in Health Insurance*, 305 NEW ENG. J. OF MEDICINE 1501 (1981). But moral hazard poses problems no matter the risk involved. In Japan, insurers recently began to offer insurance to golfers against the risk of having to throw an expensive party should the insured make a hole-in-one. Such parties are the custom among Japanese golfers. The rate of holes-in-one jumped significantly following the advent of this first-party party insurance. Players, it turns out, colluded with their caddies to create the false impression of holes-in-one. Because of this moral hazard problem, Japanese insurers are now on the verge of withdrawing this insurance. E.S. Browning, *A Stroke of Luck is Bad News in Japan if One Isn't Insured*, Wall St. J., Aug 12, 1985, at 1, col. 4.

46 *See* PAUL J. FELDSTEIN, HEALTH CARE ECONOMICS 157 (2d ed. 1983) (discussing inefficiency of cross-subsidies in insurance pools); Ronald H. Coase, *The Marginal Cost Controversy*, 13 ECONOMICA 169 (1946) (describing allocative inefficiencies resulting from cross-subsidies generally).

To better understand this point, consider an example (Table 1). Suppose there are two equally sized groups of insureds, A and B. Group A has low expected damages ($50) and Group B has high expected damages ($100).

Table 1

Group	*Value ($)*	*Expected Damages ($)*	*Normal Profit($)*
A	100	50	10
B	100	100	10

Suppose further that insurers must, to earn normal profits, charge $10 in addition to the

3. *Adverse Selection and Unravelling*

Another potential welfare loss associated with full insurance occurs when potential insureds who know that they pose above average risk "self-select" into insurance pools. This "adverse selection"[47] is a function of (1) the insurer's being unable to classify insureds perfectly according to each insured's expected damages, and (2) the insureds' knowing how their own expected damages compare to the average expected damages of the insurance pool. It depends, in other words, on asymmetrical information regarding expected damages. Under these circumstances, an insurer cannot perfectly control the variance of risk pools. The greater the heterogeneity or variance of risks allowed in an insurance pool, the greater the tendency will be of high-damage individuals to opt into the pool and of low-damage individuals to opt out. Adverse selection creates a social welfare loss by raising the pool's average risk and thereby forcing low-risk individuals to choose between paying disproportionately high premiums or foregoing insurance.

The latter possibility—that low-risk insureds will drop out of risk pools—can lead to risk-pool "unravelling." That is, as low-damage insureds give up their insurance, the premium must be raised to cover the pool's increased average risk. This induces other relatively low-risk insureds to drop out, insurers to further increase premiums, and so it goes.[48]

Ideally, insurance should minimize the welfare losses resulting

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actuarially fair premium. If insurers cannot cost-justifiably determine to which group an insured belongs, insurers will charge all insureds the same premium of $85, or 1/2($50) + 1/2($100) + $10. Group A insureds and Group B insureds will continue to buy insurance, because each insured, we shall assume, receives a positive net benefit from insurance costing $100 or less. Yet this result is allocatively inefficient. The social costs of insuring Group B insureds is $110, not $85. If insurers could distinguish between Group A and Group B, Group A insureds would continue to buy insurance and might even buy more because for them the price would drop from $85 to $60. Group B insureds, on the other hand, would give up their insurance because it would cost them $110, which is $10 more than they are willing to pay. This would be the efficient result. *Cf.* Landes & Posner, *supra* note 23, at 557-58 (similar analysis applied to related point). Like an excise tax which is placed on certain goods but not others and which therefore distorts relative prices, if insurers cannot distinguish between high-damage and low-damage insureds, insurance premiums will act as a tax on low-damage insureds and a subsidy to high-damage insureds. Because insurance premiums do not vary according to expected costs of individual insureds, premiums will distort individual demand for insurance and generate allocative inefficiencies. P. FELDSTEIN, *supra*, at 157.

47 RICHARD G. LIPSEY, PETER O. STEINER & DOUGLAS D. PURVIS, ECONOMICS 437-38 (7th ed. 1984) [hereinafter R. LIPSEY & P. STEINER]. *See generally* Michael Rothschild & Joseph Stiglitz, *Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information*, 90 Q.J. ECON. 629 (1976) (discussing effects of adverse selection on private insurance markets).

48 K. ABRAHAM, *supra* note 8, at 15; Epstein, *supra* note 26, at 650-52. *See generally* George A. Akerlof, *The Market for "Lemons": Quality Uncertainty and the Market Mechanism*,

from moral hazard, cross-subsidization, adverse selection, and unravelling while maximizing the welfare gain created by risk spreading.[49]

B. Meeting the Insurance Goal: First-Party Insurance versus Enterprise Liability

This Section analyzes the comparative abilities of two insurance mechanisms—first-party insurance and enterprise liability *qua* insurance—to efficiently allocate the risks of unprevented product accidents.[50] Under either mechanism, as Part B of this Section explains,

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84 Q.J. ECON. 488 (1970) (describing adverse selection and unravelling process in used car market).

Returning to the example at *supra* note 46, now assume there is asymmetrical information such that insureds, but not insurers, know the Group in which each insured belongs (Table 2). Assume also that the number of Group A and Group B insureds can vary. As already explained, the insurer will initially charge $85.

Table 2

Group	*Value ($)*	*Expected Damages ($)*	*Normal Profit ($)*
A	85	50	10
B	130	100	10

The value that each group places on being insured varies in this example because the members of each group now know their own expected damages. Consequently, any Group B individuals who had no insurance will buy insurance, because for a mere $85 premium they can obtain insurance that they value at $130. This tendency for high-damage individuals to join insurance pools is what is meant by "adverse selection." At the same time, however, there will not be an increase in the number of Group A insureds, because Group A individuals will be indifferent between paying an $85 premium and going uninsured. Hence, the ratio of Type B insureds to Type A insureds will increase. Suppose the ratio increases from 1/2 before the adverse selection to 3/5 as a result of adverse selection. The insurer will have to raise its premium to $90, or 2/5($50) + 3/5($100) + $10, in order to cover the higher average damages of its new risk pool. Notice, however, that when the insurer raises its premiums to $90, Group A insureds will give up insurance altogether, because it will cost $5 more than they are willing to pay. This phenomenon is known as "unravelling." In this example, the ultimate result of adverse selection and unravelling is for low-damage insureds to forego insurance entirely and for premiums to rise to $110, or 0($50) + 1($100) + $10.

49 *See* S. SHAVELL, *supra* note 10, at 196-97.

50 This Article assumes for simplicity that manufacturers are risk-neutral and that they self-insure. *But see infra* note 247 (relaxing this assumption and arguing that there is no liability-insurance externality). There is no consensus, however, as to how firms do or should behave in the face of risk. Richard M. Cyert & Charles L. Hedrick, *Theory of the Firm: Past, Present, and Future: An Interpretation*, 10 J. ECON. LITERATURE 398, 403-04 (1972); *see also* S. SHAVELL, *supra* note 10, at 189-90 (arguing that even if firms have incentives to behave in risk-averse ways, shareholders would prefer that they act as if risk-neutral); Guido Calabresi, *Products Liability: Curse or Bulwark of Free Enterprise*, 27 CLEV. ST. L. REV. 313, 321 (1978) (arguing that firms in a free-enterprise economy should welcome opportunity to administer risks; *i.e.*, they should act as risk preferrers). *But see* David Mayers & Clifford W. Smith, Jr., *On Corporate Demand for Insurance*, 52 J. BUS. 281 (1982) (explaining why even risk-neutral corporations might demand liability insurance).

Several legal economists have recently argued that expansions in products liability law toward enterprise liability have created the "liability insurance crisis." *See, e.g.*, Priest, *supra* note 17, (arguing that enterprise liability has led to the unravelling of con-

insurers will employ two principal methods—copayment features and risk classification—of combatting the potential sources of inefficiency in insurance risk pools. Part B describes the primary copayment features in first-party insurance and argues that similar features exist under an enterprise liability regime. Part C of this Section explains the insurance benefits of risk classification and demonstrates that first-party insurers suboptimally classify insureds according to consumption choices. Part C also argues that, without empirical evidence, one cannot determine which of the two insurance mechanisms—first-party or enterprise liability—can better classify insureds according to "individual-risk characteristics."[51]

1. *Copayment Features*

a. *First-Party Insurance.*[52]

To limit possible risk-pool inefficiencies, first-party insurers often introduce copayment features, such as deductibles and coinsurance, into insurance arrangements. Those copayment features, by requiring insureds, *ex ante*, to include some portion of the accident costs in their decision calculus, help to align the incentives of insureds and insurers and thereby mitigate risk-pool inefficiencies.[53] Deductibles require insureds to pay up to some set portion of their accident expenses (for example, the first $175) before the insurer will pay all or some fraction of the remainder. Coinsurance arrangements, on the other hand, provide that the insurer pays only a fraction (for example, seventy-five percent) of an insured's total losses. Note, however, that first-party insurance contracts typically include "out-of-pocket limits," which place a cap on the amount of copayments an insured can be required to pay per year.[54]

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sumer-risk pools and provider-risk pools); P. HUBER, *supra* note 26, at ch.7 (adopting Priest's view of the "crisis"); Trebilcock, *The Dilemma*, *supra* note 32 (arguing that enterprise liability has increased the socio-legal risk facing liability insurers and that that has led to the "crisis"); Ralph A. Winter, *The Liability Crisis and the Dynamics of Competitive Insurance Markets*, 5 YALE J. ON REG. 367, 455 (1988) (arguing that enterprise liability together with capital constraints facing liability insureds have led to the "crisis"). These scholars offer the "crisis" as evidence for their claim that enterprise liability is inefficient, not taking into account the first-party insurance externality in their explanations of the "crisis." For an explanation of why the "liability crisis" actually provides evidence that enterprise liability is efficient given the first-party insurance externality, see Croley & Hanson, *supra* note 15.

51 *See infra* Section I(B)(2)(b) (defining individual-risk characteristics).

52 The information we discuss in this and later sections on the actual practices of first-party insurers derives from (in addition to authorities cited) telephone conversations with insurance agents and brokers, as well as with industry experts.

53 K. ABRAHAM, *supra* note 8, at 15; Danzon, *supra* note 26, at 526.

54 A $175 deductible and 15% coinsurance, as well as a $1500 out-of-pocket limit, are typical of group health insurance contracts. For a $10,000 health expense, then, the insured's copayments would be $1659 ($175 in deductible and $1474 (.15 × $9825) in

b. *Enterprise Liability.*

Recent critics of enterprise liability have argued that moral hazard would abound under such a system because manufacturers supposedly cannot employ copayment arrangements.[55] Enterprise liability, however, contains features that approximate copayment arrangements; consumers, under enterprise liability, bear some portion of their product-accident losses. For example, consumers making consumption choices will discount potential product liability awards by the probability of losing a suit[56] and will subtract from their expected awards the costs of litigation.[57]

Suppose a consumer, in deciding whether to take optimal or suboptimal care when using a particular product, faces an expected accident cost of $10,000 should she take suboptimal care. Suppose further that she considers her chances of winning an enterprise liability suit, should she actually be injured, to be eighty percent,[58] and the cost of litigating such a suit to be $3000.[59] Under those circumstances, our consumer would be insured for up to $5600 of her expected product-accident cost.[60] Therefore, she would, *ex ante*,

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coinsurance), which is above the out-of-pocket limit by $149. Therefore, the insured would pay $1500, and the insurer would pay the balance, $8500. Telephone interview with Peter Thexton, Chief Actuary for the Health Insurance Association of America (Nov. 15, 1988) [hereinafter Thexton Interview]. Whether policy limits efficiently encourage care on the part of insureds is an unanswered question. *See* Mark V. Pauly, *Taxation, Health Insurance, and Market Failure in the Medical Economy*, 24 J. ECON. LITERATURE 629, 642 (1986) (describing oddity of policy limits in first-party insurance).

55 Epstein, *supra* note 26, at 668. Professor Priest has argued that first-party insurance is superior to enterprise liability because the former generally incorporates copayments, whereas, according to Priest, the latter cannot: "[D]eductibles and co-insurance are features of every first-party insurance contract. Third-party insurance through the tort system, in contrast, *never* incorporates deductibles or co-insurance to control victim moral hazard." Priest, *supra* note 17, at 1553 (emphasis added); *see also* Priest, *supra* note 20, at 16 (making similar assertion).

56 Settlements, too, will reflect this probability.

57 *See* W. Kip Viscusi, *Product Liability Litigation with Risk Aversion*, 17 J. LEGAL STUD. 101, 118 (1988).

58 This figure is purely conjectural. Presumably, however, consumers would not be certain of winning in court since, even under an enterprise liability regime, plaintiffs must at least establish causation. *See infra* Section III. Recent economic studies of litigation suggest that plaintiffs win about 50% of litigated cases. George L. Priest & Benjamin Klein, *The Selection of Disputes for Litigation*, 13 J. LEGAL STUD. 1 (1984).

59 Thirty percent may be a fairly accurate estimation of such costs, given that contingency fees are usually in this range. For a more complete discussion of the various types and relative magnitudes of litigation costs, see GEOFFREY C. HAZARD, JR., CIVIL PROCEDURE 285-95 (3d ed. 1985). For models discussing the effect of legal costs on civil litigation and settlement rates, see generally John P. Gould, *The Economics of Legal Conflicts*, 2 J. LEGAL STUD. 279 (1973); John C. Hause, *Indemnity, Settlement, and Litigation, or I'll Be Suing You*, 18 J. LEGAL STUD. 157 (1989); William M. Landes, *An Economic Analysis of the Courts*, 14 J.L. & ECON. 61 (1971); Richard A. Posner, *An Economic Approach to Legal Procedure and Judicial Administration*, 2 J. LEGAL STUD. 399 (1973).

60 ($10,000 − $3000) × .80 = $5600.

internalize $4400 in copayments. Furthermore, she will be even less willing to take inefficient risks because she is uncertain of the actual amount of compensation she will receive and is risk averse.[61] Finally, to the extent that consumers are not fully compensated for nonpecuniary losses, the risk of such losses will also mitigate moral hazard.[62]

Some scholars have argued that certain tort doctrines (such as contributory negligence) mitigate moral hazard insofar as they require consumers to internalize the costs of product accidents that consumers can prevent at cheapest cost.[63] As Section III describes, however, these doctrines may, because of the first-party insurance externality, be largely ineffective.[64]

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61 *See* Viscusi, *supra* note 57, at 107-08.

62 Here our assumption that all losses are pecuniary is temporarily relaxed. For the proposition that nonpecuniary losses cannot be fully recompensed, see S. SHAVELL, *supra* note 10, at 11 n.9; Priest, *supra* note 17, at 1547-48; *see also* G. CALABRESI, *supra* note 1, at 65, 214-25 (discussing consequences of fact that money damages cannot fully compensate for many types of injuries); Peter A. Diamond, *Single Activity Accidents*, 3 J. LEGAL STUD. 107, 162-63 (1974) (arguing that money is inadequate means of compensation against permanent disabilities and pain and suffering). For a discussion of bow nonpecuniary losses would mitigate moral hazard problems if enterprise liability were the rule in the handgun industry, see Comment, *The Manufacture and Distribution of Handguns As An Abnormally Dangerous Activity*, 54 U. CHI. L. REV. 369, 376 (1987) (authored by Andrew O. Smith).

63 Other tort doctrines that migbt serve an insurance function include assumption of risk, mitigation of damages, extrasensitivity, comparative negligence, and normal and proper use. Professor Trebilcock argues that these doctrines "attempt in theory to address explicitly the problems of adverse selection and moral hazard." Micbael J. Trebilcock, *Comment on Epstein*, 14 J. LEGAL STUD. 675, 677 (1985). This observation is by no means new to law-and-economics scholars. *See* William Bishop, *The Contract-Tort Boundary and the Economics of Insurance*, 12 J. LEGAL STUD. 241, 248-51, 260-63 (1983); Calabresi, *supra* note 32, at 837 n.18; Epstein, *supra* note 26, at 666; Richard S. Higgins, *Products Liability Insurance, Moral Hazard, and Contributory Negligence*, 10 J. LEGAL STUD. 111, 130 (1981); Susan Rose-Ackerman, *Dikes, Dams, and Vicious Hogs: Entitlement and Efficiency in Tort Law*, 18 J. LEGAL STUD. 25, 38-41 (1989). Other scholars have proposed new doctrinal solutions to the problem of moral hazard. For example, Professor Rose-Ackerman has proposed that—because an unqualified rule of strict injurer liability (*i.e.*, enterprise liability) places no incentive on victims to take care—"victims should be paid for the level of preventive activity that would be efficient *plus* the consequential damages that would have resulted if the precautions bad been taken. . . . *whether or not they actually have taken care.*" *Id.* at 25-26 (empbasis in original). Other commentators have recommended that contractual arrangements between manufacturers and consumers be allowed to operate to provide consumers with proper incentives to take care. P. HUBER, *supra* note 26; Epstein, *supra* note 26; Richard A. Epstein, *The Unintended Revolution in Product Liability Law*, 10 CARDOZO L. REV. 2193, 2200 (1989); George L. Priest, *A Theory of Consumer Product Warranty*, 90 YALE L.J. 1297 (1981); Schwartz, *supra* note 26, at 653-58; Stewart, *supra* note 15, at 193; Note, *Imperfect Information, The Pricing Mechanism, and Products Liability*, 88 COLUM. L. REV. 1057 (1988) (authored by Mark Geistfeld).

64 *See infra* Section III(B).

2. *Risk Classification: The Insurance Implications of the First-Party Insurance Externality*

As already explained, the broader the risk pools, the greater will be the cross-subsidization and the tendency toward adverse selection and unravelling.[65] Hence, the more narrowly insurers can define risk pools, the more efficient the insurance mechanism will be. In choosing between first-party insurance and enterprise liability *qua* insurance the goal should be to pick the scheme that—other things equal—best classifies insureds according to their expected accident costs.[66] Insurers, to earn higher profits,[67] have an incentive to classify insureds according to expected accident costs and to adjust premiums accordingly.[68] By doing so, an insurer can offer low-damage insureds lower premiums, while charging high-damage insureds higher premiums.

An insured's expected accident costs are a function of her consumption choices and individual-risk characteristics.[69] We examine each of these in turn.

a. *Classifying According to Consumption Choices.*

As suggested above, scholars typically believe that first-party insurers—by applicant screening and, for some risks, by experience rating—are able to segregate consumer risk pools quite well.[70] Ex-

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65 *See supra* text accompanying notes 46-49.

66 *See* G. CALABRESI, *supra* note 1, at 170 (arguing that in choosing between liability rules, "it is better . . . to put the initial loss on that party whose liability will most cheaply result in important subcategorizations").

67 K. ABRAHAM, *supra* note 8, at 67; *see supra* note 46.

68 For a more complete discussion of why competitive forces provide insurers with incentives to narrow risk pools and of why these incentives are efficient, see Priest, *supra* note 17, at 1545; *see also* ALAIN C. ENTHOVEN, HEALTH PLAN 80 (1980) (describing how health insurers in a free market would attempt to classify insureds until each insured was "charged a premium essentially equal to the expected costs of his or her own medical care").

69 "Individual-risk characteristic" is defined *infra* Section I(B)(2)(b). Using different terminology, other writers have also distinguished between consumption choices and individual-risk characteristics. *See, e.g.*, G. CALABRESI, *supra* note 1, at 171 (with regard to car insurance, "[i]f placing the loss on drivers results in significant subclassifications by characteristics of drivers [*i.e.*, individual-risk characteristics] and, reasonably cheaply, in price distinctions among cars driven [*i.e.*, consumption choices], then a general deterrence argnment exists for saying that drivers are the better loss bearers. This is so uuless placing the loss on manufacturers results in much more subcategorization by car characteristics [*i.e.*, consumption choices] than would the alternative allocation, and this further subcategorization is deemed much more important than some subcategorization by characteristics of drivers [*i.e.*, individual-risk characteristics]."); Priest, *supra* note 17, at 1548-49, 1557-58 (distinguishing between "information about individual risks" and information based on the risks of products).

70 *See* G. CALABRESI, *supra* note 32, at 836-37; Epstein, *supra* note 26, at 660 ("Typically, [first-party insurers] demand detailed information from insureds before taking or rejecting a risk: . . . [For example,] [d]riving records are examined before automobile

cept perhaps for car insurance, however, first-party insurers rarely segregate insureds according to their consumption choices.[71]

It will become clear that under an enterprise liability regime, consumers would, in large measure, be segregated according to consumption choices. Our immediate objective, however, is to make clear what our examination of insurance policies and our interviews with those in the insurance industry have strongly confirmed: first-party insurers make little or no effort to segregate insureds according to consumption choices. First, let us review the few, largely irrelevant exceptions to that general finding. It is true that some first-party insurers for some types of insurance segregate consumers who use certain exceptional products. Some insurers attempt to classify according to whether applicants smoke cigarettes, abuse alcohol, use controlled drugs, or engage in extremely dangerous activities (*e.g.*, scuba diving below forty feet or hang gliding).[72] These are consumption choices whose expected costs are high enough to significantly affect an insured's total expected losses; they also are products whose use correlates highly with other risky activities.[73] Stated differently, insurers who charge higher premiums to smokers do so not only because smoking is itself an exceptionally

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insurance is issued."); *see also* Priest, *supra* note 17, at 1557 ("First-party insurers, by using insurance applications, can distinguish insureds by age, income, occupation, the level of coverage desired, and other personal characteristics related to levels of risk brought to the insurance pool. . . . The collection of these data allows a first-party insurer to define risk pools of *very narrow scope*.") (emphasis added); Schwartz, *supra* note 26, at 405 ("[I]nsurance companies can key rates to observable traits that correlate negatively with the making of claims.").

71 Thexton Interview, *supra* note 54.

72 Telephone interview with John O'Mahoney, Manager of Health Underwriting for Aetna Insurance Company in Hartford, Connecticut (Nov. 28, 1988) [hereinafter O'Mahoney Interview]. For samples of typical policies, see ROBERT KEETON, BASIC INSURANCE LAW 1045-72 (1977). In addition to these exceptions, commentators sometimes offer the example of first-party casualty (fire) insurers who adjust premiums depending on whether insureds have sprinklers, smoke alarms, or fireproofing. Losses that might otherwise be covered by casualty insurance, however, typically constitute a comparatively insiguificant percentage of total products liability damage awards. *See* Priest, *supra* note 20, at 17 ("Tort Law damages are dominated by lost income and pain and suffering . . . ."); *cf.* Priest, *supra* note 17, at 1545-46 (insurance for property losses has been largely unaffected by the "liability crisis"). Thus, the ability to classify insureds according to these characteristics will be relatively unimportant in the choice between products liability rules. Note also that items such as smoke detectors or sprinklers are not typical consumer goods in the sense that they are not consumed for reasons other than to affect the insured risk. Most consumer products are manufactured to serve some primary purpose besides reducing accident costs. Fire extinguishers constitute a form of self-insurance; they are "consumed" to reduce the expected cost of an accident. This is not to say that such preventive measures are unimportant, but only to suggest that they are less relevant to this section's discussion of consumption choices and are more relevant to the discussion below of insureds' individual-risk characteristics. *See infra* Section I(B)(2)(b).

73 O'Mahoney Interview, *supra* note 72.

dangerous activity, but also because the correlative consumption choices and lifestyle characteristics of smokers combine to create even larger health risks.[74]

The extent to which this sort of classification narrows risk pools, however, is *de minimis* for several reasons. First, only a small percentage of insurers attempts to classify in this way. Most health insurance, for example, is provided through private-sector group insurers such as Blue Cross/Blue Shield, through prepaid plans such as health maintenance organizations, or through public programs such as Medicaid or Medicare.[75] For these forms of insurance, insurers virtually never require smokers to pay higher premiums than non-smokers.[76] Second, those insurers who do attempt to classify insureds according to whether they smoke do not classify according to how often, how long, or what brand of cigarette an insured has smoked.[77] A casual user of Carlton Ultra-Lights is pooled with a four-pack-a-day smoker of Camel Filterless—hardly a narrow risk pool. Even if these general classifications serve a segregative purpose, the ease with which insureds can falsify responses further attenuates their usefulness.[78] More important, other than for these few exceptional products, insurers do not even *attempt* to classify insureds according to their consumption choices.[79] Thus, insurers do

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74 A. LEE FRITSHLER, SMOKING AND POLITICS: POLICYMAKING AND THE FEDERAL BUREAUCRACY 22 (3d ed. 1983) (suggesting that nonsmokers may live longer because they watch their health); TOBACCO INSTITUTE STUDY, SMOKING AND HEALTH 1964-1979 THE CONTINUING CONTROVERSY (Jan. 1989) (linking smoking to cancer and other diseases may be unfounded because of conflicting evidence); Frederick L. McGuire, *Smoking, Driver Education, and other Correlates of Accidents Among Young Males*, 4 J. SAFETY RES. 5 (1972) (smokers have higher accident rates than nonsmokers); David Mechanic, *The Stability of Health and Illness Behavior: Results from a 16-Year Follow-Up*, 69 AM. J. PUB. HEALTH 1142 (1979) (nonsmokers are more likely to wear seat belts than smokers). The fact that smoking correlates with other high-risk activities may explain the generality of insurers' questions regarding whether an applicant smokes. *See infra* text accompanying note 77. For a discussion of the deleterious deterrence effects of adjusting premiums based on correlation, see *infra* note 155.

75 *See infra* notes 101-05 and accompanying text.

76 Telephone interview with Tom Musco, Director of Statistics with the Health Insurance Association of America (Nov. 6, 1988) [hereinafter Musco Interview].

77 O'Mahoney Interview, *supra* note 72.

78 *Id.*; *see infra* notes 90-94 and accompanying text.

79 *See* Gary Schwartz, *The Ethics and the Economics of Tort Liability Insurance*, 75 CORNELL L. REV. 313, 318-19 (1990) ("[M]any lines of 'personal' insurance . . . make no effort to reflect the individual's accident potential."). Life insurers fail to segregate insureds according to their consumption choices. Indeed, only 55.5% of life insurance is purchased "individually to meet individual needs." AMERICAN COUNCIL OF LIFE INSURANCE, 1988 LIFE INSURANCE FACT BOOK 17 [hereinafter LIFE INSURANCE FACT BOOK]. A recent survey shows that 94% of policy applicants for even this relatively individualized form of life insurance (*i.e.*, "ordinary life insurance") were accepted and were offered "standard rates" which varied somewhat to reflect the age and gender of the applicant; "extra-risk" (*i.e.*, nonstandard) rates were required of another 4% of applicants because of the applicants' poor health or hazardous occupations; and 2% were denied coverage

not raise premiums for insureds who have particularly hard and slippery bath tubs[80] nor lower premiums for those who use clothes irons that shut off automatically.[81]

There are several reasons why first-party insurers fail to classify insureds efficiently according to consumption choices, notwithstanding the putative benefits of risk classification.[82] First, an insurer will only classify risks when the benefits to the insurer of further classification exceed the costs.[83] The cost to first-party insurers of analyzing the safety characteristics of every consumer product and the consumption choices of every insured may be high enough alone to prevent such classification.[84] By contrast, manufacturers have relatively inexpensive access to and control over information regarding the risks inherent in their products.[85] For this reason, it may be more efficient to put the insurance burden on

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altogether because of "serious health impairments" or "extremely hazardous jobs." *Id.* at 103-04. Thus, providers of even the most individualized form of life insurance seem to make no premium adjustment according to insured's consumption choices. *See also infra* text accompanying note 104 (explaining that much of life insurance is purchased on a group basis and provides virtually no classification of insureds even according to their individual-risk characteristics). For a description of how worker's compensation insurance undermines risk-reduction incentives of workers, see W. Kip Viscusi, *Toward a Diminished Role for Tort Liability: Social Insurance, Government Regulation, and Contemporary Risks to Health and Safety*, 6 YALE J. ON REG. 65, 86-87 (1989).

80 Various safety features are now available for bath tubs—*e.g.*, no-skid bottoms, non-angled bottoms, plastic tubs and plastic siding, wall-flush soap holders, wall-flush hand rails, single-unit water control mechanisms, etc. For all the safety characteristics now available, we would expect there to be more, and we would expect more consumers to take advantage of them, but for the first-party insurance externality.

81 *Cf.* Andrew Blum, *Safety Isn't Always First at Home*, 10 Nat'l L.J., July 25, 1988, at 1, col. 1 (suggesting which household appliances are particularly prone to causing accidents and sampling lawsuits around the country involving 10 commonly used household products).

82 *See supra* Section I(A) (explaining the benefits of risk classification).

83 "[T]he degree of pooling that occurs is a function more of what it costs insurance companies to differentiate among categories of insured than of any clearly defined collective choice of what degree of spreading is more desirable from a societal point of view." G. CALABRESI, *supra* note 1, at 47.

84 *See* K. ABRAHAM, *supra* note 8, at 45, 67, 78; G. CALABRESI, *supra* note 1, at 146; P. FELDSTEIN, *supra* note 46, at 141; S. SHAVELL, *supra* note 10, at 214. *But see* Art-Commentary, 97 YALE L.J. 1105, 1109 (1988) (authored by Barbara Kruger) (suggesting, albeit abstractly, that large insurance companies are better than is commonly believed at monitoring insureds' consumption choices).

85 *See* Walter J. Blum & Harry Kalven, Jr., *The Empty Cabinet of Dr. Calabresi: Auto Accidents and General Deterrence*, 34 U. CHI. L. REV. 239, 250 (1967) (Outside of the auto-accident context, it is better to hold manufacturers liable for nonfault accidents because manufacturers are in a position "to make an economic calculus of accident losses and accident risks."); Guido Calabresi & Jon T. Hirschoff, *Toward a Test for Strict Liability in Torts*, 81 YALE L.J. 1055, 1062 (1972) (manufacturer often "best suited to make the cost-benefit analysis and to act upon it"); Robert L. Rabin, *Indeterminate Risk and Tort Reform: Comment on Calabresi & Klevorick*, 14 J. LEGAL STUD. 633, 638 (1985); *see also* authorities cited *infra* notes 129, 163; *cf.* Escola v. Coca Cola Bottling Co. of Fresno, 24 Cal. 2d 453, 467, 150 P.2d 436, 443 (1944) (Traynor, J., concurring) ("Manufacturing processes, fre-

manufacturers by adopting an enterprise liability regime than to put it on first-party insurers through a negligence regime. "If information on product injuries is costly to obtain, we want to place liability (other things the same) on the party who has the information or can obtain it at lower cost."[86] An enterprise liability regime would force manufacturers to generate and use the information to which they have least-cost access.

Furthermore, even when classifying insureds according to product use is cost-justified for insurers, actual investments in determining product risks will be inefficiently low. Individual insurers would be unable to reap the full return on their investments in information because the information they generate cannot be protected.[87] The information will, by necessity, be revealed in the insurer's applications and policies. Suppose, for example, Insurer One learns through costly investments in research that consumers who use Type A lawnmowers face an increase in expected accident costs of $50 per policy period over consumers who use Type B lawnmowers and a $100 increase over those consumers who avoid using lawnmowers altogether. When the insurer offers a $50 discount to insureds who use Type B lawnmowers and a $100 discount to insureds who do not use lawnmowers at all, Insurer One's competitors will simply replicate Insurer One's policy discounts. The insurer cannot force its competitors to pay for the valuable information, so the insurer gives away the fruits of its costly research. Free-riding competitors, because they can costlessly acquire the classification information without the investor's consent and without compensating the investor, can offer insureds comparatively low rates.[88]

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quently valuable secrets, are ordinarily either inaccessible to or beyond the ken of the general public.").

86 Landes & Posner, *supra* note 23, at 549-50; *see also* G. CALABRESI, *supra* note 1, at 163-64 (arguing that the party better able "to evaluate the accident risk . . . is better suited to bear the . . . loss . . . . [E]xternalization due to inadequate knowledge should be avoided.").

87 "An insurance company will only undertake the cost of differentiation if it can gain a competitive advantage by so doing." G. CALABRESI, *supra* note 1, at 61; *see* K. ABRAHAM, *supra* note 8, at 79; Sugarman, *supra* note 8, at 580.

88 Kenneth Arrow was first to make the point that private incentives to generate risk information are plagued by the public good problem and are therefore less than socially optimal. K. ARROW, *supra* note 35, at 150-52. A public good has two salient characteristics: One party's consumption of the good does not preclude another from consuming it, and once the good is produced, there is no efficient way of precluding another from consuming it. *See* PAUL A. SAMUELSON & WILLIAM D. NORDHAUS, ECONOMICS 13 (1989). In the economics literature, the public good problem in contexts such as this is often specifically referred to as the problem of "non-appropriability." R. COOTER & T. ULEN, *supra* note 27, at 13. For more general discussions of this free-rider problem, see DAVID K. WHITCOMB, EXTERNALITIES AND WELFARE (1972); George J. Stigler, *Free Riders and Collective Action: An Appendix to Theories of Economic Regulation*, 5 BELL J. ECON. & MGMT. SCI. 359 (1974).

The problem of free-riding competitors would likely be much less severe for manufacturers under an enterprise liability regime.[89]

There is an important, practical reason why insurers do not adjust premiums according to consumption choices. Suppose insurers knew that the expected accident costs to an insured of consuming, say, a 6.5 ounce can of chunk light tuna packed in spring water was ten cents. How could insurers incorporate that information into their policies? The insurer might, through its application, ask the insured how many of those cans of tuna she expects to eat during the policy period. The insurer could then adjust the premium accordingly. If the consumer is a tuna lover (or just a big eater) and expects to eat 100 cans, her premium will be raised by $10. But if her premium is raised just because she loves tuna, then she will have an incentive to understate her expected level of tuna consumption. Because the insurer has no way of cost-justifiably monitoring the insured's consumption of tuna, the information about the expected accident costs of tuna will have little or no value to the insurer.[90] To the extent that insurers cannot monitor insureds, incentives will not be appropriately transmitted and insurance pools will suffer from moral hazard and adverse selection.[91] For these reasons and others discussed below,[92] first-party insurance pools are less than optimally segregated according to insureds' consumption choices.[93] Ideally, first-party insurers would adjust insurance premiums with each con-

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89 *See infra* note 129.

90 *See supra* text accompanying notes 75-78 (explaining that insurers do very little classifying of insureds according to even cigarette consumption).

91 *Cf.* Patricia M. Danzon, *Comment on Landes & Posner: A Positive Economic Analysis of Products Liability*, 14 J. LEGAL STUD. 569, 574 (1985).

92 *See infra* note 126 (discussing asset-specific nature of certain insurer investments) and Section II(D)(1) (first-party insurance externality is heightened by fact that manufacturers change the design of their products in response to first-party insurers' incentives and by fact that insurers must bargain with insureds to generate optimal consumer care).

93 This practical problem confronting insurers may have played an important role in encouraging the trend toward enterprise liability. *See, e.g.*, Wangen v. Ford Motor Co., 97 Wis. 2d 260, 287, 294 N.W.2d 437, 452 (1980) ("This court adopted strict liability in tort in product liability cases partly because 'the seller is in the paramount position to distribute the costs of the risks created by the defective product he is selling. He may pass the cost on to the consumer via increased prices.' " (quoting Dippel v. Sciano, 37 Wis. 2d 443, 450, 155 N.W.2d 55, 58 (1967))). According to Professor Priest, the movement in products liability toward enterprise liability was based, in part, on the presumed benefits of manufacturer provided insurance:

> It is advantageous to spread the risks of product injuries broadly through insurance in order to reduce the incidence of loss to any specific individual. Risk spreading can best be provided by manufacturers, rather than by consumers in private insurance markets, because *manufacturers can easily collect a small insurance premium in the price charged for the product.*

Priest, *supra* note 16, at 520 (emphasis added); *see also* Priest, *supra* note 17, at 1559 ("Courts justified third-party insurance coverage based on how easy it seemed to be for manufacturers or service providers to aggregate risks by adding an insurance premium to the price of the product or service.").

sumption choice insureds make. If an insured bought one can of tuna, her premium would increase by ten cents. And if she bought five, her premium would increase by fifty cents. It is fairly obvious, however, that monitoring costs and transactions costs preclude such adjustment by first-party insurers.[94]

Notice, however, that an enterprise liability regime could adjust insurance premiums through the market price of the product at a much lower cost—indeed, at practically no cost. Manufacturers would simply add ten cents to the cost of every 6.5 ounce can of chunk light tuna packed in spring water, and consumers would automatically pay an adjusted insurance premium with every can they buy.[95]

b. *Classifying According to Individual-Risk Characteristics.*

We have argued that first-party insurance fails to classify insureds according to the products they consume, how many of those products they consume, and how carefully they consume them. We have also offered several reasons to explain why risk pools under first-party insurance, unlike those that would exist under enterprise liability, are inefficiently broad with regard to consumption choices. Sections II, III, and IV below explore the deterrence implications of this failure of first-party insurance. But focussing for now exclusively on *insurance* considerations, it is fairly clear that this failure will lead to inefficient degrees of moral hazard, cross-subsidization, adverse selection, and unravelling in first-party insurance pools. Thus, it seems that, as compared to enterprise liability *qua* insurance, first-party insurance leaves much to be desired.[96]

One could respond to this conclusion by arguing that first-party insurance, unlike enterprise liability *qua* insurance, segregates consumers according to other relevant individual-risk characteristics

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94 We have recently been made aware of an interesting exception to this conclusion. American Express now charges nothing for its cardholders to enroll in its "Baggage Delay and Loss Protection Insurance Plan." Instead, American Express charges a $4.75 premium per one-way airline ticket purchased. The insured is billed with each airline ticket she charges on her American Express account. This exception, however, actually supports our argument. If it were economically feasible for first-party insurers to adjust premiums—as it is for American Express in this example—then they would probably do a much better job than they currently do of adjusting premiums according to consumption choices.

95 *See generally* Note, *Controlling Health Care Costs by Controlling Technology: A Private Contractual Approach*, 99 YALE L.J. 1113 (1990) (authored by Paul E. Kalb) (citing these reasons to explain the failure of insurers to adjust premiums according to costs of certain medical technologies); Steven Waldman, *The Insurance Mess*, NEWSWK. 46-50 (Apr. 23, 1990) (describing how first-party insurers have been passive in response to increasing insurance costs).

96 For a more detailed explanation of how enterprise liability would optimize consumption choices, see *infra* Sections II and III.

such as age[97] or income.[98] A consumer's income is relevant in the products liability context because, for the same product-caused disability, the lost-income component—typically one of the two largest components of products liability damages[99]—may be greater for consumers with higher incomes. Under an enterprise liability regime, there is a potential inefficiency: low-income consumers (or more generally, consumers who would have relatively low damages if injured) would, in buying a product, subsidize high-income (or high-damage) consumers. Such cross-subsidies would not only be inefficient, they would also be distributively unjust. The poor and low-income person would be required to pay the same price up front but would, on average, receive less compensation were they later injured by the product.[100] This view, however, has two fundamental problems.

The first problem is that most first-party insurers do not make a significant effort to discriminate among insureds according to their individual-risk characteristics (again, these are characteristics besides consumption choices that affect the expected injury costs of insureds). A majority of health insurance policies, for instance, are provided through large group policies as an employment benefit.[101] Those group policies provide the same coverage for the same premium to very large groups of individuals.[102] Thus, there is likely a significant variance of risk characteristics among the insureds of such pools.[103] The same is likely true of life insurance, roughly forty

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97 An insured's age is relevant inasmuch as it affects the severity of injury. *Cf.* PATRICIA M. DANZON, MEDICAL MALPRACTICE 21-24 (1985) (describing relationship between age of injured and severity of injury).

98 *See, e.g.*, authorities cited *supra* note 69.

99 Priest, *supra* note 17, at 1559.

100 *Id.* at 1558-59.

101 PRESIDENT'S COMMISSION FOR THE STUDY OF ETHICAL PROBLEMS IN MEDICINE AND BIOMEDICAL AND BEHAVIORAL RESEARCH, SECURING ACCESS TO HEALTH CARE: THE ETHICAL IMPLICATIONS OF DIFFERENCES IN THE AVAILABILITY OF HEALTH SERVICE 162 (1983) [hereinafter SECURING ACCESS TO HEALTH CARE] ("Most Americans who have private health insurance obtain it through the workplace . . . ." in the form of employment-based group insurance.).

102 *Id.* at 163:

> The fact that most health insurance is purchased through the workplace has spread the cost of care for workers and their families more evenly across differences in health status than it would otherwise tend to be. (A private insurance market will tend to sort insureds into groups by risk class so that those at higher risk pay higher premiums).

103 *Id.* at 165-67:

> [M]ost workers have had little or no choice in health insurance coverage because their employers offered only one plan . . . . Presumably, employee preferences influence the type of plan offered at each workplace, but preferences must be averaged over the entire group. In 1977, of the 62 million people with employment-related group health insurance only 18% were offered more than one plan. And even they still did not have the range of choice they could expect on the open market.

percent of which also is provided through employer-employee (and other general) group plans.[104] Absent the necessary empirical support, scholars are wrong to merely assert that first-party insurers can (or do) optimally segregate insureds according to their individual-risk characteristics.[105] The second problem with the view that first party insurance is superior to enterprise liability *qua* insurance is explained in the following subsection.

3. *Enterprise Liability: More Efficient than Scholars Assert*

a. *The Conventional Wisdom.*

Scholars typically assume that, for individual-risk characteristics, enterprise liability *qua* insurance would be unable to narrow consumer risk pools.[106] This is supposedly true because in a market economy manufacturers must sell their products to whoever is willing to pay the market price and cannot discriminate among purchasers according to their income, age, or other individual-risk characteristics.[107] Some argue further that manufacturers' inability to discriminate among consumers may create inefficient cross-subsidies.[108]

Other scholars emphasize that this inability to discriminate may also lead to a form of adverse selection.[109] If an enterprise liability regime were implemented, the argument goes, individuals might alter their consumption patterns to take advantage of the resulting price differentials.[110] Certain products would—before enterprise li-

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See also P. FELDSTEIN, *supra* note 46, at 157-58 (describing the significant cross-subsidies that exist in Blue Cross Blue Shield risk pools, and explaining why the breadth of those pools creates allocative inefficiencies).

104 LIFE INSURANCE FACT BOOK, *supra* note 79, at 30-31.

105 *See generally* Roger Feldman, *Health Insurance in the United States: Is Market Failure Avoidable?*, 54 J. RISK & INS. 298 (1987); *see also infra* note 126 (explaining why insurers will invest suboptimally in assessing highly specific individual-risk characteristics).

106 Professor Priest argues that enterprise liability *qua* insurance is "substantially less effective" thau first-party insurance at segregatiug risk pools. Priest, *supra* note 20, at 17. Priest argues that: "[v]ery little information about individual risks . . . is available to third-party iusurers. . . . [T]he manufacturer must sell the product on equivalent terms to all who wish to buy it, and cannot distingnish among consumers . . . in product price . . . ." Priest, *supra* note 17, at 1557-59, 1585-86; *see also* Calabresi, *supra* note 32, at 837, 839-42; Schwartz, *supra* note 26, at 405-06.

Professor Epstein concedes in passing that "[m]ore accurate insurance premiums might be set by tying mandatory coverage to a rate structure that takes into accouut certain differences among insureds; age, sex marital status, and the like." Epstein, *supra* note 26, at 652. But he gives little thought to the possible inefficiencies of inaccurate insurance premiums, concluding that "these details need not detain us." *Id.*

107 *See* Priest, *supra* note 17, at 1558 (auto manufacturer canuot implement risk distinctions and must pass on liability costs through vehicle prices).

108 *See, e.g.*, Landes & Posner, *supra* note 23, at 556-57.

109 See authorities cited *infra* note 113.

110 For an explanation of why high-risk consumers would be unwilling to shift consumption patterns in this way when the product accidents for which manufacturers must

ability—have been consumed primarily by consumers with relatively low individual-risk characteristics.[111] Manufacturers of these products would—after enterprise liability is initiated—be able to charge a relatively low price because their products would, all else equal, enjoy comparatively low expected liability costs.[112] Consumers with relatively high individual-risk characteristics, attracted by the lower prices, might begin to consume such products. This shift by high-risk consumers from more expensive to less expensive products would be a form of adverse selection.[113]

b. *Debunking the Conventional Wisdom.*

The conventional wisdom is that enterprise liability is inefficient because it leads to cross-subsidies and adverse selection and that it is unjust because, in essence, it requires low-income consumers to pay a regressive tax when they buy a product. This view depends entirely on two (typically unstated) assumptions: (1) that a manufacturer cannot design, package and market its product so that the product will be consumed by individuals with relatively homogeneous individual-risk characteristics; and (2) that a manufacturer must charge the same price to all consumers regardless of the consumers' individual-risk characteristics. These assumptions, however, are based on an erroneous oversimplification of consumer-product markets.

For starters, it seems unimaginable that any product would ever be consumed by a random selection of the general population. Casual empiricism suggests that most products are consumed by relatively homogeneous subsets of the population—as defined by income, gender, age, and the like.[114] Consider the injuries—whatever they might be—that bowling balls and golf balls cause their consumers.[115] It seems that the subset of the population consuming golf balls (and we all know how painful that can be) exhibits

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compensate injured consumers contain a significant nonpecuniary component, see Croley & Hanson, *supra* note 15, at Part II(B)(4).

111 *E.g.*, consumers who have below average income.

112 In anticipation of the following Sections we should now observe that after the initiation of enterprise liability, price differentials would occur for a second reason. Manufacturers of "inherently safe products" (a product is "inherently safe" or inherently safer than others when, controlling for consumer care and activity levels, it poses less risk) would be able to charge a relatively low price because their liability costs would be lower than that of their competitors. This price differential would encourage an efficient shift in consumption patterns from riskier to safer products.

113 GEORGE EADS & PETER REUTER, DESIGNING SAFER PRODUCTS: CORPORATE RESPONSE TO PRODUCT LIABILITY LAW AND REGULATION 16 n.6 (1983); Priest, *supra* note 17, at 1564; Calabresi, *supra* note 32, at 837; Epstein, *supra* note 26, at 650-52.

114 Unfortunately, there is no way to fully test the narrowness of consumer-risk pools under enterprise liability without first adopting such a regime.

115 Sporting equipment is used as an example because it is a type of product for

significantly different risk characteristics than the subset consuming bowling balls. For instance, it is probably true, though there are undoubtedly exceptions, that golfers tend to have higher incomes than bowlers. Furthermore, even among golfers, different brands of golf balls attract still narrower groups of consumers. Relatively low-income golfers tend to use Wal-Mart Floaters, whereas high-income golfers tend to use Titlest X-100 Blacks. Similarly, female golfers would be more likely to use Lady Titlests, whereas male golfers would likely use high-compression Golden Rams. This point can be stated more generally: Because demand for any product is to a greater or lesser extent a function of consumer characteristics such as income, age, gender, and taste, most products will, in terms of those characteristics, be consumed by some nonrandom portion of the population at large.

It should be remembered that not only do products naturally attract relatively homogeneous consumer groups, but manufacturers actually design their products with a view to attracting particular sets of consumers.[116] Manufacturers do not produce products that are perfectly homogeneous and perfectly substitutable.[117] Instead,

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which third-party insurers are said to have instituted drastic increases in insurance premiums. *See* Priest, *supra* note 17, at 1521 (citing newspaper article).

116 Professor Priest's ultimate claim that enterprise liability *qua* insurance cannot narrow consumer risk pools, *see supra* note 106, is perplexing, in light of his description of how manufacturers of four-wheel drive vehicles have responded to liability for consumer injuries:

> Manufacturers have been held liable . . . for injuries suffered when these vehicles have rolled or flipped in contexts of extreme mountain driving on grounds that the manufacturer could either design the product to better protect the consumer or insure the consumer for the loss.
>
> Manufacturers must respond to this increased liability either by changing product design to protect drivers in extreme conditions or by increasing insurance coverage for the consumer set as a whole. Whether the manufacturer changes the design or merely increases insurance coverage, product costs will increase and the product price will increase. The price increase, of course, may seem desirable for consumers who drive in extreme backroad conditions. But consumers who purchase four-wheel drive vehicles for other purposes—say, easier driving on snowy or muddy roads—may not find the increased price worthwhile. These consumers could be lured away if they were offered a four-wheel drive vehicle suitable for snow and mud, but not for extreme grades which, if only because of the lower attendant insurance premium, could be offered at a lower price. It is not surprising that many manufacturers have begnn offering van and station wagon models with a four-wheel drive option.

Priest, *supra* note 17, at 1565.

117 Interestingly, some legal economists have come to believe that even corporate stocks traded on major stock markets are far from perfectly substitutable. *See, e.g.*, Lynn Stout, *Are Takeover Premiums Really Premiums?: Market Price, Fair Value, and Corporate Law*, 99 YALE L.J. 1235 (1990). This suggests that consumer products, because they vary on many more dimensions than do corporate stocks, may be even less substitutable. *See id.* at 1243 & n.42.

each manufacturer differentiates its product or brand of product from that of other manufacturers: "Each seller tries to make its product a little different, by altering the physical makeup of the product, the services it offers, and other such variables. Other differences . . . are based ou brand name, image-making, advertising claims, and so forth."[118] Manufacturers can, through market research, collect much the same data concerning consumers' risk characteristics that first-party insurers collect through insurance applications. Therefore, manufacturers can with at least some success segregate consumers by income, age, gender, taste, etc.,[119] such that a reasonably homogeneous group of consumers uses each distinct product.[120]

A glance down the cookie aisle of typical American grocery store will reveal the lengths to which product manufacturers are willing to go to appeal to the particularized tastes of relatively narrow consumer groups.[121] One finds everything from the relatively sophisticated and expensive Pepperidge Farm Distinctive Mint Milanos to the inexpensive, generic ginger snaps. Between those extremes, there are countless brands and varieties, each of which seems to be manufactured and packaged with a relatively narrow consumer group in mind. By brand, Sunshine Cookies seem to be relatively low-end, while Keebler Cookies seem to be more toward the high-end. And each brand offers many varieties. Nabisco, for example, offers an array of cookie alternatives from Fig Newtons to Animal Crackers to Oreos.[122] Beyond all this, many more brands and types of prepackaged cookies are available outside grocery

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118 EDWIN MANSFIELD, MICROECONOMICS 312 (4th ed. 1982). For a recent review of the literature on the motivations for and the effects of product differentiation, see STEPHEN MARTIN, INDUSTRIAL ECONOMICS 288-307 (1988).

119 Marketers also "target" segments of the population according to psychographics, which classifies consumers by attitudes and values. Zachary Schiller, *Stalking the New Consumer*, BUS. WK. 54, 57 (Aug. 28, 1989).

120 Poor consumers, for instance, often purchase products in distinct markets. *See generally* FEDERAL TRADE COMMISSION, ECONOMIC REPORT ON INSTALLMENT CREDIT AND RETAIL SALES OF DISTRICT OF COLUMBIA RETAILERS (1968); Kunreuther, *Why the Poor May Pay More for Food: Theoretical and Empirical Evidence*, 46 J. BUS. 368, 375-78 (1973). For a recent discussion of how consumer-product manufacturers market their products to narrowly defined consumer groups, see *id.* *See also* DOUGLAS F. GREER, INDUSTRIAL ORGANIZATION AND PUBLIC POLICY 36-74 (2d ed. 1984); S. MARTIN, *supra* note 118; F.M. SCHERER, INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE 375-405 (2d ed. 1980).

For an example of how gun manufacturers, under enterprise liability, would differentiate their products to narrow consumer risk pools, see Comment, *supra* note 62, at 376-78. *See also* Landes & Posner, *supra* note 23, at 563 (conceding that "[i]f . . . it were possible to identify a class of guns used mainly for illegal purposes (perhaps 'Saturday night specials'), a stronger case could be made for [enterprise] liability as a method of trying to price them off the market").

121 This practice is aptly referred to by those in the industry as "micro-marketing."

122 Indeed, there are now four types of Oreos: Standard Oreos, Fudge Covered

stores at gourmet shops, health-food stores, imported-food stores, and the like. Those stores themselves tend to appeal to fairly homogeneous groups of consumers.

In addition to offering diverse selections of products and packages, manufacturers engage in other fine-tuned advertising and marketing techniques. To reach particular audiences, for instance, manufacturers advertise at a particular time of day on a health-related Cable channel or in a special section of a professional wrestling magazine. Manufacturers also sponsor sporting events, and other events—such as the Annual Pepto-Bismol Chili-Cooking Contest—which you would think would attract a relatively narrow subset of consumers.[123] Manufacturers now even advertise on such places as the walls of high-school lunch rooms and the blood-pressure monitors in pharmacies.[124] Moreover, they employ sophisticated direct marketing techniques such as those offered through Computerized Marketing Technologies Inc. ("CMT"):

> [CMT] sends out millions of detailed consumer questionnaires. As a result CMT now has data on the product usage, hobbies, travel habits, and other facts for 25 million households. It mails coded coupons three times a year to 15 million households and can deliver different coupons to different consumers.[125]

Notice that through the use of rebates or coupons manufacturers not only can target very narrow subsets of consumers but also can offer larger or smaller discounts to different consumers according to those consumers' individual-risk characteristics.[126]

Oreos, Oreo Double Stuffs, and Oreo Big Stuffs—each of wbich is available in at least two package sizes.

123 Schiller, *supra* note 119, at 56.

124 *Id.* at 54.

125 *Id.* at 57-58.

126 *See* Steven P. Croley, Less-Than-Strict Liability for Contraceptive Manufacturers?: Scrutinizing Comment K (unpublished manuscript on file with authors) (contraceptive manufacturers can create reasonably narrow consumer risk pools).

It might be argued that, although first-party insurers lack a comparative advantage for segregating according to age, income, gender, and the like, they are better able than manufacturers to segregate according to highly specific individual-risk characteristics. For example, insurers might conduct detailed physical and psychological examinations to assess an insured's chances of being injured in an accident. In fact, first-party insurers rarely engage in such detailed analyses. Perhaps that is true because these sorts of examinations represent costly transaction-specific investments. *See generally* Oliver E. Williamson, *Transaction Cost Economics: The Governance of Contractual Relations*, 22 J.L. & ECON. 233 (1979). Once an insurer has made these investments, the insured has an incentive to behave opportunistically by threatening to find insurance elsewhere, unless the insurer lowers its rate to some level below what would be necessary for the insurer to recoup its sunk investments. Because first-party insurance contracts are short-term, insureds have the opportunity to defect, leaving insurers unable to obtain sufficient returns to justify making the asset-specific investments in the first place. *Ex ante*, therefore, first-party insurers have less than optimal incentives to make such investments.

Another way in which manufacturers can segregate consumer risk pools is through the use of warnings. By alerting those consumers especially susceptible to the product's risks, a manufacturer may be able to discourage high-risk consumers from using their product. Consider, for example, the warnings to pregnant women regarding the particular dangers posed by their smoking.[127]

Finally, it is worth observing now, in anticipation of the upcoming Sections on deterrence, that manufacturers not only can segregate consumers according to risk but also can lower the risk facing consumers by improving their products' safety.[128] To enhance safety, manufacturers could, for instance, alter their manufacturing processes or the designs of their products.[129] Because manufacturers would be liable for all the costs under an enterprise liability regime, they would have optimal incentives to ascertain the costs and benefits of alternative designs.[130]

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127 Of course, warnings will work only to the extent that consumers are not fully compensated for losses. *See infra* Section IV(B)(2)(a). For a discussion of warnings, see S. SHAVELL, *supra* note 10, at 60-61; Alan Schwartz, *Views on Addiction*, 75 VA. L. REV. 509 (1989).

128 *Cf. supra* note 112.

129 [M]ost instances of product-related harms are those in which precaution lies unilaterally with the manufacturer. It is he who is in control of the design of the product, of the manufacturing process, and it is he who is most likely to be aware of any special dangers that the product presents and, therefore, can most efficiently convey information about these dangers through warnings.

R. COOTER & T. ULEN, *supra* note 27, at 435. "[T]he manufacturer has virtually exclusive access to much of the information necessary for effective control of dangers facing product consumers." David G. Owen, *Punitive Damages in Products Liability Litigation*, 74 MICH. L. REV. 1258, 1258 (1976); *see also* R. POSNER, *supra* note 8, at 166; Sugarman, *supra* note 8, at 580-81; Note, *supra* note 63, at 1061.

It could be argued that manufacturers may not invest optimally in researching and developing safety features because of the fear that other manufacturers will free-ride on the information generated by such investments. *See supra* note 88. This would place the manufacturer who made the initial safety investment at a competitive disadvantage. The free-rider problem, however, likely poses less of a problem in the manufacturing context than it does in the first-party insurance context. Manufacturers will probably find it quite costly to distinguish which of a given competitor's desigus are safety features and to determine how costly and effective those features in fact are. Insurers, on the other hand, are able to capture all the relevant information merely by examining their competitors' applications, policies and premium differentials. This task is easily accomplished especially given the "very strong state regulatory pressure to standardize insurance policies." George L. Priest, *The Antitrust Suits and the Public Understanding of Insurance*, 63 TUL. L. REV. 999, 1025 (1989). A more important factor is that manufacturers' designs, unlike insurance applications, are readily protectable through patent, trademark, and trade secret laws, which arguably were developed to protect against just this sort of free-riding. *See generally* Edward W. Kitch, *The Nature and Function of the Patent System*, 20 J.L. & ECON. 265 (1977).

130 Calabresi, *supra* note 32, at 839.

C. Summary

We have argued that, contrary to the received wisdom, first-party insurers fail, for several reasons, to segregate consumers efficiently according to consumption choices. Additionally we have argued further that first-party insurance is probably less effective, and enterprise liability is probably more effective, at segregating according to individual-risk characteristics than has previously been supposed. Whether enterprise liability *qua* insurance or first-party insurance actually creates narrower risk pools (with regard to individual-risk characteristics) is an empirical question that is beyond the scope of this Article. Indeed, many of the relevant factors do not, at least for the time being, lend themselves to empirical evaluation.[131] The overall efficiency of enterprise liability *qua* insurance is currently indeterminate; we have argued simply that it is plausible (especially given the failure of first-party insurers to adjust premiums according to consumption choices) that enterprise liability will be superior in this regard. Our argument should cast significant doubt on the unsupported assumption now being made by legal economists that first-party insurance is a more efficient means of insuring consumers against the risk of product accidents than insurance provided through enterprise liability. There is much at stake, however, in the choice between liability rules beyond just the insurance considerations focused on thus far. There are also the deterrence implications of the first-party insurance externality to consider, and to those implications we now turn.

II
PRODUCT ACCIDENT DETERRENCE

This Section first expounds the deterrence goal of a products liability regime. It then describes two causes (in addition to those described in Section I) and examines the deterrence implications of the first-party insurance exteruality. This Section next demonstrates that, because of the failure of first-party insurance to classify according to consumption choices, consumers externalize[132] the costs of product accidents to first-party insurers. Finally, this Section shows that, because first-party insurers fail to classify according to consumption choices, consumers and manufacturers will (in the absence of an efficient liability rule) externalize the costs of product accidents. Sections III and IV then attempt to determine the efficient liability rule.[133]

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131 *See, e.g., supra* note 114.

132 The term "externalize" is defined at note 138, *infra*.

133 Section I shows that one cannot say which of the alternative products liability rules is superior with regard to insurance consequences. Sections II and III exclude

A. The Deterrence Goal

The deterrence goal of products liability law is to minimize the costs of product accidents, including the costs of preventing accidents.[134] Consistent with standard models in the economics of tort law, we assume that the costs of product accidents are a function of three variables:[135] the care taken by producers in manufacturing a product ("manufacturer care levels"); the care taken by consumers in using a product ("consumer care levels"); and the quantity of a product purchased and sold ("activity levels").[136] These variables

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insurance considerations from their analyses and focus on the comparative deterrence consequences of the alternative rules.

134 Minimizing the costs of accidents has become well accepted among law-and-economics scholars as the central goal of tort law. Calabresi, for example, states "I take it as axiomatic that the principal function of accident law is to reduce the sum of the costs of accidents and the costs of avoiding accidents." G. CALABRESI, *supra* note 1, at 26; *see also* John B. Attanasio, *The Principle of Aggregate Autonomy and the Calabresian Approach to Products Liability*, 74 VA. L. REV. 677 (1988) (arguing that Dean Calabresi's cost minimization goal should be the central policy goal of products liability).

135 Landes & Posner, *supra* note 23, at 538. Most law-and-economics commentators agree that a liability rule has two principal deterrence effects: the "activity level" effect and the "care level" effect. Professor Priest is the one exception. *See supra* note 20. These two effects correspond to the "standard distinction . . . between taking more care while engaged in a dangerous activity and reducing the amount of activity to lessen the probability of an accident." Landes & Posner, *supra* note 23, at 538. The activity level effect is the change in the costs of accidents resulting from a change in the frequency with which the injurer engages in the risky activity, holding care level constant. The care level effect is the change in the costs of accidents resulting from a change in the amount of care taken by the injurer, holding activity level constant. *See generally* S. SHAVELL, *supra* note 10, at 5-32 (describing activity levels and care levels as two relevant variables in comparing liability rules); Landes & Posner, *supra* note 23, at 538 (same); Shavell, *supra* note 23 (same). For earlier discussions of the distinction between activity- and care-level effects, see William M. Landes & Richard A. Posner, *The Positive Economic Theory of Tort Law*, 15 GA. L. REV. 851, 871-77, 904-08 (1981); Polinsky, *supra* note 29, at 364-66 (formally analyzing effects of manufacturer activity levels on costs of accidents); *see also* G. CALABRESI, *supra* note 1, at 73 (arguing that deterrence has two effects: "it creates incentives to engage in safer activities" (the activity level effect); and "it encourages us to make activities safer" (the care level effect).

136 This Article uses one term, "activity levels," to describe both the quantity of a product consumers purchase and the quantity of a product manufacturers sell. *Cf.* Landes & Posner, *supra* note 23, 549-50 (describing why "activity level" may have special meaning in products liability context). By defining activity levels in this way, we implicitly assume that products are either fully consumed after only one use or are consumed in direct proportion to a consumer's level of use. To the extent that a product's useful life is not a function of the consumer's level of use, however, there arises an alternative meaning for the term "activity level," namely, the frequency with which a product is used over the product's useful life ("frequency level"). A consumer can purchase one compact disc, for example, and play the disk from one to 5000 times without reducing the disk's useful life. To the extent that activity level can diverge from frequency level in this way, the optimization of one does not necessarily imply the optimization of the other. This divergencc causes what we call the "durable good problem." As discussed below, frequency level can be understood as one component of consumer care level. *See infra* notes 173-74 and accompanying text; *cf.* Landes & Posner, *supra* note 23, at 538 (defining consumer care to include "intensity of use").

will be optimized[137] (*i.e.*, the costs of product accidents will be minimized) only when both manufacturers and consumers internalize[138] the total accident costs that a product causes.[139] Only then will both manufacturers and consumers have incentive to invest in lowering accident costs—by increasing care levels and/or decreasing activity levels—up to the point at which the marginal costs to society of such investments equal the marginal benefits.[140] At that point, all cost-justified investments will have been made, and the costs of accidents will have been minimized.[141]

B. A "No Liability" Regime Assuming No First-Party Insurance

It is well accepted that any products liability rule will be efficient if information and transaction costs are zero.[142] Even in the absence

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137 A factor is "optimized" when it cannot be adjusted to lower the total cost of product accidents. Once manufacturer care is optimized, an additional one dollar investment in manufacturer care will yield less than a one dollar reduction in expected accident costs. The same is true of optimal consumer care. If activity levels are optimal, the benefit from the last unit of the product consumed (produced) will equal the total costs of that unit, including the expected accident costs. *See* P. DANZON, *supra* note 97, at 10; W. LANDES & R. POSNER, *supra* note 10, at 58-62; *see also* Brown, *supra* note 23, at 324-27. When care levels and activity levels are all optimized, the sum of the costs of care, the costs of reduced activity, and the costs of accidents will be minimized. Minimizing this sum is the deterrence goal of tort law. *See supra* note 134.

138 To internalize costs is to include them fully in the decision calculus. To externalize costs, on the other hand, is to exclude them from the decision calculus. *See* JESSE DUKEMINIER & JAMES E. KRIER, PROPERTY 38-43 (2d ed. 1988); R. LIPSEY & P. STEINER, *supra* note 47, at 442-43; R. POSNER, *supra* note 8, at 62. When we speak of consumers externalizing the costs of product accidents through first-party insurance, we do not mean to imply that consumers are not all required to pay more for their insurance as a result of the externality. To be sure, insurance premiums rise to reflect the externality, but the increase is general and unrelated to any specific action taken by any specific insured. Thus it affects only an individual's decision to insure or not to insure. *See supra* note 44. Once insured, an individual's consumption choices will not be affected by premiums. *Cf.* Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243 (1968) (providing classic statement of this problem); MICHAEL TAYLOR, COMMUNITY, ANARCHY AND LIBERTY 121 (1982) ("[A]ny group which distributes to its members benefits which are independent of their contributions (or largely so) is liable to be taken advantage of by free riders.").

139 For a more complete discussion of this point, see generally R. POSNER, *supra* note 8, at 147-52; *see also* S. SHAVELL, *supra* note 10, at 51, 127.

140 A rational actor, if she internalizes the full costs and benefits of her activities, will, to maximize her utility, engage in any activity until the marginal costs equal the marginal benefits. Until that point is reached, she can always attain a higher level of utility by adjusting her level of activity. R. LIPSEY & P. STEINER, *supra* note 47, at 141-43; E. MANSFIELD, *supra* note 118, at 51-56; P. SAMUELSON & W. NORDHAUS, *supra* note 88, at 414-15; Ronald H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1 (1960).

141 Landes & Posner, *supra* note 23, at 539 ("[W]e want output, injurer care, and victim care to be carried to the point where the last dollar in care (or foregone output) yields a benefit of a dollar in reduced accident costs.").

142 This claim is widely known as the "efficiency prediction," presumably because whatever liability rule is adopted, efficiency obtains. *See generally* Coase, *supra* note 140

of a liability rule, the costs of accidents will be minimized because manufacturers and consumers will contract for optimal safety.[143] Furthermore, if contracting costs are positive,[144] a products liability rule will still be unnecessary to minimize the costs of accidents: As long as manufacturers and consumers are perfectly informed, the price mechanism (driven by consumers' *consumption choices*) will generate the optimal levels of care and activity.

To understand how the price mechanism can generate optimal deterrence, notice that the total price of any product equals the sum of two elements: the product's market (or nominal) price plus the expected accident cost to be caused by the product. Assume initially that consumers are not insured against their expected accident costs. Consumers will, under those circumstances, internalize a product's total price and will, being rational, prefer to pay the lowest possible total price. To lower the total price, consumers will make all cost-justified investments in care. Thus consumer care levels will be optimized.[145]

Manufacturers competing for consumers will help lower the total price of their products by making all cost-justified investments in their products' safety. Thus manufacturer care levels will be optimized. Moreover, since consumers internalize the total price of consuming each additional unit of a product, they will consume until the marginal cost of the product (*i.e.*, the price of one unit of the product) equals the marginal benefit. Thus activity levels will be optimized.[146]

(demonstrating that parties would, under these assumptions, bargain to mutually beneficial agreements, regardless of liability rule).

143 S. SHAVELL, *supra* note 10, at 61; Landes & Posner, *supra* note 23, at 539-40; Schwartz, *supra* note 26, at 367.

144 *See generally* W. LANDES & R. POSNER, *supra* note 10, at 280-84 (discussing high cost of contracting); OLIVER WILLIAMSON, THE ECONOMIC INSTITUTIONS OF CAPITALISM 70 (1985). *See also* Steven Shavell, *Damage Measures for Breach of Contract*, 11 BELL J. ECON. 466, 468 (1980) ("[B]ecause of the costs involved in enumerating and bargaining over contractual obligations under the full range of relevant contingencies, it is normally impractical to make contracts which approach completeness"); *cf.* Ian MacNeil, *Contracts: Adjustment of Long-Term Economic Relations Under Classical, Neoclassical, and Relational Contract Law*, 72 NW. U.L. REV. 354 (1978) (long-term, complex contracts become dysfunctional if too rigid). Contracting costs are one form of transaction costs. We are assuming that all other transaction costs (*e.g.*, search costs) are zero.

145 By definition, cost-justified investments in care lower the total price of a product. Care levels will be optimized when no further cost-justified investments in care can be made.

146 *See supra* note 140; *see also* GEORGE J. STIGLER, THE THEORY OF PRICE 70-72 (1987).

C. A "No Liability" Regime Assuming Perfect First-Party Insurance

This Section has assumed thus far that consumers are uninsured against the risks of product accidents. How would it affect the deterrence analysis to assume, more realistically, that consumers are covered for these risks through first-party mechanisms?[147]

Assume initially that, although contracting costs exist, first-party insurers have free access to product risk information and that they are therefore able costlessly to segregate risk pools. Under these assumptions, insurers will perfectly adjust premiums according to every consumption choice of each insured.[148] Consumers will then be induced through first-party insurance premiums to internalize the expected accident costs associated with each of their consumption choices. Optimal deterrence will obtain.

Note that by adjusting premiums according to consumption choices (*i.e.*, what products an individual consumes, how many of those products she consumes, and how much care she takes when consuming them) the insurer sees to it that all elements of deterrence (*i.e.*, manufacturer care, activity levels, and consumer care, respectively) are optimized. For any product, each consumer will internalize the product's total price by paying to the manufacturer the product's market price and by paying to the insurer (in the form of an insurance premium) the expected accident cost resulting from the consumer's consumption choices.[149] As before, consumers internalizing a product's total price will prefer to pay the lowest possible total price. Again, consumers will make all cost-justified investments in consumer care. Thus consumer care levels will be optimized. Manufacturers, competing for consumers, will help lower the total price of their products by making all cost-justified investments in their products' safety. Thus manufacturer care levels will be optimized. Just as they did in the absence of insurance, consumers—now through both the market price and insurance premiums—will internalize the total costs of consuming each additional unit of a product. Consequently, they will consume until the marginal cost of the product equals the marginal benefit. Thus activity levels will be optimized. In sum, perfect first-party insurance

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147 Again, it is assumed that all consumers are fully insured through first-party mechanisms for the risks of product accidents. *See supra* note 23. We relax this assumption somewhat at *infra* note 179.

148 *See supra* notes 39-42 and accompanying text.

149 *See* S. SHAVELL, *supra* note 10, at 195. *See generally* G. CALABRESI, *supra* note 1, at 48-49 (discussing perfect "general deterrence" that would result from perfect individualization of risk).

against product risks would facilitate, not impede, optimal deterrence.

D. A "No Liability" Regime Given the First-Party Insurance Externality

To demonstrate that first-party insurance could theoretically facilitate optimal deterrence, Part C assumed that first-party insurers perfectly adjusted premiums according to consumers' consumption choices. Such an assumption, however, is unjustifiable. Section I(B)(2)(a) described several reasons for why first-party insurers fail to classify efficiently according to insureds' consumption choices.[150] This Section will describe two more.

1. *Additional Sources of the First-Party Insurance Externality*

a. Ex Post *Reaction of Manufacturers Weakens* Ex Ante *Incentives of Insurers to Classify.*

Suppose ours were a no-liability regime (or any regime in which the products liability standard places less than sufficient incentives on manufacturers to optimize manufacturer care). Assuming that this regime were not plagued by any of the problems described in Section 1, one might think that first-party insurers would fill the deterrence gap as described in Section II(C). A problem arises, however, inasmuch as manufacturers adjust their care levels in response to the insurers' classifications. Although such adjustments are, in one sense, desirable from a deterrence perspective, they nevertheless reduce the insurers' incentives to classify according to product risks in the first place.

To see this point, consider the following example. Suppose there are just two types of lawnmowers: Type A and Type B. Assume that the mowers are identical but for the level of care used in manufacturing them. Type A mowers are efficiently safe, whereas Type B mowers are inefficiently unsafe.[151] Assume also that, if the two mowers were manufactured with the same care, they would be perfect substitutes for each other. Under a no-liability regime, market prices will not reflect expected accident costs; hence, B mowers will have a lower nominal price because the B manufacturers will have lower costs. Assume finally that consumers are covered by first-party insurance against the risks of lawnmower accidents. Now if first-party insurers adjust insureds' premiums according to their consumption choices, Type A mowers will be less expensive overall

150 *See supra* Section I(B)(2).

151 The Type B manufacturer, in other words, does not make all cost-justified investments in manufacturer care, whereas the Type A manufacturer does.

(market price plus insurance premium) and Type B manufacturers will have appropriate incentives to make their mowers efficiently safe. So far, so good; first-party insurers, by classifying insureds according to consumption choices, are creating incentives that optimize manufacturer care.

The problem, however, is that first-party insurers themselves are left with little *ex ante* incentive to measure and classify according to the expected accident costs of the lawnmowers. Insurers would make the necessary investments only when doing so would give them a competitive advantage.[152] But insurers cannot enjoy the full benefits of segregating consumers according to their choice of lawnmowers because as soon as insurers adjust premiums, Type B manufacturers have an incentive to make their product efficiently safe. As B mowers become safer, any competitive advantage insurers might have gained from investments in classification disappear. *Ex ante*, then, first-party insurers have less than optimal incentives to invest in this information.[153]

b. *Insurers Must Share with Insureds the Gains of Classifying ("Inducement Costs").*

Another factor undermines first-party insurers' incentives to invest in discovering efficiently safe consumption choices. To gain the full benefits of such investments, insurers, once they have discovered the optimal consumption choices, will have to find a way to induce insureds to make them. But to induce insureds to make the optimal choices, insurers must pass on to insureds—through premium discounts—some portion of the benefits of such discoveries (this Article refers to the transfer of information from insurer to insured as "inducement costs").

To understand this point, contrast the way an insurer could profit from its discovery to the way a manufacturer under an enterprise liability regime could profit from, say, a patentable invention that efficiently lowered its liability costs. Because the manufacturer's liability costs are reduced, it can maintain its price and thereby enjoy a profit equal to the reduction in cost per unit sold. The manufacturer's consumers would not share in the gains of the invention. Insurers, however, are in a different boat. If an insurer discovers a way for its insureds to cost-justifiably reduce their accident costs (*e.g.*, they discover that if a pair of $25 goggles are warn by insureds who use Type A lawnmowers, the expected accident costs of those insureds can be reduced by $50, a net gain of $25),

152 *See supra* note 87.

153 This is another case of the nonappropriability problem.

the insurer has to hand over some or all of those gains to the insureds. Otherwise, the insureds will have no incentive to take the liability-reducing action. In this example, it is not clear exactly how much of the $50 the insurer would have to offer to the insured before the insured would adjust her behavior and begin wearing the goggles. But it is clear that the insurer would need to begin the offers at some amount greater than the $25. Because the potential gain requires the insured's cooperation, insurers and insureds will, in effect, bargain over how the $25 in net gains should be split between them. Thus insurers must share the gains from their discovery with their insureds (by reducing premiums) if they hope to receive any portion of those gains for themselves. Because of these inducement costs, first-party insurers *ex ante* have suboptimal incentives to encourage their insureds to adopt efficient practices.[154]

2. *The Adverse Deterrence Implications of the First-Party Insurance Externality*

For those reasons, in addition to the reasons described in Section 1, insurance premiums will not promote efficient accident-cost reduction because premiums remain constant regardless of the consumption choices of each insured.[155] Neither the market price of products nor first-party insurance premiums will force consumers to internalize the expected accident costs associated with their consumption choices. Therefore, consumers will not internalize the to-

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154 *See* Henry Hansmann, *The Organization of Insurance Companies: Mutual versus Stock*, 1 J.L. ECON. & ORG. 125, 147-48 (1985); *cf.* Schwartz, *supra* note 79, at 357 ("[T]he incentives of the insured to accept [the insurer's safety] recommendations are unclear, since its premium remains constant even if it implements the insurer's . . . recommendations.").

155 Moreover, the classification goals of insurers, when they do classify, are not necessarily coextensive with the social goals of deterrence. Consider the classification variable sometimes used by health insurers: cigarette smoking. *See supra* notes 72-81 and accompanying text. Since insurers are concerned with the correlational purpose of classification, they may over-deter cigarette smoking. That is, by increasing smokers' premiums, insurers raise the total price of cigarettes to reflect not only their inherent risks but also their correlated risks. Social deterrence goals, however, are concerned with causation, not correlation. Thus, to the extent correlation does not imply causation, insurance classifications over-deter. Too few cigarettes will be smoked, while too many other unsafe products (*e.g.*, deep-fried chicken) will be consumed. This deterrence problem results from the failure of insurers to classify solely on the basis of causation. The problem is mitigated by a liability rule, such as enterprise liability, that places costs on those products that cause them. The problem remains, however, insofar as the liability system is incapable of determining causation. *See* Viscusi, *supra* note 79, at 69-70, 73-74 (discussing difficulties courts face in determining cause of certain types of injuries). *See generally* Glen O. Robinson, *Probabilistic Causation and Compensation for Tortious Risk*, 14 J. LEGAL STUD. 779 (1985) (analyzing problems of assigning liability and calculating damages based on probabilistic information); David Rosenberg, *The Causal Connection in Mass Exposure Cases: A "Public Law" Vision of the Tort System*, 97 HARV. L. REV. 851 (1984) (same).

tal price of products.[156]

The ability of consumers to externalize the costs of product ac-

156 One might argue that, if it is true that manufacturers—for any or all of the reasons described—can provide more efficient product-risk insurance than first-party insurers can, then first-party insurers should recoguize their comparative disadvantage and should, induced by market forces, adjust accordingly. First-party insurers should, the argument goes, cease providing insurance against any product risks and should reduce their premiums accordingly, with the expectation that manufacturers would be induced to step in and fill the insurance gap. For several reasons, however, insurers would not adopt this strategy.

First and most obviously, insurers would not follow this strategy because doing so would require them to make the same research investments that this Article bas already argued they are, because of market failures, unwilling to make. *See supra* text accompanying notes 82-94, note 126, and Section II(D)(1). Without such information, insurers would not know how much to discount their premiums.

Second, even assuming that insurers somehow knew how much to reduce their premiums, they would adopt this strategy only if all or most insurers were able to cooperate in the decision such that enough consumers would demand manufacturer-provided product-risk insurance to induce manufacturers to supply it. Such an outcome seems highly unlikely given the number of participants in, and the relative competitiveness of, the first-party insurance industry. *See* P. FELDSTEIN, *supra* note 46, at 166; Priest, *supra* note 20, at 37; Winter, *supra* note 50, at 463-64. Absent such collusion, no single insurance company will have incentive to exclude product-risks (or, for that matter, to offer premium discounts to those who buy products with insurance), because they will take the market as given. From the individual insurer's perspective, there will be nothing to gain by cutting premiums in this way. Consumers will not want to forego their products liability insurance from first-party providers because they will not be able to get insurance from manufacturers. Manufacturers will not provide insurance to these few consumers, because all other consumers will be unwilling to pay the added price given that they are already insured. *Cf.* Schwartz, *supra* note 26, at 371 (explaining that firms are typically "responsive to the preferences of consumer groups, rather than the preferences of every consumer"). Thus, no insurer would adopt such a strategy because no insurer, acting alone, would anticipate that its decision not to insure product risks would bave any effect on manufacturers' decisions to provide product-risk insurance. Put more technically, the current regime—under which first-party insurers cover product risks, but manufacturers, unless through tort law, do not—though inefficient, is a "Nash equilibrium." John F. Nash, Jr., *Equilibrium Points in N-Person Games*, 36 PROC. NAT'L ACAD. SCI. 48 (1950). For a simple explication of a "Nash Equilibrium," see P. SAMUELSON & W. NORDHAUS, *supra* note 88, at 630-31.

Moreover, even if insurers could collude to shift the equilibrium such that only manufacturers provided product-risk insurance, why would they? That society would be better off overall does not imply that first-party insurers would be. First-party insurers would lose premiums and profits were they collectively to unload product risks onto product manufacturers. The inefficiencies of the current equilibrium (like the inefficiencies of much special-interest regulation) are not likely to be eagerly corrected by those who currently control and benefit from them.

Another reason insurers might not offer to exclude coverage for product risks is that doing so would require insurers to investigate every claim in order to determine whether the accident was product-caused. This would be an expensive process for insurers. Moreover, by adopting such a practice, insurers might damage their "good hands" reputations when they fail to pay claims in hard-to-call cases. O'Mahoney Interview, *supra* note 72; *see also* ROBERT C. ELLICKSON, ORDER WITHOUT LAW: OF COASE, NORMS, AND SHASTA COUNTY (forthcoming 1991) (stating that insurers in Shasta County, California usually prefer to settle claims rather than to invoke the law against claimants, especially for small claims); H. LAWRENCE ROSS, SETTLED OUT OF COURT: THE SOCIAL PROCESS OF INSURANCE CLAIMS ADJUSTMENTS 233-42 (1970) (describing insurer's reluc-

cidents significantly undermines deterrence goals. First, consumer care levels will be suboptimal. Consumers will be unwilling to invest in consumer care because they will be compensated by first-party insurers for their injuries; taking care would impose upon consumers a cost with no offsetting benefit. Consumers, therefore, will have no incentive to take care.[157] For the same reasons, consumers will be unwilling to pay any additional price to compensate manufacturers for investments in care. Competitive manufacturers will refrain from making cost-justified investments in care. Thus manufacturer care levels will be suboptimal.[158] Finally, because consumers externalize accident costs, they will consume beyond the point at which the marginal costs of the product equal the marginal benefits. Activity levels will therefore be too high. The failure of first-party insurers to classify according to insureds' consumption choices, then, ensures that none of the deterrence objectives will be met: activity levels will be too high, care levels too low.

Section III demonstrates that, notwithstanding the presence of imperfect first-party insurance, an enterprise liability regime, but not a negligence regime, would optimize two of the three deterrence objectives: activity levels and manufacturer care levels. Section III then explains why the third deterrence objective, consumer care levels, cannot be optimized under either liability regime. Finally, Section III shows that a defense of contributory negligence, given the insurance externality, is inefficient and that an enterprise liability rule should therefore not include such a defense.

III
Optimizing Deterrence: Choosing an Efficient Products Liability Regime, Assuming Information is Perfect and All Losses Are Pecuniary

A. Enterprise Liability versus Negligence

Assume for the moment that all product accidents are "initially preventable" (preventable at least cost by manufacturers).[159] Under

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tance to withhold payments even when, by the terms of insurance contract, it was entitled to).

157 The problem of consumer care levels is equivalent to the moral hazard problem described above. *See supra* Section I(A)(1).

158 For a legendary example of this phenomenon, see Calabresi, *supra* note 32, at 838 n.20 (consumers unwilling to pay for automobile safety features because they had insurance).

159 This implies that whenever manufacturers make all cost-justified investments in care, all product accidents will be prevented; that is, accident costs will equal zero. It follows that, under this assumption, optimal consumer care levels will equal zero. This simplifying assumption is relaxed below. *See infra* note 166 and accompanying text.

an enterprise liability regime, manufacturers are required by law to pay for the costs of all accidents caused by their products. Therefore, to be competitive, manufacturers will minimize the total price of their products by making all cost-justified investments in manufacturer care. Thus manufacturer care levels will be optimized. The costs of these investments will be reflected in a product's market price so that its market price will equal its total price. That is, a product's market price will include the total unit cost to the manufacturer of producing the product, including the cost of all cost-justified investments in manufacturer care. Because manufacturers will invest optimally in care, expected accident costs will equal zero. Hence, consumers—through the market price—will internalize the total price of consuming an additional unit of the product and will consume until the marginal cost of the product equals the marginal benefit. Thus, activity levels will be optimized.[160]

A negligence regime[161] replicates this result only if one continues to assume that all accidents are initially preventable and that courts perfectly ascertain and enforce optimal manufacturer care. Under these circumstances, just as under an enterprise liability regime, manufacturers will be required by law to pay the costs of all accidents caused by their products. This follows because all accidents, by assumption, result from manufacturer negligence (by assumption, all are initially preventable). Therefore, for the same reasons activity levels and mannfacturer care levels were optimized under enterprise liability, they would be optimized under negligence.[162] However, if we relax our two assumptions, enterprise liability becomes a more efficient means of obtaining optimal deterrence than negligence.

First, courts are *not* able to ascertain and enforce optimal manufacturer care. Indeed, it is generally accepted that, as compared to a given manufacturer, courts are ill-suited to engage in the *ex post* cost-benefit analysis required to determine what precautionary measures a manufacturer should have taken *ex ante* with regard to a given product.[163] To make such a determination, a court would first have

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160 S. SHAVELL, *supra* note 10, at 50-56; R. POSNER, *supra* note 8, at 161-64, 166.

161 Under a negligence regime, manufacturers are liable only for initially preventable product accidents. It is widely accepted that courts do not or cannot consider activity levels in their negligence analyses. *See, e.g.*, Shavell, *supra* note 23, at 25; Landes & Posner, *supra* note 23, at 546; Priest, *supra* note 17, at 1537 n.90; Comment, *A Time-Dependent Model of Products Liability*, 53 U. CHI. L. REV. 209, 218-20 (authored by Peter V. Letsou).

162 *See supra* notes 159-60 and accompanying text.

163 *I.e.*, what investments in manufacturer care were available and which of those were cost-justified. S. SHAVELL, *supra* note 10, at 56; *see* G. EADS & P. REUTER, *supra* note 113, at 17 ("risk-utility balancing test has . . . forced the courts into an area that they are not equipped to handle"); James A. Henderson, Jr., *Judicial Review of Manufacturers' Con-*

to calculate the relevant product's supply schedule. This alone would be a formidable undertaking, as the court would have to estimate both the production costs and the expected accident costs associated with each alternative product design. Second, the court would have to calculate the demand schedule for each design by estimating how much of the product consumers would purchase at every price. Finally, the court would have to determine, based on these calculations, which product design generates the largest consumer surplus. Such determinations seem beyond the limits of judicial competence.[164] A negligence regime, then, seems an "unworkable" standard of liability in products cases.[165] Enterprise liability, on the other hand, places all product accident costs on the manufacturer, the party best able to obtain, evaluate, and implement the relevant information regarding a product's safety. Enterprise liability forces manufacturers to internalize accident costs and thereby leads manufacturers to make all cost-justified investments in care.

The second general reason why a negligence rule does not optimize deterrence is that not all accidents are initially preventable. Many accidents are either "unpreventable" (unable to be prevented at a cost less than the expected accident cost)[166] or "residually preventable" (preventable at least cost by consumers). Since, by defini-

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scious Design Choices: The Limits of Adjudication, 73 COLUM. L. REV. 1531 (1973) (courts not suited to task of providing specific product-safety guidelines); Owen, *supra* note 129; Schwartz, *supra* note 26, at 384-88 (describing the inability of courts to apply negligence risk/benefit standard to manufacturers); *see also* Marcel Kahan, *Causation and Incentives to Take Care Under the Negligence Rule*, 18 J. LEGAL STUD. 427 (1989) (explaining that because of difficulties courts face in determining optimal level of injurer care, courts should hold manufacturers to higher level of care).

164 This description of what precisely a court must do to ascertain optimal manufacturer care paraphrases the insight articulated by Professor Schwartz. Schwartz, *supra* note 26, at 386-87. Schwartz points out that manufacturers, too, would have difficulty making these complicated calculations. However, as Schwartz would doubtless agree, manufacturers need not construct demand and supply curves; they simply strive to maximize profit by whatever means necessary, and the market generates the optimal product design and output. True, manufacturers will attempt to estimate both their expected costs—a task they are in a better position to perform than anyone else—and their revenues. But any manufacturer who fails to make the efficient choices will be competed out of the market. This is the virtue of internalizing costs on manufacturers. *See generally* W. Kip Viscusi, *Wading through the Muddle of Risk-Utility Analysis*, AM. U. L. REV. (1990) (explaining how "a competitive market will ensure that the product mix is optimal").

165 Schwartz, *supra* note 26, at 386. Schwartz prefers the term "risk/benefit test" to the term "negligence," which he refers to as having an "unstated assumption that safety expenditures made in connection with an activity do not affect the benefits consumers derive from the activity." *Id.* at 385. But, as Schwartz would concede, if the costs of lost consumer surplus are included in the definition of prevention costs—as is assumed in this Article—then negligence is still the relevant standard. It is just a matter of semantics.

166 The assumption is referred to at *supra* note 159.

tion, a negligence regime holds manufacturers liable only for initially preventable accidents,[167] a product's market price under a negligence regime would not reflect the costs of unpreventable and residually preventable accidents.

Nonetheless, if, as law-and-economics theorists have previously assumed,[168] consumers under a negligence regime were actually to bear the costs of unpreventable and residually preventable accidents, then activity levels would be optimized. In fact, however, under a negligence regime consumers externalize the costs of all residually preventable and unpreventable accidents. These costs are instead paid by first-party insurers.[169] The price consumers pay for any given product, therefore, will be less than the product's total price.[170] Accordingly, consumers will consume each product beyond the point at which the marginal total cost (including the costs of residually preventable and unpreventable accidents) equals the marginal benefit to the consumer. Thus activity levels will be too high.

Enterprise liability, on the other hand, requires consumers—even fully insured consumers—to internalize a product's total price. This is because, as stated above, under enterprise liability a manufacturer is required by law to pay the costs of all accidents caused by its product, including residually preventable and unpreventable accidents. Hence, consumers, through the market price, internalize the total price of consuming an additional unit of the product and will therefore consume until marginal cost equals marginal benefit.[171] Activity levels will thus be optimized.[172]

This Section has demonstrated that enterprise liability is superior to a negligence regime based on two deterrence objectives: activity levels and manufacturer care levels. This Section, however, has ignored the third deterrence objective: consumer care levels.[173] Neither of the two liability regimes, it turns out, is capable of optimizing consumer investments in care, because neither requires the

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167 *See supra* note 20.

168 *See, e.g.*, W. LANDES & R. POSNER, *supra* note 10, at 276 (discussing a caveat emptor regime).

169 *See supra* Section I.

170 Polinsky, *supra* note 29.

171 *But cf.* Guido Calabresi, *Some Thoughts on Risk Distribution and the Law of Torts*, 70 YALE L.J. 499, 503-14 (1961) (describing market conditions that might prevent price of product from reflecting accident costs, but concluding that "it is fair to say that cases where enterprise liability would enhance proper resource allocation greatly predominate").

172 *See supra* note 140.

173 This Section has also ignored the durable good problem adumbrated above. *See supra* note 136. The durable good problem can be thought of as a consumer care problem and the following analysis, which explicitly applies to consumer care, applies as well to the durable good problem.

consumer to internalize the costs of residually preventable accidents. Under negligence, first-party insurers will compensate consumers for those accidents; under enterprise liability, manufacturers will. As a result, consumers will be compensated under either regime, so that taking care imposes costs without providing offsetting benefits. Therefore, consumers under either liability rule will have no incentive to take care. The problem of suboptimal consumer care levels,[174] therefore, is insuperable. As Part B shows, even a defense of contributory negligence cannot solve the consumer care problem.

B. The Optimal Rule: Enterprise Liability Without a Contributory Negligence Defense

Some scholars have argued that enterprise liability in conjunction with the defense of contributory negligence[175] will optimize all deterrence objectives, including consumer care levels.[176] Assuming courts can accurately determine when a consumer has been contributorily negligent, and that consumers fully internalize losses imposed on them by courts, enterprise liability plus contributory negligence would indeed be the optimal products liability rule. Under such a rule, manufacturers would prevent initially preventable accidents and insure consumers against unpreventable accidents, and consumers would prevent residually preventable accidents. Scholars supporting such a regime, however, have failed to consider that consumers will still be insured by first-party insurers against these risks.[177] Therefore, even if found contributorily negligent by a court, consumers will be compensated by their insurers.[178] As a result, the consumer care problem will persist. That is, the use of contributory negligence does not alter the fact that first-party insurance allows consumers to externalize residually preventable accidents. Contributory negligence, then, serves little or no useful function because of the first-party insurance externality.[179]

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174 *I.e.*, the problem of moral hazard.

175 Under a regime of enterprise liability with a defense of contributory negligence, courts hold manufacturers liable for the costs of all accidents except those that are residually preventable.

176 *See* W. LANDES & R. POSNER, *supra* note 10, at 294, 300; S. SHAVELL, *supra* note 10, at 52-53; Landes & Posner, *supra* note 23, at 543; Schwartz, *supra* note 26, at 392.

177 First-party insurers compensate insureds for product-accident costs, even when consumers have been found contributorily negligent. O'Mahoney Interview, *supra* note 72.

178 *Id.*

179 We have noted above that contributory negligence and other tort doctrines might serve a useful insurance function. *See supra* note 63 and accompanying text. Again, this function is vitiated by the effects of first-party insurance. Contributory negligence may have beneficial insurance effects to the extent that first-party insurance incorporates copayment features. Copayment features, however, are sometimes not

Academics frequently complain that courts ignore the potential role of consumers in preventing product accidents.[180] The first-party insurance externality, however, may justify the courts' approach. Designing rules to induce accident-reducing behavior on the part of consumers is pointless when consumers, because of the first-party insurance externality, would disregard such rules. Not only will including the defense of contributory negligence provide little if any benefit, but including the defense may have a significant cost. That is, disallowing the defense of contributory negligence serves a deterrence objective. If there is a defense of contributory negligence, consumers will externalize to first-party insurers the costs of residually preventable accidents. Such accidents, therefore, will not be prevented.

Enterprise liability without the defense of contributory negligence, on the other hand, imposes upon manufacturers the costs of residually preventable accidents. Manufacturers will therefore internalize these costs and will prevent the subset of residually preventable accidents that are preventable by manufacturers. Put differently, those accidents that are not initially preventable but are nonetheless (cost-justifiably) preventable by increasing manufacturer care will be prevented if, and only if, there is no defense of contributory negligence. Given that consumer care levels cannot be optimized, disallowing a contributory negligence defense optimizes manufacturer care levels. The first-party insurance externality essentially raises the optimal care level of manufacturers above what it would be in the absence of first-party insurance externality.

For these reasons, enterprise liability without contributory negligence is the liability rule that most efficiently deters product accidents.[181]

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employed. For example, prepaid health insurance plans such as health maintenance organizations (constituting 20% of private health insurance market) and publicly provided plans such as Medicaid do not have copayment features. Thexton Interview, *supra* note 54. Likewise, life insurance policies never incorporate copayment features. Musco Interview, *supra* note 76. Moreover, when first-party insurers do employ copayment features, they only require insureds to bear a small fraction of total losses. *See supra* notes 53-54 and accompanying text. And, for such policies, insureds can, and often do, purchase some form of supplemental insurance to cover the costs that their primary coverage leaves unpaid.

180 *See, e.g.*, Epstein, *supra* note 63, at 2199-213 (arguing that courts should not have changed liability rules based on their faulty assumption that consumer care is irrelevant). "The common law restrictions on freedom of contract are not justified by any concern with externalities, or with duress, fraud, and incompetence of individual consumers." *Id.* at 2214. Maybe not, but Epstein has failed to consider the first-party insurance externality in his list of possible justifications, and it would justify the concern. *See generally* Croley & Hanson, *supra* note 31 (offering market-failure justifications for common-law restrictions on contract aspects of products liability law).

181 Another independent justification for employing an enterprise liability rule without a defense of contributory negligence is that consumers are less likely than manufac-

IV
RELAXING SOME ASSUMPTIONS

Previous Sections demonstrate that under certain assumptions an enterprise liability regime may be the most efficient products liability regime. This Section will discuss whether relaxing the least realistic of those assumptions significantly alters our conclusion. Part A considers the effect of costly or imperfect consumer information, and Part B considers the effect of nonpecuniary losses.

A. Optimizing Deterrence: Choosing a Products Liability Regime Given that Consumers Are Imperfectly Informed

Sections II and III assumed that consumers are perfectly informed as to the risks inherent in their consumption choices. Consumers are not perfectly informed, however, because information is not free.[182] By "imperfect consumer information" we do not mean that consumers systematically over- or under-estimate product risks.[183] As detailed below, imperfect consumer information means

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turers to respond to the incentives created by liability rules. Epstein has argued that "it is not surprising that virtually all nonlawyers are ignorant of the doctrinal dispute between negligence and strict liability .... The stakes simply are not high enough to spur individuals to master common law rules before the occurrence of an accident." Richard A. Epstein, *The Social Consequences of Common Law Rules*, 95 HARV. L. REV. 1717, 1744 (1982). Epstein doubts that limiting the defenses to manufacturer liability will be very significant by arguing that "[t]he effect of "these financial incentives is difficult to determine, particularly in personal injury cases in which the plaintiffs' inherent instincts of self-preservation play a central role." *Id.* at 1741; *see also* Neil K. Komesar, *Injuries and Institutions: Tort Reform, Tort Theory, and Beyond*, 65 N.Y.U. L. REV. 23 (1990); Howard A. Latin, *Problem-Solving Behavior and Theories of Tort Liability*, 73 CALIF. L. REV. 677 (1985); William H. Rodgers, Jr., *Negligence Reconsidered: The Role of Rationality in Tort Theory*, 54 S. CAL. L. REV. 1 (1980) (distinguishing between rational and non-rational decision-makers); *cf.* Fleming James, Jr. & John J. Dickenson, *Accident Proneness and Accident Law*, 63 HARV. L. REV. 769, 780 (1950) (a system of absolute liability will not increase prevention pressure on the individual).

182 Landes and Posner emphasize this point. Landes & Posner, *supra* note 23, at 536.

183 For justifications of enterprise liability based on systematic consumer misperceptions, see, e.g., Epple & Raviv, *supra* note 29; Victor P. Goldberg, *The Economics of Product Safety and Imperfect Information*, 5 BELL J. ECON. & MGMT. SCI. 683 (1974); Walter Y. Oi, *The Economics of Product Safety*, 4 BELL J. ECON. & MGMT. SCI. 3 (1973); Polinsky & Rogerson, *supra* note 29; Carl Shapiro, *Consumer Information, Product Quality and Seller Reputation*, 13 BELL J. ECON. 20 (1982); Marilyn J. Simon, *Imperfect Information, Costly Litigation, and Product Quality*, 12 BELL J. ECON. 171 (1981); Michael Spence, *Consumer Misperceptions, Product Failure and Producer Liability*, 44 REV. ECON. STUD. 561 (1977); *see also* P. DANZON, *supra* note 97, at 14-15 (summarizing the argument in the market for physician services). *See generally* G. CALABRESI, *supra* note 1, at 56-58 (1970) (discussing consumers inability to value risk property). Professor Alan Schwartz has argued that the level of consumer information may be irrelevant to the level of safety attributes (*i.e.*, manufacturer care levels) provided in products. He argues that as long as consumers do not err systematically in their (albeit uninformed) estimates of product safety, the market will operate as

simply that because information is costly, consumer estimates of product risk will necessarily be based on less than perfect information and therefore consumer estimates will at some level be imperfect.

By analyzing the implications of imperfect consumer information, this Section offers additional support for an enterprise liability regime. The intuition underlying this argument is reasonably straightforward: Enterprise liability is the only liability regime that includes the total costs of accidents in a product's market price. Because the price includes the total costs of a product, the price in effect informs consumers of the product's risks.[184]

1. *The Deterrence Goal Re-examined*

Given our assumption that consumers are imperfectly informed, it is useful to disaggregate "activity levels" into "manufacturer activity levels" and "consumer activity levels." Under this slightly altered taxonomy, the costs of product accidents will be a function of four variables: (1) the care taken by producers in manufacturing a product ("manufacturer care level"); (2) the care taken by consumers in using a product ("consumer care level"); (3) the total quantity of the product sold ("manufacturer activity level"); and (4) the quantity of the product purchased by each consumer ("consumer activity level"). As described in Section II, the costs of a product's accidents will be minimized when these variables are optimized, that is, when both manufacturers and consumers internalize the total accident costs caused by the product.

2. *The Failures of a "No Liability" Regime*

As already discussed, the market, even in the absence of a liability rule, will minimize the costs of accidents so long as information is perfect and transaction costs are zero. As this subsection shows, however, if consumers are imperfectly informed, there are two reasons why optimal deterrence may not obtain.

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if consumers were perfectly informed. And although some scholars have long held the view that consumers indeed tend to be systematically optimistic concerning product hazards, *see, e.g.*, G. CALABRESI, *supra* note 1, at 56, more recently Professor Schwartz has argued that consumers in the aggregate tend to behave as if well-informed. Schwartz, *supra* note 26, at 374-84.

184 W. LANDES & R. POSNER, *supra* note 10, at 294; Landes & Posner, *supra* note 23, at 550; *see also id.* at 555-56 ("[I]nformation about risk is impounded in the higher price and "communicated" to the consumer in a form that he can understand without investing in costly information."); Schwartz, *supra* note 26, at 399 ("The price . . . will more accurately reflect . . . accident costs, thereby better informing consumers of the risk . . . (just as a warning would)."); *cf.* Friedrich A. Hayek, *The Use of Knowledge in Society*, 35 AM. ECON. REV. 519 (1945) (describing how prices convey information); G. CALABRESI, *supra* note 1, at 69-72 (same); Note, *supra* note 63, at 1062-63 (1988) (same).

a. *The "Unravelling" of the Market for Manufacturer Care.*

The following example illustrates the first form of welfare loss resulting from imperfect consumer information. Suppose that there are two brands of mousetrap: Initially there are only Widgets, but at some later time Gidgets are added to the market.[185] Suppose further that a mousetrap's safety is a function only of its manufacturer's cost-justified investments in care, investments that are unobservable to consumers because of information costs. We assume for purposes of illustration that all accidents are preventable at least cost by manufacturers.[186] Suppose that Widgets, before the advent of Gidgets, are *efficiently safe*; that is, the Widget manufacturer makes all cost-justified investments in care, and the expected cost of Widget accidents therefore equals zero. Assume that the initial market price of Widgets equals their marginal cost. Suppose now that another mousetrap manufacturer begins cranking out Gidgets. Assume that Gidgets are *inefficiently unsafe*; that is, the Gidget manufacturer makes no cost-justified investments in care, and the expected cost of Gidget-accidents therefore is maximized. Finally, assume that because of information costs consumers cannot compare the relative safety of Widgets and Gidgets. At best consumers can only estimate the *average* risk of all mousetraps on the market, Widgets and Gidgets combined. As a result of their being indistinguishable, Widgets and Gidgets will be sold at the same market price despite the fact that Widgets, being efficiently safe, will have a lower total price. As shown below, that consumers cannot ascertain the total price of a particular brand of mousetrap causes the market for safety to "unravel."[187] The Widget manufacturer, in other words, loses some or all of its incentive to invest in care.

Because the Gidget manufacturer initially has lower production costs (since it makes no investments in care), and because it sells its traps at the same market price as Widgets, the Gidget manufacturer enjoys comparatively high profits. The Widget manufacturer, to maximize profits and to stay competitive, will, in response, lower its costs by reducing investments in manufacturer care.[188] The market price of all mousetraps—Widgets and Gidgets alike—will decrease because the average investment in manufacturer care (which consumers *ex hypothesis* perceive correctly) decreases. As the market price starts downward, the need increases for the Widget manufac-

185 Widgets, of course, are produced by Acme Manufacturing Inc. while Gidgets are produced by AAA Manufacturers Consolidated.

186 *I.e.*, all accidents are initially preventable.

187 *See supra* Section I(A)(3).

188 Notice that if all mousetraps were produced by a monopolist this deterioration in manufacturer care would not result.

turer to cut costs by reducing investments in care. As investments in care decline, the market price continues downward. And so it goes: The market for safe Widgets unravels. No mousetrap manufacturer will have incentive to make efficient investments in safety, because any manufacturer with greater than average costs will be competed out of the market. Thus, to be competitive, the Widget manufacturer must reduce its investment in manufacturer care to zero such that Widgets become identical to Gidgets. Because of the informational asymmetry, then, the market for efficiently safe Widgets disappears altogether.[189] Emerson, after pondering this dismal result, might have concluded that if a person makes a better mousetrap, the world will beat a path to her competitor's door.[190]

This unravelling result can be more generally stated: if consumers cannot perfectly distinguish safe from unsafe brands of a given product-type, and if the liability rule does not hold manufacturers liable for the accidents that the manufacturer could have prevented at least cost, the safety (*i.e.*, manufacturer care levels) of that product-type, and the safety of each and every brand of that product type, will be inefficiently low.

b. *Non-Optimal Consumer Activity Levels.*

The following example illustrates a second welfare loss resulting from the fact that consumers are imperfectly informed. Assume in this example that there is only one brand of mousetrap, say, BoDidgets. In the aggregate, consumers correctly perceive actual risks posed by mousetraps; again, this is true because consumers do not systematically misperceive product risks. The manufacturer activity level will therefore be optimized; the total quantity of mousetraps sold will be efficient.

In contrast, consumers' *individual* estimates are, owing to the cost of information, unlikely to be correct. Instead, individual estimates of risk will likely be distributed normally about the actual risk. There is a welfare loss associated with each errant estimate of a mousetrap's risk.[191] These welfare losses are what we refer to when we say that consumer activity levels (*i.e.*, the quantity of mousetraps purchased by each consumer) are not optimal.

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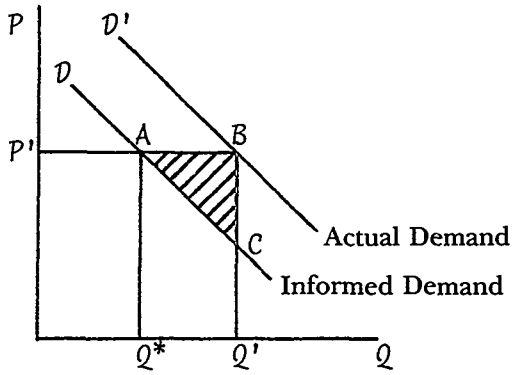
189 *See* Akerlof, *supra* note 48, at 490-91.

190 Paraphrased from quote attributed to Emerson: "If a man can write a better book, preach a better sermon, or make a better mousetrap than his neighbor, though he builds his house in the woods the world will make a beaten path to his door." JOHN BARTLETT, FAMILIAR QUOTATIONS 496 n.1 (15th ed. 1980).

191 *See* Landes & Posner, *supra* note 23, at 550 (alluding to this welfare loss).

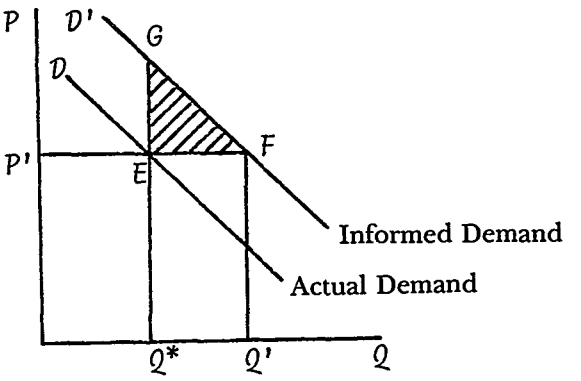
FIGURE 1



Error of Commission

Consumers who overestimate the safety of BoDidgets (*i.e.*, their estimate of a BoDidget's total price is less than its actual total price) will, as depicted in Figure 1, purchase too many mousetraps. We shall refer to such estimates as "errors of commission." The demand schedule *D* represents the quantity of BoDidgets that an individual consumer would demand at every price if she were fully informed of the risks of mousetraps. The demand schedule *D'* represents the consumer's *actual* demand for BoDidgets based on her ill-informed and optimistic estimate. The consumer's activity level in this case is too high. At a given price, *P'*, the consumer purchases ($Q' - Q^*$) more than the optimal quantity of BoDidgets. For this excess quantity of BoDidgets, the consumer pays the area Q^*ABQ'. However, from this excess she receives in benefits only Q^*ACQ'. Thus the loss resulting from the error of commission is illustrated as the shaded area *ABC*.

FIGURE 2



Error of Omission

As depicted in Figure 2, consumers who *under*estimate the safety of BoDidgets will purchase too few mousetraps. Such estimates we shall call "errors of omission." The demand schedule *D'* in Figure 2 represents the quantity of mousetraps that an individual consumer would demand at every price were she fully informed. The demand schedule *D* in this case represents the poorly informed, "pessimistic" consumer's actual demand for BoDidgets. This consumer's activity level is suboptimal. At a given price, *P'*, she purchases (*Q'* − *Q**) too few BoDidgets. To purchase the optimal quantity, *Q'*, the consumer would only need to pay the area *Q*EFQ'*. However, from these additional mousetraps she could enjoy the benefit of area *Q*GFQ'*. Thus, the loss resulting from the error of omission is illustrated by the consumer surplus foregone, area *EFG*.

To summarize, the losses resulting from errors of commission and errors of omission derive from the fact that consumers, in a no-liability world, demand a given product based on their perception of that product's total price. The total price comprises a market price and some expected accident cost. While the market price is evident to consumers, the expected accident cost is not. As a result, consumers must estimate a product's expected accident costs. Such estimates, because of the cost of information, will only approximate the product's actual risks. To the extent that a consumer's estimates of the risk deviate from the actual risk, there will be a welfare loss resulting from either super- or suboptimal consumer activity levels, depending on whether the particular consumer under- or over-estimates the product's risks.[192]

192 *See supra* Section IV(B)(2)(d) (explaining why errors of omission and commission are most significant in the context of nonpecuniary losses).

c. *Potential Market Response ("Reravelling").*

Perhaps, as described above,[193] manufacturers could obviate both market failings by selling insurance with their mousetraps.[194] Manufacturers could profitably sell their traps with actuarially fair product risk insurance at some total price less than the average total price. Indeed, any manufacturer able to make additional investments in care could increase profits by selling its product with insurance, thereby offering consumers a lower total price.[195] Because the market price would include these costs, the market price would equal the total price. Consumers, then, would be able to distinguish efficiently safe from inefficiently unsafe mousetraps and would, in effect, siguify their preference for efficiently safe products merely by choosing that product with the lowest market price. Accordingly, the market for safe mousetraps would reemerge. Manufacturers, to compete for consumers, would maximize their efficient investments in care and would thereby minimize the expected costs of accidents caused by their traps. In short, manufacturer care levels would be optimized.

Consumers would, through the market price, know a mousetrap's total price. Because the market price constitutes the total costs of a product, the market price in effect informs consumers of a product's risks. Because consumers would know a product's total price, they would adjust their activity levels accordingly. Stated differently, there would be no errors of omission or commission. To optimize their activity levels, consumers need not know what portion of the price reflects insurance; they need only act rationally. If the market price contains all the costs of a product, and consumers know that the market price constitutes the total price,[196] consumers will maximize welfare by consuming products until the ratio of marginal benefit to price is the same for all products.

So, if manufacturers sold insurance with their mousetraps, the welfare losses associated with imperfect consumer information

193 *See supra* Section II(B).

194 We are assuming here as elsewhere that the loading costs of such insurance would be zero.

195 By selling insurance with their products, manufacturers, in effect, would inform consumers of the safety level of their product. In other words, by insuring consumers against product risks, a firm guarantees the quality level of its product at the given market price. Such guarantees will be effective because manufacturers of relatively unsafe products will find providing their product with insurance too expensive (unprofitable) at that price. Thus, through different prices, consumers could distinguish safe from unsafe products.

196 Consumers will know that the market price is the total price because firms that compete by providing insurance with their products will advertise that fact. That is, to win customers, firms will make known that the market price of their product constitutes the total price.

would be eliminated. But would the market, in fact, induce manufacturers to provide such insurance? How does widespread ownership of first-party insurance, whose premiums generally fail to adjust according to insureds' consumption choices, affect this analysis? Since consumers are already insured through first-party mechanisms for the risks of product accidents, they would quite rationally be unwilling to pay a second insurance premium against such product risks. Consequently, manufacturers would not be able to prevent the losses stemming from imperfect consumer information. As illustrated in Section III and as explained below, these losses cannot be prevented except through the adoption of an enterprise liability regime.

3. *The Optimal Rule: Enterprise Liability*

A negligence regime will not provide an efficient response to the problem of imperfect consumer information for the same basic reasons that it will not provide an efficient response to the insurance-externality problem. First, courts applying a negligence standard will find it practically impossible to ascertain and enforce the optimal manufacturer care level. In other words, the unravelling of the market for manufacturer care would not be prevented through the application of a negligence rule.

Second, since by definition a negligence regime holds manufacturers liable only for initially preventable accidents, a product's market price under even a perfect negligence rule would not reflect the costs of unpreventable and residually preventable accidents. The product's total price would not be reflected in its market price. Accordingly, consumers making consumption choices would rely on imperfect estimates of each product's total price. Consumer activity levels, therefore, would not be efficient.

Enterprise liability, on the other hand, requires manufacturers to optimize manufacturer care and consumers to internalize a product's total price. This is true because, as discussed previously, under enterprise liability a manufacturer is required by law to pay the costs of all accidents caused by its product, including residually-preventable and unpreventable accident costs. Hence, consumers will internalize the total price of consuming an additional unit of the product and, therefore, will optimize consumer activity levels (*i.e.*, they will consume until the marginal cost equals the marginal benefit).[197]

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197 See *supra* notes 135-37.

B. Nonpecuniary Losses: The Trade-Off Between Insurance and Deterrence[198]

Here we relax the assumption that all losses are pecuniary. Some product-accident losses are nonpecuniary in the sense that they cannot be replaced by money or by a substitute good.[199] For example, there is no perfect substitute for a lost loved one. "Pain and suffering" are often considered nonpecuniary costs. The existence of nonpecuniary losses, as we shall describe more fully below, creates a potential conflict between the insurance (compensation) goal and the deterrence goal of products liability law: Some scholars argue that, under certain assumptions, to optimize insurance goals, consumers should not receive compensation for nonpecuniary losses—or at least not full compensation—because consumers do not demand insurance for such losses.[200] On the other hand, scholars generally agree that to optimize deterrence, manufacturers—when held liable—must bear all the losses their products cause, including nonpecuniary losses.[201]

1. *The Ambiguous Insurance Effects of Nonpecuniary-Loss Damages*

There are two principal arguments in the literature concerning the insurance effects of nonpecuniary losses. Both rely on the well-accepted assumption that damage awards for accident losses should equal the amount of insurance consumers would have purchased *ex ante*. First, it is argued that a given consumer will demand insurance for a nonpecuniary loss only if she expects that loss to increase her marginal utility of income.[202] The second argument seems to be

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198 This subsection draws from S. SHAVELL, *supra* note 10, at 153-54, 228-35, 245-54; Phillip J. Cook & Daniel A. Graham, *The Demand for Insurance and Protection: The Case of Irreplaceable Commodities*, 91 Q.J. ECON. 143 (1977); Danzon, *supra* note 26; Graham & Pierce, *supra* note 29; Samuel A. Rea, Jr., *Nonpecuniary Loss and Breach of Contract*, 11 J. LEGAL STUD. 35 (1982).

199 *See supra* note 62.

200 *See* P. HUBER, *supra* note 26, at 137; W. LANDES & R. POSNER, *supra* note 10, at 186-87; S. SHAVELL, *supra* note 10, at 133; Kahan, *supra* note 163, at 434-35; Priest, *supra* note 17, at 1553; Trebilcock, *Efficient Liability Rules*, *supra* note 32, at 249. *See generally* Rea, *supra* note 198 (first to make this point; discussing damages for breach of contract). *But see* Steven P. Croley & Jon D. Hanson, Insuring Against Nonpecuniary Losses (unpublished manuscript on file with authors).

201 *See, e.g.*, S. SHAVELL, *supra* note 10, at 133-34; Priest, *supra* note 17, at 1553.

202 *E.g.*, S. SHAVELL, *supra* note 10, at 228-30; Danzon, *supra* note 26, at 521 (citing Graham and Pierce for proposition that, when nonpecuniary loss has occurred, optimal compensation depends on how the injury affects the utility that the victim derives from money); Schwartz, *supra* note 26, at 363-64. One commentator puts the point slightly differently: "[T]he optimally insured individual will fully insure against the pecuniary loss but will not insure against the nonpecuniary loss." John J. Donohue III, *The Law and Economics of Tort Law: The Profound Revolution* (Book Review), 102 HARV. L. REV. 1047, 1065 (1989). The author continues: "If the marginal utility of wealth had declined as a result of the accident, then the party would not fully insure against the *pecuni-*

that even if all nonpecuniary losses increase consumers' marginal utilities of income, consumers will never demand *full* insurance against nonpecuniary losses. This is because nonpecuniary losses are thought to have a negative wealth effect on consumers' demand for normal goods in the injured state of the world.[203] Each of these arguments is pursued in greater detail below.

a. *The Effect on Marginal Utility of Income.*

In theory, consumers will demand insurance for nonpecuniary losses only when such losses *increase* their marginal utility of money in the injured state of the world.[204] Which types of nonpecuniary losses will increase or decrease a victim's marginal utility of income, however, is an unsettled empirical question.[205] Contrary to some

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ary loss . . . in the opposite case he would overinsure vis-a-vis the *pecuniary* loss . . . ." *Id.* at 1065 n.59 (emphasis in original).

203 *E.g.*, Schwartz, *supra* note 26, at 365-66 (citing Cook & Graham *supra* note 198). It follows, then, that consumers will also not demand full insurance against pecuniary losses that accompany nonpecuniary losses (again because of the wealth effect).

204 Economists generally agree that consumers purchase insurance to equalize marginal utilities of income over time and over possible states of the world. *But see generally* Croley & Hanson, *supra* note 200 (arguing that consumers equalize their total utilities over time and over possible states of the world). Through insurance, consumers transfer pre-accident income to post-accident endowments until the marginal utility of the last dollar transferred equals the marginal utility of that dollar at the time of transfer. Under ideal markets, if all losses were pecuniary, consumers would demand full insurance. For a mathematical proof of this proposition, see K. ARROW, *supra* note 35, at 212-16. Consumers may not demand full insurance, however, if losses contain a significant nonpecuniary component. This is true because such losses may alter a consumer's marginal utility of income. *See* W. KIP VISCUSI, EMPLOYMENT HAZARDS: AN INVESTIGATION OF MARKET PERFORMANCE 264-70 (1979); Spence, *supra* note 183, at 567-69. Insurance considerations will therefore conflict with deterrence considerations (as outlined below) only when a nonpecuniary loss does not increase the consumer's marginal utility of income.

205 Professor Priest unjustifiably asserts that nonpecuniary losses never increase the marginal utility of money. George L. Priest, *The Liability Crisis: A Diagnosis*, YALE L. REP. 2, 5 (Fall 1987); George L. Priest, *Understanding the Liability Crisis*, in NEW DIRECTIONS IN LIABILITY LAW 207-08 (W. Olson ed. 1988). Other scholars recognize that the effect of a nonpecuniary loss on a consumer's marginal utility is unclear and that it is an empirical, not a theoretical, matter. *See, e.g.*, S. SHAVELL, *supra* note 10, at 228-31; Danzon, *supra* note 26, at 521; Schwartz, *supra* note 26, at 363-64. There are some types of nonpecuniary losses for which, intuitively, we might expect the marginal utility of income not to increase. Professor Priest offers one such example:

> Individuals . . . do not voluntarily insure for non-pecuniary losses. Parents, for example, do not typically purchase insurance on the life of a minor child . . . because . . . there is no advantage to a family in suffering a financial sacrifice by paying insurance premiums while the child is alive in order to increase the family budget after the child dies.

Priest, *supra* note 17, at 1546. *But see* Croley & Hanson *supra* note 15, at Part III(B)(2)(a) (arguing, among other things, that parents may demand nonpecuniary-loss insurance on the lives of their children). For other examples, this conclusion seems unwarranted even on an intuitive basis. Professor Schwartz, for example, tells a different sort of story.

> Consider a business executive who runs recreationally and who loses a

scholars' claims,[206] the fact that market insurance for such losses is uncommon[207] reveals very little about the effect of nonpecuniary losses on consumers' marginal utilities of income; or, in other words, about consumers' demand for such insurance. The paucity of market insurance against nonpecuniary losses may simply reveal the insurmountable supply-side impediments facing insurers who attempt to offer this sort of insurance.[208]

Before considering the deterrence arguments for imposing nonpecuniary losses on manufacturers, let us discuss the second insurance argument against awarding full damages to consumers who suffer nonpecuniary losses.

b. *The Wealth Effect.*

It is widely believed that nonpecuniary losses cannot be fully compensated.[209] If this is true, an individual will suffer an income or wealth effect in the accident state of the world because of the loss of irreplaceable (nonpecuniary) wealth.[210] If we assume, not unrealistically, that an individual spends most of her income on normal goods,[211] then in the accident state of the world that individual will, all else equal, want to spend less money than if she had not experienced the loss. Stated differently, because the individual will be poorer in the accident state of the world, she will demand fewer goods in that state. Anticipating this negative wealth effect, such a consumer will, *ex ante*, demand less insurance to compensate her for such an accident: because she will want to consume less overall *ex*

> foot in an accident. . . . [T]he injury could increase the marginal utility of money for this consumer if it caused her to substitute travel or the symphony for running because these activities are more expensive. Her marginal utility could fall, however, if she substitutes reading for running.

Schwartz, *supra* note 26, at 364.

206 *See, e.g.*, Danzon, *supra* note 26, at 524 (less than one percent of total contributions for health benefits are for insurance against accidental death and dismemberment indicates low willingness to insure against pain and suffering); Stanley Ingber, *Rethinking Intangible Injuries: A Focus on Remedy*, 73 CAL. L. REV. 772, 785 (1985) (no insurance company offers coverage for pain and suffering on first-party basis because of insufficient demand for such coverage).

207 There are, however, a few examples of such insurance, including accidental death and dismemberment insurance. *See* Danzon, *supra* note 26, at 524; Graham & Pierce, *supra* note 29, at 466 n.23 (citing Richard Thaler & Sherwin Rosen, *The Value of Saving a Life: Evidence from the Labor Market*, in NATIONAL BUREAU OF ECONOMIC RESEARCH, STUDIES IN INCOME AND WEALTH 265 (Nestor E. Terlecky ed. 1976)) (examining evidence provided by markets for hazardous occupations regarding the compensation required to induce people to accept higher risks of job-related injury disability).

208 Schwartz, *supra* note 26, at 365; Croley & Hanson, *supra* note 15, at Part III(B)(2)(a).

209 *See supra* note 62.

210 Schwartz, *supra* note 26, at 365-66.

211 Normal goods are those that have positive income elasticities. P. SAMUELSON & W. NORDHAUS, *supra* note 88, at 452-53.

post, she will want to insure for less *ex ante*.[212]

Scholars have relied on this argument to explain why a consumer who has suffered a nonpecuniary loss should receive less than full compensation, that is, less than would be required to permit that consumer to consume the same bundle of goods *ex post* that she consumed *ex ante*.[213] Thus, if a liability rule requires manufacturers to compensate injured consumers for all the costs (including nonpecuniary costs) of product accidents, this compensation may exceed that which the consumers would have demanded in the form of first-party insurance. To that degree, the compensation may be more than optimal. A liability rule requiring full insurance, in other words, may be requiring too much insurance. Even so, scholars have failed to recognize a second, offsetting wealth effect.

Legal economists generally agree that beneficial deterrence consequences result from a requirement that manufacturers compensate injured consumers for nonpecuniary losses. If the probability and maguitude of accidents are reduced because of such a rule,[214] then consumers will *ex ante* face less of a risk of an irreplaceable loss. Similarly, consumers can expect a reduction in the size of a loss in an accident state of the world. Consumers will enjoy an increase in wealth, because of the decrease in expected loss *ex post* and the decrease in risk *ex ante* that result from the requirement that manufacturers internalize nonpecuniary losses.[215] If, *ex ante*, con-

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212 There may be an exception to this result. It is possible that consumers with very little wealth will spend the bulk of it on inferior goods (*i.e.*, goods for which consnmption increases as income decreases). As a result of the nonpecuniary costs in the accident state of the world, such consumers will experience a decrease in wealth and, therefore, will want to spend more money to consume more inferior goods than they did before the accident. Snch a consumer, *ex ante*, would recognize that, *ex post*, she will experience this wealth effect and, therefore, she will demand more insurance to compensate her against such as an accident.

213 *E.g.*, Schwartz, *supra* note 26, at 365-66 (citing Cook & Graham, *supra* note 198).

214 *See infra* Section IV(B)(2).

215 *Cf.* R. POSNER, *supra* note 8, at 184-85 (explaining that as risk of nonpecuniary loss such as death increases, an individual's wealth decreases because her likelihood of being able to enjoy her wealth decreases); Schwartz, *supra* note 26, at 408 ("[R]isks are current costs to people; consequently people are poorer when they face high risks . . . .").

To be sure, one might argue that—wealth effects aside—the decrease in risk to consumers resulting from the beneficial deterrence effects of requiring that manufacturers pay nonpecuniary-loss damage awards would lower consumer demand for insurance. As the risk faced by risk-averse consumers decreased, the argument goes, consumer demand for insurance would decrease. This effect, however, represents the other side of the equal *increase* in consumer demand for product-risk insurance that would result were nonpecuniary-loss damage awards disallowed. Since these effects are offsetting, the effect on consumer demand for insurance resulting from the change in risk faced by consumers, but unrelated to the change in consumer wealth, have no obvious bearing on the policy decision over whether nonpecuniary-loss damages should be awarded. We are grateful to Jason Johnston for making this point.

sumers have more wealth because of the reduced risk of a product accident, then they will demand more of all normal goods. Insurance, it seems realistic to assume, is a normal good. Therefore, as a result of the liability rule's deterrence effects, one might expect an increase in consumer demand for insurance against product accidents.[216]

Thus, for most consumers there are *two* wealth effects that one must compare to determine whether manufacturers should be required on insurance grounds to compensate consumers for nonpecuniary losses.[217] First, one must ascertain to what extent a given nonpecuniary loss reduces the wealth of the consumer in the accident state of the world such that, *ex ante*, the consumer will rationally want to pay for less insurance to compensate her for all losses in the event of an accident. Second, one must measure the extent to which a liability rule requiring that manufacturers pay nonpecuniary losses reduces the costs of accidents, so that consumers enjoy a positive wealth effect and therefore will *ex ante* want to buy more insurance.

In deciding what should be the optimal damages paid by manufacturers and received by consumers following a product accident, it is not *a priori* clear which of the two wealth effects will be greater. In other words, it is not obvious whether, given the imposition of the liability rule, consumers will *ex ante* demand more insurance or less. In sum, without more information we cannot determine what effect, if any, a liability rule will have on consumers' wealth or on that consumers' demand for insurance.

2. *The Unambiguous Deterrence Benefits of Nonpecuniary-Loss Damages*

Even if we assume arguendo that nonpecuniary losses do not affect a person's marginal utility of money (such that consumers do not demand nonpecuniary loss insurance), and even if we assume further that nonpecuniary losses cause a net negative wealth effect (such that consumers do not demand full insurance for their losses in an injury state of the world), there remain important *deterrence* rea-

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216 Put slightly differently, if because of the decrease in expected accident costs consumers expect to have more wealth in the accident state of the world than they would have had in the absence of the liability rule, then consumers will *ex post* demand more of all normal goods than they would have absent such a rule. Therefore, anticipating the cost-reducing benefits of the liability rule, consumers would *ex ante* demand more insurance to compensate them against product accidents than they would have, had their been no requirement that manufacturers compensate consumers for nonpecuniary losses.

217 Note that this wealth-effect issue is separate from the issue of whether and how the loss will affect the consumer's marginal utility of income. *See supra* Section IV(B)(1)(a).

sons to impose on manufacturers all losses their products cause, including nonpecuniary losses. This subsection will show that the conclusions as to the superiority of enterprise liability as a deterrence regime developed in Sections II and III apply only if we assume that both pecuniary and nonpecuniary losses are imposed on manufacturers. To show this, we shall review our conclusion concerning the four deterrence variables enumerated in Section III (consumer care levels, manufacturer activity levels, manufacturer care levels, and consumer activity levels) and shall examine how the presence of nonpecuniary losses affects those variables.

a. *Consumer Care Levels—Largely Unaffected.*

As already indicated, given the first-party insurance externality, no liability rule will optimize consumer care levels because consumers will be compensated for their injuries and will therefore engage to some extent in moral hazard.[218] The presence of nonpecuniary losses, however, alters this conclusion somewhat. Scholars agree that nonpecuniary losses cannot be fully recompensed.[219] Even if a liability regime required manufacturers to pay nonpecuniary-loss damages, consumers would not be made whole. Therefore, to the extent that a consumer bears all or a portion of nonpecuniary losses, she will have incentive to invest in care. That is, nonpecuniary losses mitigate the problem of moral bazard, no matter the liability regime.[220]

b. *Manufacturer Activity Levels—Optimized.*

This Article has explained that, owing to the first-party insurance externality, manufacturer activity levels will be too high.[221] With regard to nonpecuniary losses, however, the insurance externality is less serious. This is true because, for whatever reasons, first-party insurers typically do not cover such losses.[222] Consumers are left to bear nonpecuniary losses themselves. Therefore, if consumers are perfectly informed, aggregated consumer demand will cause manufacturers to optimize activity levels.[223] If, on the other hand, consumers systematically underestimate the risk of nonpecuniary losses, as many scholars contend, then consumers' consumption choices will generate non-optimal manufacturer activity

218 *See supra* Section III(B).
219 *See supra* note 62 and authorities cited *supra* note 198.
220 As we have already suggested, nonpecuniary losses may serve a copayment function. *See supra* text accompanying note 62.
221 *See supra* Section II(D)(2).
222 *See supra* Section II(D)(1).
223 *See supra* Section II(B).

levels.[224]

c. *Manufacturer Care Levels—Optimized.*

There is a consensus among law-and-economics scholars that, to optimize manufacturer care levels, manufacturers must bear both the pecuniary and the nonpecuniary costs their products cause when found liable.[225] Manufacturers must bear all losses to have adequate incentive to invest in care.[226] Measuring these losses will doubtless prove difficult. Nonetheless, to optimize manufacturer care, such measurements must be made, no matter the applicable liability rule.[227]

d. *Consumer Activity Levels—Improved.*

Part A of this Section on consumer activity levels showed that if prices do not fully reflect a product's risks to consumers, and if consumers are imperfectly informed as to the actual risks posed by such products, there will be a welfare loss associated with consumers' errant estimates.[228] However, if all losses are *pecuniary*, and if consumers are fully insured, consumers will not attempt to estimate product risks, as they will not bear such risks. Consequently, there will be no errors of omission and commission with regard to these risks.

As to nonpecuniary losses, on the other hand, the problem of non-optimal consumer activity levels may be quite significant. Because first-party insurers typically do not cover consumers for the risks of nonpecuniary losses (and because nonpecuniary losses cannot be fully recompensed), consumers must, based on imperfect information, estimate those risks in order to estimate a product's total price. This perceived total price, as explained in Part A of this Section, will randomly deviate from the actual total price, creating errors of omission and commission. Optimizing consumer activity levels, then, constitutes a second deterrence justification for imposing nonpecuniary costs on manufacturers within an enterprise liability regime.

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224 *See* Spence, *supra* note 183, at 563; Polinsky & Rogerson, *supra* note 29, at 581. This type of consumer misinformation provides a justification for holding manufacturers strictly liable for both pecuniary and nonpecuniary losses. *See* sources cited at *supra* note 183.

225 *See* sources cited at *supra* note 201.

226 S. SHAVELL, *supra* note 10, at 153-54.

227 Irrespective of the liability rule, then, courts must attempt to measure nonpecuniary losses. A court applying an optimal negligence regime, for example, must take into account nonpecuniary costs when determining optimal care. This is true because to set the correct cost-benefit standard a court must discover the full costs at issue.

228 *See supra* Section IV(A)(2)(b).

C. The Trade-Off Between Insurance and Deterrence Revisited

It is often stated in the literature[229]—and we have shown here—that for those nonpecuniary losses which do not increase a consumer's marginal utility of income, there may be adverse insurance effects associated with holding manufacturers liable. As we have noted, however, whether a nonpecuniary loss does or does not increase a consumer's marginal utility of income is an empirical matter of some dispute. We argued further that the wealth effect to consumers from holding manufacturers liable for nonpecuniary as well as pecuniary losses is also theoretically ambiguous. Thus, we have shown that the insurance consequences of including nonpecuniary losses in an enterprise liability regime may or may not be deleterious. On the other hand, we have also articulated a variety of deterrence considerations favoring such a regime. Therefore, even if we assume that imposing nonpecuniary losses on manufacturers has adverse insurance effects, it is still not clear whether these effects outweigh the beneficial deterrence effects of placing all costs on manufacturers. Under that assumption, when deciding whether or not to impose on manufacturers the nonpecuniary losses caused by their products, there is an inevitable trade-off between the insurance and deterrence goals of products liability law.[230]

CONCLUSION

Even an efficient liability rule will leave some accidents unprevented. Against those unprevented accidents, risk-averse consumers will desire insurance protection. Legal economists have recently come to believe that such protection could be more efficiently provided through first-party mechanisms than through enterprise liability *qua* insurance. They claim that manufacturers cannot respond, whereas first-party insurers do respond, to the obstacles facing all systems of insurance—such as moral hazard and adverse selection. Section I of this Article argued that such claims are unsubstantiated. Manufacturers may in fact be able to allocate the risk of unprevented product accidents quite efficiently. And, contrary to the received wisdom, first-party insurers fail to adjust premiums according to each insured's consumption choices. This failure gives rise to the first-party insurance externality.

As more fully explained in Sections II and III, the deterrence

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229 *E.g.*, S. SHAVELL, *supra* note 10, at 232; Schwartz, *supra* note 26, at 367.

230 Others have recognized a trade-off between insurance and deterrence goals with regard to the question of who should bear nonpecuniary losses. *See, e.g.*, sources cited *supra* note 229. However, they failed to include in their calculus the potentially beneficial wealth effect and the consumer activity-level benefit that we describe.

implications of this externality (*i.e.*, the effect on the total number and average cost of accidents) can be loosely summarized as follows. Under a negligence regime, manufacturers will make suboptimal investments in product safety, and activity levels will be inefficiently high. Under an enterprise liability regime, on the other hand, manufacturers will efficiently invest in product safety, and activity levels will be optimal. Enterprise liability, then, eliminates the insurance externality for these deterrence variables. Unfortunately, neither regime can overcome the externality with respect to consumer investments in care. Under both standards, consumer investments in care will be less than efficient, and, as Section I explains, there is no reason to believe first-party insurance has a comparative advantage over enterprise liability in that regard. Hence, to optimize activity levels and manufacturer care, courts and other lawmakers should prefer enterprise liability to negligence. That consumer information is costly and that product accidents entail nonpecuniary losses increase the deterrence benefits of an enterprise liability regime and bolster our ultimate conclusion that an absolute enterprise liability regime is the most efficient.[231]

EPILOGUE

Having demonstrated the existence and the implications of the

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231 Several scholars have harshly criticized Traynor's decision in Escola v. Coca Cola Bottling Co., 24 Cal. 2d 453, 150 P.2d 436 (1944) (Traynor, J., concurring), because "his remorseless one-directional logic only accounts for plaintiff's verdicts . . . [and] does not indicate any principled stopping point for recovery." Epstein, *supra* note 26, at 647-48; *see also* Owen, *supra* note 129; Trebilcock, *Efficient Liability Rules*, *supra* note 32, at 245-49. We have shown, however, that Traynor's logic may have been sound: So long as an injured consumer can establish causation, it is not clear why there should be a stopping point for recovery.

A few who read drafts of this Article expressed initial concern over the fact that we appear to be arguing on behalf of a liability rule which would require consumers to pay double for their insurance against the risk of product accidents: first to the first-party insurer and then to the manufacturers of the products they consume. This concern, however, is based on a misunderstanding of our argument. So long as insurers have a right of subrogation, consumers will pay for product-risk insurance only when they purchase products. In turn, of course, the price of first-party insurance would decrease to reflect the reduction in expected accident costs for which the insurer would ultimately be liable. *See generally* Viscusi, *supra* note 79, at 103-04. It is true that the total price that consumers pay for their product-risk insurance under our proposed regime would be greater than under a regime that did not allow nonpecuniary loss damages, but that price increase is matched by greater compensation in the event of an accident and, as we argued in Section IV, may be more than offset by deterrence benefits. *See* Section IV.

It should also be noted that under the enterprise liability regime that we propose, manufacturers would not be liable for *all* injuries caused by their products. First-party insurance policies exclude coverage for some injuries that are intentionally self-inflicted (suicide being an extreme example). For such injuries, inasmuch as first-party insurance does not cover the costs, there is no first-party insurance externality. For such injuries, therefore, our justification for enterprise liability does not apply.

first-party insurance externality, we now encounter another interesting, if secondary, question: Why has this externality been previously disregarded by legal economists? The answer seems to be that legal economists have not so much intentionally disregarded the first-party insurance externality as they have overlooked it.

As this Article has demonstrated, the first-party insurance externality plagues all forms of first-party insurance except, perhaps, first-party automobile insurance.[232] To the extent that automobile insurance classifies consumers according to their consumption choices, it is the exception, not the rule. Commentators, however, have wrongly presumed that auto insurance is representative of all forms of first-party insurance, thereby tacitly accepting the assumption that there is no first-party insurance externality. There are at least three explanations for why scholars have adopted this "auto-insurance paradigm."

The first reason stems from the influence of Calabresi's seminal book, *The Costs of Accidents*.[233] This book may be the most influential work in tort scholarship.[234] It established what has been the primary focus of research in tort law for the past two decades. Its careful treatment of countless issues that continue to fascinate today's legal academicians make it an authoritative reference guide—sort of a tort scholar's bible.[235]

Calabresi, like the generation of tort scholars before him,[236] concentrated his research on the prodigious accident costs[237] ac-

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232 *See supra* notes 70-71 and accompanying text.

233 G. CALABRESI, *supra* note 1.

234 R. POSNER, *supra* note 8, at 186 n.1.

235 Soon after the book was published, Frank Michelman described it as a "nigh-inexhaustive (though sometimes exhausting) trove of arguments, rejoinders, perspectives, considerations and satellite topics." Frank Michelman, *Pollution as a Tort: A Non-Accidental Perspective on Calabresi's Costs*, 80 YALE L.J. 647, 648 (1971). Robert Rabin wrote that "A leading influence among scholars taking an economic perspective [of tort law] has been Guido Calabresi, whose book, The Costs of Accidents, provides a comprehensive and systematic economic analysis of the tort system." ROBERT RABIN, PERSPECTIVES ON TORT LAW 155 (2d ed. 1983).

> One of the most influential legal scholars of his generation, Calabresi is perhaps best known in the legal community for a book called *The Costs of Accidents*, on transforming the understanding of civil liability through economic analysis . . . . George L. Priest, himself a noted torts scholar, assesses the book's impact: "What Guido did was bring real rigor to the economic analysis of law. He really was a pioneer. Guido's stature in this field is absolute. You have lawyers from the far provinces routinely and familiarly using the terms of *The Costs of Accidents*.

Adam Liptak, *Taking It Personally*, 51 YALE 24, 25 (March 1988).

236 *See* Priest, *supra* note 16, at 482, 497.

237 For an estimation of the empirical maguitude of automobile accident losses, see ALFRED CONARD, JAMES MORGAN, ROBERT PRAT, JR., CHARLES VOLTZ & ROBERT BOMBAUGH, AUTOMOBILE ACCIDENT COSTS AND PAYMENTS (1964); Fleming James & Stu-

companying the rise of the automobile.[238] It is not surprising, then, that Calabresi would address the insurance externality only in the context of auto insurance. According to Calabresi, although first-party automobile insurance is not perfect,[239] it does in fact classify insureds into acceptably narrow risk pools based on such characteristics as age, gender, car type, driving record, and the like.[240] Society, according to Calabresi, can trust first-party auto insurers not to significantly distort the effect of liability rules.[241] Calabresi's more general, though unintentional, message seems to have been that *all* first-party insurance will reinforce, not undermine, the designs of lawmakers to deter accidents. Commentators who were influenced by Calabresi's work, therefore, may have overlooked the first-party insurance externality because they presumed that all first-party insurance classifies as well as automobile insurance does.

Second, even if not influenced by Calabresi, tort scholars tend to focus on car insurance simply because car insurance is very important. Automobiles are responsible for a large percentage of the accident costs in our society.[242] Moreover, automobile accident cases constitute the most frequent type of negligence case.[243] If, therefore, a legal scholar were going to discuss just one type of first-party insurance in her analysis of liability rules, it should not be surprising that she would choose car insurance. Finally, perhaps commentators concentrate on car insurance because applying for and owning car insurance is an experience familiar to most legal scholars and their audiences. For this reason, too, we should expect authors examining first-party insurance to choose the car-insurance

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art Law, *Compensation for Auto Accident Victims: A Story of Too Little and Too Late*, 26 CONN. B.J. 70 (1952).

238 *See, e.g.*, A. CONARD, *supra* note 237; ROBERT KEETON & JEFFREY O'CONNELL, BASIC PROTECTION FOR THE TRAFFIC VICTIM: A BLUEPRINT FOR REFORMING AUTOMOBILE INSURANCE (1965); H. ROSS, *supra* note 156. Calabresi still calls the car "the Gift of the Evil Deity." GUIDO CALABRESI, IDEALS, BELIEFS, ATTITUDES, AND THE LAW Ch. 1 (1985).

239 For a discussion of what Calabresi considers the imperfections, see G. CALABRESI, *supra* note 238, at 103-05; *see also* Calabresi, *supra* note 32, at 838.

240 G. CALABRESI, *supra* note 1, at 146-47.

241 *Id.* at 248; *cf.* Fleming, *supra* note 8, at 825 (suggesting that car insurance may foster deterrence goals).

242 *See* citations *supra* note 237; R. COOTER & T. ULEN, *supra* note 27, at 469 (Litigation regarding auto accidents "occupies . . . a large fraction . . . of the court system's limited resources.").

> Automobile accidents represent one of the highest risks of injury that the ordinary citizen faces. Moreover, disputes arising from those accidents account for a large fraction of all civil complaints. . . . Thus, it is not surprising that dissatisfaction with the tort liability system's method of dealing with losses arising from automobile accidents is of long standing.

Id. at 463; *see* THE 1988 INFORMATION PLEASE ALMANAC 793 (41st ed. 1988); Donohue, *supra* note 202, at 1047 & n.5.

243 R. POSNER, *supra* note 8, at 186-87.

example.[244]

Of course, it is not at all clear that car insurance segregates insureds into optimally narrow risk pools.[245] The fact that they segregate *at all*, however, seems to have assured scholars that car insurance is to be trusted. One explanation for why car insurers may more efficiently segregate insureds is that car insurers rely on police departments and other publicly financed institutions to monitor insureds as they drive and to gather and report information about insureds who violate traffic rules or who are involved in accidents.

In sum, it seems that commentators involved in the debate over the comparative efficiency of products liability rules either have entirely ignored the potential effect of first-party insurance on the efficacy of products liability rules or—implicitly assuming that what is true of first-party car insurance is true of all first-party insurance—have asserted that there is no first-party insurance externality.[246] The important debate over the efficiency of enterprise liability, then, has been based on a false shared premise, the automobile-insurance paradigm.[247]

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244 Another reason the first-party insurance externality may have been overlooked is that until recently, most law-and-economics models have been based on the assumption that "consumers have no role to play in the avoidance of injuries from product use . . . ." For a detailed discussion of this phenomenon, see George L. Priest, *Punitive Damages and Enterprise Liability*, 56 S. CAL. L. REV. 123, 124-32 (1982). Because scholars, in essence, assumed away the role of consumers, they may have been insensitive to the potentially adverse deterrence effects of consumer-owned, first-party insurance.

245 *See, e.g.*, JERRY L. MASHAW & DAVID L. HARFST, THE STRUGGLE FOR AUTO SAFETY 242-43 (1990) (describing difficulties confronting first-party automobile insurers).

246 *See supra* notes 13-26 and accompanying text.

247 Consistent with this observation, courts and academic commentators have recently been criticized for failing to consider institutions—such as insurance—outside the tort system, and for focusing too narrowly only on one method—tort liability—of managing risks. Viscusi, *supra* note 79, at 65; *see* Stewart, *supra* note 15, at 184-85.

Another possible reason for why scholars have overlooked the first-party insurance externality is that they were preoccupied with the potentially deleterious deterrence effects of *liability* insurance. *See supra* note 10 and text accompanying notes 7-12. Legal economists have eased that concern in two ways. First, they reasoned that even if liability insurance does lead to more accidents, it may nevertheless be desirable from a social efficiency standpoint. *See supra* note 10. More important, commentators now believe that commercial liability insurance probably does not significantly blunt the deterrence effects of tort law. *Cf.* G. EADS & P. REUTER, *supra* note 113, at viii (concluding that "[o]f all the various external social pressures, product liability has the greatest influence on [manufacturers'] product design"). Indeed, some argue that commercial liability insurance, if it has any effect, may actually enhance tort law incentives. *See id.* at 25-31; *see also* Mayers & Smith, *supra* note 50, at 282 (arguing that insurance firms may have a "comparative advantage . . . in monitoring certain aspects of the firm's real activities" as compared to shareholders and other interested parties); Schwartz, *supra* note 79, at 337-38 ("Indeed, in one way liability rules combined with such insurance might produce even better safety results than liability rules standing on their own: for a liability insurer may be able to offer safety advice to an insured that will permit the latter actually to improve the level of safety it provides."). Schwartz also noted:

This Article argues that legal economists have failed to consider

> A liability insurer, by processing a large number of claims and by conducting the reviews and inspections that lead to its own underwriting decisions, may well become an expert in techniques of risk prevention [or loss control]—indeed, more of an expert than the insured itself. If so, then this is an expertise that the insurer can pass on to the insured.

Id. at 356; *see also* Shavell, *supra* note 8, at 121 (concluding that "liability insurance does not have an undesirable effect on the working of liability rules . . . the terms of insurance policies sold in a competitive setting would be such as to provide an appropriate substitute . . . set of incentives to reduce accident risks.").

As an empirical matter, there is little question that manufacturers' liability insurers are more responsive than consumers' first-party insurers are to the risks of their insureds. Under "feature rating," for example, liability insurers survey the insureds' operations and adjust premiums accordingly. K. ABRAHAM, *supra* note 8, at 48. Under experience rating, liability insurers adjust premiums according to insureds' previous liability records insofar as those records are predictive of expected liability. Schwartz, *supra* note 79, at 320-21; *see also* Croley & Hanson, *supra* note 15, at Part IV(B) (illustrating how liability insurers have employed copayment mechanisms and policy exclusions to encourage insureds to prevent preventable accidents); *id.* at Part IV(C) (describing the rise of new forms of commercial liability insurance—*e.g.*, mutuals—to cope with some of the sorts of market problems that underlie the first-party insurance externality); Fleming, *supra* note 8, at 825 ("In the case of industrial and commercial enterprises, the safety inspection service operated by liability insurers becomes [a] valuable adjunct to accident-preventive procedures . . . ."); Nelson Lacey, *The Competitiveness of the Property-Casualty Insurance: A Look at Market Equity Values and Premium Prices*, 5 YALE J. ON REG. 501, 506-11 (1988) (insured firms have incentives to reduce risky behavior because insurance premiums reflect long-term risks generated by their operations). Priest, *supra* note 129, at 1043-44 (arguing that liability insurers have adopted several mechanisms recently to avoid blunting incentives for safety). Thus, it seems reasonable for scholars to have concluded that manufacturers' incentives to prevent accidents are not significantly distorted by a "liability insurance externality." And perhaps it was from this conclusion that scholars willingly but wrongly lept to the less reasonable conclusion that there is no first-party insurance externality.

Although this discussion suggests another partial explanation for why scholars previously iguored the first-party insurance externality, it raises an important question. How can our upbeat description of liability insurance be reconciled with our claim that first-party insurance performs so poorly? The answer, we believe, turns on several significant differences between the two types of insurance. To begin with, as compared to first-party insurers, corporate liability insurers cover a relatively small group of insureds, who buy relatively expensive policies. With much more at stake in each policy, the corporate liability insurer finds it worthwhile to use a relatively detailed application, to verify the information received on applications, to monitor each insured closely, and to carefully investigate claims made by insureds. Moreover, the benefits to liability insurers of creating incentive schemes to control for moral hazard and the like will be greater simply because manufacturers may be more responsive than consumers to such incentives. *See supra* note 181; *cf.* Priest, *supra* note 17, at 1561 ("Some of this insurance undoubtedly represents the purchase of risk monitoring . . . services from commercial casualty insurers."); Priest, *Understanding the Liability Crisis*, in NEW DIRECTIONS IN LIABILITY LAW, *supra* note 205, at 197 (arguing that under "commercial liability coverage, . . . rates and policy terms are usually set on a customer-by-customer basis . . . . By contrast, [under first-party insurance,] . . . coverage is more standardized . . . ."); Schwartz, *supra* note 79, at 318 n.21 (product liability insurance premiums are adjusted to reflect even insureds' activity levels). Not only are the benefits of monitoring each insured relatively high, but, because of the relatively small number of insureds in each pool, the costs of monitoring insureds are relatively low. *See generally* Croley & Hanson, *supra* note 15, at Part IV(C)(2) (explicating the benefits of small numbers in insurance pools). Moreover,

the effects of first-party insurance on the efficacy of liability rules and that, given the first-party insurance externality, this oversight substantially undermines their conclusions. But the issues in this debate are complex, and our conclusions should be regarded as preliminary. Although we think the case strong, we have not *proved* that an enterprise liability rule will always maximize social welfare. Research in this area is still at the threshold. This Article, however, illustrates inadequacies in previous theoretical attempts to choose among liability rules and, if nothing more, initiates a challenge to further research.[248]

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it seems plausible that liability insurers can more easily assess the safety characteristics of its insureds' products, inasmuch as manufacturers typically produce large quantities of homogeneous products. In contrast, it may be relatively difficult for first-party insurers to assess the consumption choices of consumers, because consumers tend to buy a large variety but small quantity of consumer products.

The free-rider problem is less significant in commercial liability insurance lines than it is in personal (first-party) insurance lines for another reason. The regulatory pressure to standardize insurance policies, *see supra* note 129, is much weaker in the former than it is in the latter: "personal lines are purchased by consumers who regulators seek to protect because consumers are generally regarded as uninformed about insurance, and commercial lines are purchased by business firms which, because of greater commercial ability, compel less regulatory protection." Priest, *supra* note 129, at 1002.

Finally, insofar as free-riding occurs through moral hazard and adverse selection in the form of fraudulent misrepresentations by insureds, *see, e.g.*, ROBERT E. KEETON & ALAN I. WIDISS, INSURANCE LAW 567 (1988) (fraud in the application process is a major problem confronting all insurers); Waldman, *supra* note 95, at 47 ("roughly 10 percent of auto premiums go to pay for fraud"). Free-riders in a corporate liability pool face a greater likelihood of being detected than do free-riders in a first-party pool. This is true not just because the insurer monitors the manufacturers more closely (as suggested above) but also because manufacturers are easier to monitor. *Cf.* Alan Schwartz, *A Theory of Loan Priorities*, 18 LEGAL STUD. 209, 220-21, 224 (explaining why it is relatively easy for creditors to ascertain a potential debtor's debt status). Consider the insurance application process. Manufacturer-insureds, unlike first-party insureds, are usually required to provide a great deal of information (much of it publicly) to other institutions for other reasons (*e.g.*, filings with the SEC, the IRS, shareholders and bondholders, state and federal regulatory agencies). To that extent, the cost to manufacturers of fraudnlent misrepresentations on the application is higher because of the larger number of information monitors and the disparate incentives created by different disclosure requirements. Moreover, manufacturers probably find it more administratively costly to commit fraud, all else equal, than consumers do: the larger the entity, the larger the amount of coordination required to carry out fraud. Put differently, the more people required to maintain a secret, the more difficult it is to maintain secrecy. *Cf.* Robert C. Ellickson, *The Case for Coase Against Coaseanism*, 99 YALE L.J. 611, 617 (1989) ("organizations cannot nimbly respond to unusual business opportunities"); Helen A. Garten, *Insider Trading in the Corporate Interest*, 1987 WIS. L. REV. 573, 637 (describing firms' apparent carelessness in transmitting sensitive information); Thomas W. Merrill, *The Economics of Public Use*, 72 CORNELL L. REV. 61, 81-82 (1986) (government is unable to use same methods as private investors to assemble large parcels of land because government has more difficulty maintaining secrecy).

248 For instance, as Section I emphasized, it is theoretically possible that, for some individual-risk characteristics, enterprise liability would create relatively heterogeneous risk pools as compared to those that first-party insurance would create under a negligence rule. As Section I described, heterogeneous risk pools may generate welfare

This Article has examined the first-party insurance externality only for its implications for the choice of an efficient products liability regime. This externality, however, may have other, more general implications. For instance, it may be enlightening to re-examine the choice between using liability rules and using direct regulation to generate efficiently safe consumer products. Likewise, in light of the fact that previous analysts have overlooked the first-party insurance externality, it may be useful to critically scrutinize the putative causes of the recent insurance crisis.[249]

Finally, even broader implications follow from the most general reading of this Article's thesis that the presence of insurance may affect the choice among legal rules. Insofar as any law is intended to allocate costs among parties so as to create incentives for appropriate behavior, lawmakers should take into account the extent to which the parties are insured against those costs and the potential incentive-blunting effects of that insurance. The failure of lawmakers to consider the potentially adverse effects of first-party insurance suggests that areas of the law besides products liability should be re-examined in light of the first-party insurance externality.

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losses in the form of adverse selection. Therefore, it is conceivable—though we suspect unlikely—that, for some subset of these product risks, the welfare loss will outweigh the social welfare gain stemming from the beneficial deterrence implications of enterprise liability. Whether such product risks exist is an empirical question which probably cannot be fully answered absent the adoption of enterprise liability.

Similarly, we—like everyone involved in this debate—cannot claim to know with certainty the net effect of nonpecuniary losses on the relative efficiency of products liability rules. This Article has provided new theoretical arguments in favor of requiring manufacturers to compensate consumers for such losses. Ultimately, however, this too is an empirical matter. Definitive answers await further research.

249 *See* Croley & Hanson, *supra* note 15.