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The Uneasy Case for Product Liability

A. Mitchell Polinsky and Steven Shavell*

In this Article we compare the benefits of product liability to its costs and conclude that the case for product liability is weak for a wide range of products. One benefit of product liability is that it can induce firms to improve product safety. Even in the absence of product liability, however, firms are often motivated by market forces to enhance product safety because their sales may fall if their products harm consumers. Moreover, products must frequently conform to safety regulations. Consequently, product liability might not be expected to exert a significant additional influence on product safety — and empirical studies of several widely sold products fail to find an effect of product liability on the frequency of product accidents. A second benefit of product liability is that it can improve consumer purchase decisions by causing product prices to increase to reflect product risks. But because of litigation costs and other factors, product liability may raise prices excessively and undesirably chill purchases. A third benefit of product liability is that it compensates victims of product-related accidents for their losses. Yet this benefit is only partial, for accident victims are frequently compensated by insurers for some or all of their losses. Furthermore, the payment of compensation for pain and suffering actually reduces the welfare of individuals because it effectively forces them to purchase insurance for a type of loss for which they ordinarily do not wish to be covered. Offsetting the potential benefits of product liability are its costs, which are great. Notably, the transfer of a dollar to a victim of a product accident via the liability system requires more than a dollar on average in legal expenses. Given the limited benefits and the high costs of product liability, we come to the judgment that its use is often unwarranted. This is especially likely for products for which market forces and regulation are relatively strong, which includes many widely sold products. On the other hand, the use of product liability may be desirable for products for which these factors are weak. Our generally skeptical assessment of product liability for products for which market forces and regulation are strong is in tension with the broad social endorsement of such liability.

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I. Introduction

The liability of manufacturers of products for harms caused to their customers — product liability¹ — has great prominence in the United States. Tens of thousands of product liability cases are filed annually in state and federal courts, including some as class actions that involve hundreds of thousands or even millions of individuals as plaintiffs.² The legal bases for product liability suits are expansive, comprising liability for manufacturing defect, design defect, and failure to warn.³ Product liability cases receive significant attention from the media, especially when they concern widely sold products that harm many consumers.⁴ Moreover, product liability is of growing importance outside of the United States, particularly in the European Union and in Asia.⁵

¹ RESTATEMENT (THIRD) OF TORTS: PRODUCT LIABILITY § 1 (1998) (“One engaged in the business of selling or otherwise distributing products who sells or distributes a defective product is subject to liability for harm to persons or property caused by the defect.”); *id.* § 1 cmt. c (“The rule stated in this Section applies . . . to manufacturers and other commercial sellers and distributors”); *see also* RESTATEMENT (SECOND) OF TORTS § 402A (1965); DAN B. DOBBS, THE LAW OF TORTS § 352 (2000); DAVID G. OWEN, PRODUCTS LIABILITY LAW § 1.1 (2005).

² The most recent year for which relevant data are available is 2006. In this year, 6454 product liability cases were filed in nine states examined by the National Center for State Courts. NATIONAL CENTER FOR STATE COURTS, EXAMINING THE WORK OF STATE COURTS, 2007: A NATIONAL PERSPECTIVE FROM THE COURT STATISTICS PROJECT 17-18 (2008), *available at* http://www.ncsconline.org/D_Research/csp/2007_files/Examining%20Final%20-%202007%20-%201%20-%20Whole%20Doc.pdf. Using population data from the U.S. Census Bureau to extrapolate from this number to the nation as a whole results in 29,163 state product liability cases in 2006. U.S. CENSUS BUREAU, THE 2009 STATISTICAL ABSTRACT (2009), *available at* <http://www.census.gov/compendia/statab/tables/09s0012.xls>. In fiscal year 2006, there were also 49,743 product liability cases filed in federal district court. ADMINISTRATIVE OFFICE OF THE U.S. COURTS, 2007 ANNUAL REPORT OF THE DIRECTOR: JUDICIAL BUSINESS OF THE UNITED STATES COURTS, at tbl. S-10 (2008). Hence, the estimated number of state and federal product liability cases in 2006 is 78,906. For examples of class actions involving large numbers of individuals, see *Schwab v. Philip Morris, Inc.*, 449 F. Supp. 2d 992 (E.D.N.Y. 2006) (consisting of a class of tens of millions of smokers); *In re Diet Drugs*, 2000 WL 1222042 (E.D. Pa. 2000) (approving a settlement in favor of a class of approximately 6 million users of diet drugs); *see also* 1 WILLIAM B. RUBENSTEIN ET AL., NEWBERG ON CLASS ACTIONS § 3:5 (4th ed. 2002) (“Class actions under the amended Rule 23 have frequently involved classes numbering in the hundreds, or thousands, or even millions.”).

³ *See infra* text accompanying notes 58-61.

⁴ *See infra* Part IX.C.

⁵ *See generally* LOVELLS, PRODUCT LIABILITY IN THE EUROPEAN UNION: A REPORT FOR THE EUROPEAN COMMISSION, FEBRUARY 2003, at 31, 37 (“There has been a noticeable increase in the number of product liability

Perhaps surprisingly, no one to our knowledge has attempted to examine the question whether, or in what circumstances, product liability is socially desirable, considering its major benefits and costs.⁶ We undertake this task here and come to the judgment that the case for product liability is problematic for a wide range of products. The essence of our argument is that the three beneficial effects of product liability — inducing firms to improve product safety, causing prices of products to reflect their risks, and providing compensation to injured consumers — are, for many products, likely to be outweighed by the litigation and related costs of product liability.⁷

We discuss the influence of product liability on product safety in Part II of the Article. To assess this effect, it is necessary to consider whether firms would have an incentive to make safe products even in the absence of product liability. One reason that firms might have such an incentive concerns market forces, namely that their sales may fall if their products harm consumers or are viewed as unduly risky. We document this phenomenon with a number of examples involving widely sold products and describe more generally how consumers might

claims in the EU in the last 10 years”); DAVID G. OWEN, PRODUCTS LIABILITY LAW § 1.4 (2005) (“[O]ver the last decade or two of the twentieth century, and the early years of the current century, modern products liability law and litigation has begun to spread its wings around the world.”); Thomas Leo Madden, *An Expansion of Japan’s Product Liability Law*, 5 PAC. RIM L. & POL’Y J. 299 (1996) (describing a 1994 law that enhanced the Japanese product liability regime); Mathias Reimann, *Liability for Defective Products at the Beginning of the Twenty-First Century: Emergence of a Worldwide Standard?*, 51 AM. J. COMP. L. 751, 756-60 (2003) (“[P]roduct liability has established itself in the vast majority of economically developed countries, that it is recognized as a special subject in many other parts of the world, and that there is a tendency for it to spread further. In short, it is fast becoming a global phenomenon.”); Craig S. Smith, *Chinese Discover Product-Liability Suits*, WALL ST. J., Nov. 13, 1997, at B1 (“In the three years since China’s consumer-rights laws took effect, liability lawsuits have risen to more than half a million annually.”).

⁶ See *infra* Part IX.B.

⁷ Our benefit-cost evaluation of product liability follows in the tradition of analyzing tort law from a social welfare-maximizing or instrumental perspective. For a prominent early example of this economic framework, see GUIDO CALABRESI, *THE COSTS OF ACCIDENTS: A LEGAL AND ECONOMIC ANALYSIS* 24-33 (1970); see also WILLIAM M. LANDES & RICHARD A. POSNER, *THE ECONOMIC STRUCTURE OF TORT LAW* (1987); STEVEN SHAVELL, *ECONOMIC ANALYSIS OF ACCIDENT LAW* (1987). As is conventional in such analysis, we do not consider notions of fairness, on which individuals may place value and which thus should in principle be incorporated into social welfare. See generally LOUIS KAPLOW AND STEVEN SHAVELL, *FAIRNESS VERSUS WELFARE* (2001). As is also conventional in economic analysis, we do not take distributional considerations into account. One reason is that redistribution may be difficult to accomplish when, as here, the relevant parties are in a market relationship — for then an attempt to redistribute income from manufacturers to consumers by imposing liability on manufacturers could be undone by price increases. See generally Richard Craswell, *Passing On the Costs of Legal Rules: Efficiency and Distribution in Buyer-Seller Relationships*, 43 STANFORD L. REV. 361 (1991). In addition, it can be argued that legal rules should not be designed in order to redistribute income because of the superiority of the income tax and transfer system for that purpose. See generally Louis Kaplow & Steven Shavell, *Why the Legal System is Less Efficient than the Income Tax in Redistributing Income*, 23 J. LEGAL STUD. 667 (1994).

learn about product risks. A second reason that firms might take steps to enhance the safety of their products is that they may be subject to safety regulations. Such regulations apply to a broad range of products, including pharmaceuticals, food, automobiles, and household appliances. To the extent that market forces and regulation cause firms to make safe products, the potential for product liability to further improve product safety is reduced. We suggest that these factors are particularly important for many widely sold products, and therefore could often significantly lower the degree to which product liability adds to product safety. In fact, when we review empirical studies of several widely sold products, we find that for each product examined, product liability fails to lead to a measurable increase in product safety.

We address the second benefit of product liability, that it raises product prices and thus can usefully signal product risks to consumers, in Part III. We explain that the price signalling effect yields a benefit only to the extent that consumers misperceive product risks. We also discuss complicating factors that may enhance or diminish the price signalling benefit.

We evaluate the third benefit of product liability, that it compensates victims for their injuries, in Part IV of the Article. We emphasize there that product liability promotes the compensation goal only incrementally, because insurance coverage (including public compensation programs) is widespread. In other words, individuals frequently would be compensated for some, and possibly all, of their product-related losses even in the absence of the product liability system. This is not to deny, of course, that many individuals do not have insurance or do not have sufficient coverage. We also explain that product liability actually tends to work counter to the compensation goal because, by including damages for pain and suffering, it effectively forces individuals to purchase insurance coverage for a category of losses for which they do not wish to be insured.

In Part V we discuss the legal and related costs of the product liability system. Studies demonstrate that for every dollar that victims of product accidents receive through the liability system, average legal expenses incurred exceed a dollar. In addition to the direct legal expenses of the product liability system, there are indirect costs generated by the effect of legal expenses

on product prices. Specifically, because firms must raise the prices of their products to cover their legal costs, consumers are undesirably discouraged from purchasing goods.⁸

We come to the major conclusion of the Article in Part VI, that the case favoring product liability is weak for products for which market forces and regulation are strong, because the benefits of product liability are then likely to be outweighed by its costs. We suggest that this conclusion is most applicable in the domain where the use of product liability is most prominent — for widely sold products such as drugs and automobiles. The main reason is that the influence of market forces and regulation on product safety tends to be significant for products that are widely sold, because problems with these products commonly attract the attention of consumers and regulators. For products that are not widely sold, however, market forces and regulation will usually be less effective and, as a consequence, product liability is more likely to be socially advantageous.⁹

In Part VII we discuss the contrast between our skeptical assessment of product liability for widely sold products and the broad, though not universal, endorsement of product liability in judicial opinions, academic writing, and the media. The generally favorable view of product liability held by others stems from the belief that such liability satisfies basic notions of fairness and yields significant product safety and compensation benefits. But this judgment does not recognize that the benefits of product liability are incremental in nature (only the enhancement to the level of product safety already generated by market forces and regulation, and only the addition to the level of compensation already yielded by insurance coverage, should be counted). Furthermore, the proponents of product liability ordinarily ignore the high litigation costs that it generates. We note as well that the critics of product liability make similar errors in assessing its benefits and costs.

Finally, in Part VIII, we compare product liability to the liability of firms to strangers — that is, to individuals injured by firms who are not their customers. Examples of such victims are fishermen harmed by an oil spill or homeowners injured by an explosion at a chemical factory. Here market forces do not operate to penalize firms for the harm that they do because it

⁸ Additionally, we explain that compensation for nonmonetary losses further discourages consumption and results in consumer welfare losses.

⁹ Our analysis of product liability also applies to the liability of providers of services, such as physicians and accountants, because it does not matter to our logic that what is purchased is a service rather than a product.

is not their customers who are the victims of the harm. Accordingly, the case for liability of firms to strangers may be much stronger than that for product liability.

Before proceeding, we want to observe that our evaluation of product liability is not premised on a commonly encountered belief that juries and courts misapply the law or too liberally assess damages.¹⁰ Our analysis is consistent with the assumption that product liability law is applied in an unbiased manner and that damages are measured without systematic error. We nonetheless conclude that the use of product liability is problematic in many circumstances because, even if correctly implemented, it might not generate social benefits that are worth its costs.

II. The Safety Benefit of Product Liability

In this Part we first discuss how market forces and regulation might reduce product risks. We then investigate the safety benefit of product liability, namely, the extent to which it adds to the level of safety already generated by market forces and regulation.¹¹

A. Incentives to Reduce Product Risk Generated by Market Forces

Market forces can provide firms with an incentive to improve product safety, for if consumers believe that the risk of a product is high, they will either avoid buying the product or will not pay as much for it as they otherwise would. There are numerous instances in which consumers have dramatically reduced their purchases of a product after learning of dangers associated with its use. For example, Tylenol's market share fell from 37 percent to 7 percent in 1982 following the deaths of seven individuals who had ingested Tylenol capsules contaminated with cyanide.¹² Odwalla's sales of natural juices declined by 90 percent in 1996 after one person

¹⁰ See PETER W. HUBER, *LIABILITY: THE LEGAL REVOLUTION AND ITS CONSEQUENCES* (1988) (arguing that unduly high awards in products liability cases, and tort cases more generally, chill innovation and overdeter socially desirable behavior); MICHAEL S. GREVE, *HARM-LESS LAWSUITS? WHAT'S WRONG WITH CONSUMER CLASS ACTIONS* (2005) (claiming that current the current products liability system results in double recoveries and excessive deterrence); ERIC HELLAND & ALEXANDER TABARROK, *JUDGE AND JURY: AMERICAN TORT LAW ON TRIAL* (2006) (maintaining that unwarranted awards are often given to plaintiffs, and that judges and juries often exhibit bias in making such awards).

¹¹ In other words, we study the effects and desirability of product liability against the background of the world as we find it, including the way in which market forces and regulation now operate. One could instead examine product liability against the background of an ideal world, in which, for example, market forces might be supplemented with government-provided information about product risks and safety regulation might be more extensive. Such an undertaking is beyond the scope of this Article.

¹² See Eric Pace, *Rushing Into the Tylenol Gap*, N.Y. TIMES, Nov. 6, 1982, at A37.

died and sixty were made ill from consuming some of its products containing E. Coli bacteria.¹³ And Audi's automobile sales dropped by 69 percent after reports in the mid-1980s of problems of sudden acceleration of its vehicles.^{14,15}

When, however, the harms at issue are not as salient as the ones just mentioned, market responses will tend to be weaker. If the losses are low, if they occur infrequently, if they are difficult to trace to a product, or if firms attempt to conceal them, then the harms will be noticed less often by consumers. Hence, in many circumstances firms might experience only a modest, or possibly no, decline in sales as a result of selling products that harm consumers.

While the demand for a firm's product might decline in response to detrimental information about product risks, it is also possible that demand would rise in response to favorable safety information. Volvo, for example, has been able to charge a premium for its automobiles, apparently because they have performed especially well in crash tests and have included safety features unavailable from other manufacturers.¹⁶ Cirrus Design became the best-

¹³ See Warren King, *Another Toddler Treated for E. Coli*, SEATTLE TIMES, Nov. 15, 1996, at B3; Brenda L. Moore, *Time May be Right to Take Bite of Odwalla*, WALL ST. J., Aug. 19, 1998, at CA1.

¹⁴ See A. Stertz Bradley, *U.S. Study Blames Drivers for Sudden Acceleration*, WALL ST. J., Feb. 2, 1989, at B1 ("Within the past three years, fears that Audis were prone to sudden acceleration cut U.S. sales of the models from an all-time high of 74,000 units in 1985 to just 22,943 last year.").

¹⁵ There are numerous other examples in which sales declined dramatically after consumers learned that a product was especially risky. See, e.g., RICHARD N.L. ANDREWS, *MANAGING THE ENVIRONMENT, MANAGING OURSELVES* 214 (2006) (sales of cranberries dropped by two thirds after discovery that some cranberries had been sprayed with a potentially toxic pesticide); GARY DAVIES ET. AL., *CORPORATE REPUTATION AND COMPETITIVENESS* 111 (2003) (noting that Perrier's U.K. market share fell from 32% to 17% in the month following an announcement of benzene contamination); RONALD D. MICHMAN & EDWARD M. MAZZE, *THE FOOD INDUSTRY WARS* 141 (1998) (noting that Gerber's market share declined from 72% to 52% in 1986 after regulators in several states found bits of glass in Gerber peaches); Val Brickates Kennedy, *Guidant Reports Lower Sales, Profits*, WALL ST. J. MARKETWATCH, Jan. 27, 2006 (sales of Guidant defibrillators fell 19% following product recalls); *Business Notes Autos*, TIME, Aug. 15, 1988 (reporting a 63% decline in sales of the Suzuki Samurai after a Consumer Reports article claimed that it was unsafe to drive); Stephen Foleyin, *Mattel Sales Hit by 'Toxic Toy' Recalls*, INDEPENDENT (London), Oct. 16, 2007, at 36 (reporting that Mattel suffered a 19% decline in sales associated with lead-tainted toys); Suresh Govindaraj et al., *Market Overreaction to Product Recall Revisited—The Case of Firestone Tires and the Ford Explorer*, 23 REV. QUANTITATIVE FIN. & ACCT. 31, 40 (2004) (noting an "immediate drop of 50 percent . . . in the worldwide sales of Firestone tires" in the wake of their recall); *Jack in the Box's Worst Nightmare*, N.Y. TIMES, Feb. 6, 1993, at S1 (reporting that Jack in the Box's sales dropped sharply after an E. Coli outbreak was linked to its food products).

¹⁶ See Chuck Squatriglia, *Volvo Promises an Injury-Proof Car by 2020*, WIRED, May 2, 2008, available at <http://www.wired.com/autopia/2008/05/volvo-promises/> ("Volvo's long been at the forefront of vehicle safety. It invented three-point safety belts and was the first to use crumple zones, side-impact airbags and rear-facing child seats. In a 2006 survey of 500 consumers conducted by Accenture, more than two-thirds of respondents ranked safety as the most important technology to include in their vehicles, 70 percent were willing to shell out extra for it.

selling manufacturer of four seat, single engine aircraft, in significant part because of its innovative provision of ballistic parachutes to lower its planes to safety in the event of loss of control.¹⁷ Sellers of bottled water are able to charge about 800 times more than the price of tap water¹⁸ because consumers perceive bottled water to be more pure.¹⁹

The degree to which consumers will punish manufacturers for unsafe products or reward them for safe products depends on the information that consumers have about product safety, and they have many sources of such information available to them.²⁰ In 2007, for example, the top ten newspapers in the United States, with a total paid circulation of close to ten million people, published an estimated 2,900 articles related to product safety.²¹ General news magazines, such

Volvo's long been the best at marketing safety, and a recent poll by Consumer Reports found 77 percent of respondents consider Volvo the safest car on the road."); William Boulding & Devavrat Purohit, *The Price of Safety*, 23 J. CONSUMER RES. 12, 24 (1996) (finding that Volvo is able to charge one of the highest premiums for its cars).

¹⁷ *Taking the Fear Out of Flying: Cirrus Sales Soaring to the Stratosphere*, NODAK NEIGHBOR, Nov.-Dec. 2005, at 4 ("The parachute innovation has Cirrus nipping at the tail wings of long-time industry leader Cessna."); Austin Weber, *Cirrus Soars With Composites: Big Ideas Revolutionize Small Plane Production*, AEROSPACE ASSEMBLY, Sept. 1, 2008 (noting that the Cirrus SR22 is the "world's best-selling aircraft," in part because of its reputation for being, "safe and easy to fly" and in part because Cirrus "pioneered the unique concept of a plane with a parachute").

¹⁸ *More Consumers Turn On To Tap Water to Trim Costs*, WALL ST. J., Jun. 18, 2008 (finding that a year's worth of bottled water purchased from Costco would cost over \$400, while the same amount of tap water would cost \$0.51).

¹⁹ Branden B. Johnson, *Comparing Bottled Water and Tap Water: Experiments in Risk Communication*, 13 RISK: HEALTH, SAFETY & ENV'T 69, 81 (2002) (finding that 43% of respondents thought that bottled water was more safe than tap water, while only 3% of respondents thought the reverse). It is possible that individuals' perceptions of the safety of bottled water are exaggerated, but this example still demonstrates that consumer beliefs about the safety of a product can strongly influence their willingness to pay for it.

²⁰ The better is consumer information about product risks, the better will be the market incentives acting on manufacturers to improve safety. In principle, if consumers possess perfect information, any risk-reducing precaution whose cost is less than its value will be taken by a manufacturer. For instance, if consumers understand that a \$25 safety guard for a chain saw will reduce accident losses by \$100, a manufacturer will include the safety guard with its chain saws; consumers will gladly pay an extra \$25 for the guard because it will reduce their losses by more. Of course, consumers are not perfectly informed in fact, so that market incentives generally will lead to less than optimal safety. A further reason that market forces may not operate ideally is due to the ownership of first-party accident insurance by consumers. To the extent that such insurance covers their losses, consumers will not value risk reduction and thus not reward manufacturers for it. This point was noted by CALABRESI, *supra* note 7, at 144-47, 248, and developed by Jon D. Hanson and Kyle D. Logue, *The First-Party Insurance Externality: An Economic Justification for Enterprise Liability*, 76 CORNELL L. REV. 129, 159-68 (1990).

²¹ The ten most widely read newspapers in 2007 had a total paid daily circulation of 9.56 million. In order of circulation, they were *USA Today*, *The Wall Street Journal*, *The New York Times*, *The Los Angeles Times*, *The New York Daily News*, *The New York Post*, *The Washington Post*, *The Chicago Tribune*, *The Houston Chronicle*, and *Newsday*. See Audit Bureau of Circulations, E-Circ Database of Newspapers, <http://abcas3.accessabc.com/ecirc/newsform.asp>. A LexisNexis search of these newspapers for the word "product"

as *Newsweek* and *U.S. News & World Report*, frequently include articles about product safety,²² as do numerous specialized magazines, such as *Motor Trend* and *Guns & Ammo*.²³ Moreover, *Consumer Reports* tests a broad range of products and evaluates their risks.²⁴ The subscriber base of these magazines is about 47 million individuals.²⁵ Daily television news programs report

within five words of the words “safety,” “danger,” or “injure,” or the words “accident” or “defect” along with the words “injure,” “danger,” or “hurt” returned 1,458 articles published in the six month period between April 1, 2007, and September 30, 2007.

²² LexisNexis search for the keywords “dangerous,” “consumer,” “product,” “safety,” and “injury” in *Newsweek* returned over 100 articles for the calendar year 2007, including articles on the danger of all terrain vehicles (ATVs), manufactured goods from China, and salt. See Jennifer Barrett, *Hold The Salt, Please*, NEWSWEEK, Dec. 24, 2007, at 62; Melinda Liu, *Unsafe at Any Speed: The Downside of China’s Manufacturing Boom: Deadly Goods Wreaking Havoc at Home and Abroad*, NEWSWEEK INT’L, July 16, 2007, at 18; Julie Scelfo, *Accidents Will Happen . . . : ATVs Are Cool to Ride, But Thousands of Kids Are Getting Hurt, and Some Are Dying*, NEWSWEEK, May 14, 2007, at 59. A similar search in *U.S. News & World Report* also returned over 100 responses, including articles on the safety of supermarket food, medicines, and pet food. See Nancy Shute, *Are Your Drugs Safe?*, U.S. NEWS & WORLD REP., Oct. 15, 2007, at 61; Nancy Shute, *Better Safe Than Sorry*, U.S. NEWS & WORLD REP., May 28, 2007, at 67 (reporting on the dangers of certain supermarket foods); Adam Voiland, *A Human Connection?*, U.S. NEWS & WORLD REP., May 14, 2007, at 39 (reporting on contaminated pet food).

²³ According to the Audit Bureau of Circulations, there are 40 specialized sports magazines (including *Ski Magazine*, *Scuba Diving*, and *Climbing*), 35 fishing or hunting magazines (including *American Hunter*, *Guns And Ammo*, and *Game and Fish Magazine*), 43 automotive magazines (including *Motor Trend* and *Car And Driver*), 11 boating or yachting magazines (including *Boating*), and 4 aviation magazines (including *Flying*) in regular circulation. See Audit Bureau of Circulations, E-Circ Database of Consumer Magazines, <http://abcas3.accessabc.com/ecirc/magform.asp> (last visited June 9, 2009). These magazines frequently include items concerning product safety, product malfunctions, and recalls. See, e.g., *Bailout Bottles*, SCUBA DIVING MAGAZINE, Oct. 19, 2006, <http://www.scubadiving.com/gear/bags/article2679> (rating several emergency air supply bottles for scuba divers); *Gear: Bindings*, SKI MAGAZINE, Sept. 2005, <http://www.skinet.com/skinet/gear/article/0,26908,1091807,00.html> (discussing safety features of ski bindings); *Smith & Wesson Issues Product Safety Warning and Recall Notice*, SHOOTING TIMES, Sept. 21, 2006, http://www.shootingtimes.com/swpr_092206/.

²⁴ For instance, a search of the print edition of *Consumer Reports* returned 141 articles containing the word “safety” in the calendar year 2007, including articles on the safety of medical devices, vaccines, and automobile tires. See *HPV Vaccines: Beyond the Hype*, CONSUMER REP., Oct. 2007, at 47 (evaluating the benefits and costs, including the safety, of the HPV drug Gardasil); *Medical Devices: Problems on the Rise*, CONSUMER REP., Dec. 2007, at 53 (noting increased incidence of hospitalizations associated with failed medical devices); *Tires: Big Grippers*, CONSUMER REP., Nov. 2007, at 58 (rating automobile tires where, “[o]verall scores in our Ratings are a weighted average for summer and all-season UHP tires emphasizing safety-related characteristics such as braking, handling, and hydroplaning.”).

²⁵ According to the Audit Bureau of Circulations, the total paid circulations for *Newsweek*, *U.S. News and World Report*, and *Time* during the six-month period ending December 31, 2008 were approximately 2.7 million, 1.58 million, and 3.36 million, respectively. *Motor Trend* had a total paid circulation of approximately 1.12 million, while *Guns & Ammo* had a total paid circulation of 447,945. The total circulation for the special interest magazine categories identified *supra* note 23 was approximately 33.57 million. See Audit Bureau of Circulations, E-Circ Database of Consumer Magazines, <<http://abcas3.accessabc.com/ecirc/magform.asp>> (last visited June 8, 2009). *Consumer Reports* magazine, ConsumerReports.org, and the newsletters *Consumer Reports on Health* and *Consumer Reports Money Adviser* have combined subscriptions of more than 8 million. See ConsumerReports.org,

on major product defects and accidents, and feature news programs, such as *60 Minutes* and *20-20*, often include segments on product problems.²⁶ The combined viewership of the three network evening news programs, *Fox News*, and *CNN* exceeds 25 million people,²⁷ and that of *60 Minutes* and *20-20* is approximately 18 million.²⁸ The Internet also allows consumers to easily locate evaluations of the safety of most widely sold products,²⁹ and many government agencies provide evaluations of product risks.³⁰

Our Mission, <http://www.consumerreports.org/cro/aboutus/mission/overview/index.htm> (last visited June 8, 2009). Of course, there is some overlap among the subscribers of the magazines discussed in this note.

²⁶ See, e.g., *Consumer Product Safety Commission Warns Parents to Beware of Dangerous Toys* (CBS television broadcast Nov. 20, 2007) (covering lead levels in popular toys, including Dora the Explorer and Spongebob Squarepants); *60 Minutes: Is Your Car Safe?* (CBS television broadcast June 11, 1978) (covering problems with the Ford Pinto's gas tank); *60 Minutes: Testing, Testing, Testing; Weapons are the Only Manufactured Consumer Products Not Subject to Safety Inspections* (CBS television broadcast Mar. 20, 1994) (covering handgun safety); *20/20: After the Crash* (ABC television broadcast July 16, 1999) (reporting on automobile gas tanks exploding due to design defects); *20/20: Toys in Trouble?* (ABC television broadcast Nov. 13, 1998) (covering the presence of the possibly harmful chemical phthalate in soft plastic toys).

²⁷ In 2008, the viewership of the ABC evening news program averaged 8.1 million, that of CBS averaged 6.1 million; and that of NBC averaged 8.6 million. THE PROJECT FOR EXCELLENCE IN JOURNALISM, THE STATE OF THE NEWS MEDIA: AN ANNUAL REPORT ON AMERICAN JOURNALISM, <http://www.stateofthemediamedia.org/2009/index.htm> (follow "Network TV Audience" hyperlink) (last visited June 9, 2009). The average primetime audiences in 2008 of Fox News was 2.02 million and that of CNN was 1.05 million. THE PROJECT FOR EXCELLENCE IN JOURNALISM, THE STATE OF THE NEWS MEDIA: AN ANNUAL REPORT ON AMERICAN JOURNALISM, <http://www.stateofthemediamedia.org/2009/index.htm> (follow "Cable TV" hyperlink) (last visited June 9, 2009).

²⁸ In 2008, the audience of *60 Minutes* averaged 11.9 million, and that of *20-20* averaged 6.1 million. THE PROJECT FOR EXCELLENCE IN JOURNALISM, THE STATE OF THE NEWS MEDIA: AN ANNUAL REPORT ON AMERICAN JOURNALISM, <http://www.stateofthemediamedia.org/2009/index.htm> (follow "Network TV News Magazines" hyperlink) (last visited June 9, 2009).

²⁹ One way to find information about the safety of a particular product is to search for it using Google. For instance, a consumer can find data on the safety of the Toyota Tundra truck by entering the search terms, "safety toyota tundra 2008" into Google. The results include the Insurance Institute for Highway Safety's test results for the Tundra. IIHS-HLDI: Toyota Tundra, <http://www.iihs.org/ratings/ratingsbyseries.aspx?id=444> (last visited Feb. 9, 2008). A Google search for "bike helmet safety" leads to, among other sites, the Bicycle Safety Helmet Institute, which provides ratings of bicycle helmets. Bicycle Helmet Safety Institute, <http://www.helmets.org> (last visited Feb. 9, 2008). Another way to obtain product safety information is to examine the web sites of organizations that address this topic. See, e.g., Center For Science in the Public Interest, <http://www.cspinet.org/> (last visited Feb. 17, 2008) (evaluating food safety); Consumeraffairs.com, <http://www.consumeraffairs.com/> (last visited Feb. 17, 2008) (supplying information about product recalls); Consumers Union, <http://www.consumersunion.org/> (last visited Feb. 17, 2008) (assessing the safety of automobiles, household appliances, and many other products); Flight Safety Foundation: Aviation Safety Network, <http://aviation-safety.net/database/> (last visited June 11, 2009) (providing aircraft safety incident data, including by aircraft type); Insurance Institute for Highway Safety, <http://www.iihs.org/> (last visited Feb. 17, 2008) (providing crash test ratings for vehicles); W.A.T.C.H. World Against Toys Causing Harm, <http://www.toysafety.org/index.html> (last visited Feb. 19, 2008) (reporting on toy safety).. Another source of safety information is websites of news outlets. See, e.g., Consumer Watch – The Early Show News and Video at CBS.com, <<http://www.cbsnews.com/sections/earlyshow/living/ConsumerWatch/main500369.shtml>> (last visited Feb. 17, 2008) (providing advice on consumer products, including articles about product safety); Motor Trend

Obviously, consumers will only be exposed to a small fraction of this information due to constraints on their time. Furthermore, individuals might not properly evaluate the information that they do have about product risks because they are subject to various cognitive biases.³¹ Hence, the availability of extensive information about product risks does not necessarily imply that consumers will be well informed about these risks.

Consumers should have a relatively good assessment, however, of the risks of many widely sold products. A primary reason is that the media and regulators have naturally strong incentives to identify and publicize the risks of such products. If there is a safety problem with a popular drug or an automobile, tens of thousands of individuals could be affected, which the

Buyer's Guide, New Car Safety & Crash Test Ratings, http://www.motortrend.com/new_cars/safety/ (last visited Feb. 17, 2008) (reporting vehicle safety and crash test ratings); New York Times Health News, <http://health.nytimes.com/pages/health/> (last visited Feb. 17, 2008) (supplying health care news, including articles on drug safety); Wall Street Journal Auto News, http://online.wsj.com/public/page/autos_main.html?mod=hpp_us_autos (last visited Feb. 17, 2008) (reviewing cars and motorcycles, including their safety). An additional source of safety information about products is the websites of specialty organizations and user groups. See, e.g., Aircraft Owners and Pilots Association: Air Safety Foundation, http://www.aopa.org/asf/publications/subject_index.html#reviews (last visited June 11, 2009) (providing aircraft reviews); CarGurus.com, <http://www.cargurus.com/> (last visited Feb. 17, 2008) (evaluating new and used cars, including their safety); WebMD Health – Drug Index, <http://www.webmd.com/drugs/index-drugs.aspx>? (last visited Feb. 17, 2008) (supplying safety information for over the counter and prescription drugs).

³⁰ For example, the National Highway Traffic Safety Administration (NHTSA), the Consumer Product Safety Commission (CPSC), and the Food and Drug Administration (FDA) furnish safety information to the public about a broad range of products. See Food and Drug Administration Medical Product Safety Information, <http://www.fda.gov/medwatch/safety.htm> (last visited Nov. 30, 2008) (supplying safety information about drugs approved by the FDA, as well as a list of medical device recalls); National Highway Traffic Safety Administration, <http://www.safercar.gov/> (last visited Nov. 30, 2008) (providing ratings of tire safety, crash test results, rollover ratings, and a database of recalls); U.S. Consumer Product Safety Commission, CPSC Publications, http://www.cpsc.gov/cpscpub/pubs/pub_idx.html (last visited Feb. 18, 2008) (offering safety assessments of numerous products, including bicycles, children's furniture, and power equipment).

³¹ See, e.g., Christine Jolls, Cass R. Sunstein & Richard Thaler, *A Behavioral Approach to Law and Economics*, 50 STAN. L. REV. 1471 (1998) (discussing common cognitive biases); Matthew Rabin, *Psychology and Economics*, 36 J. ECON. LITERATURE 11, 24-31 (1998) (same). See generally, DANIEL KAHNEMAN, PAUL SLOVIC, & AMOS TVERSKY, JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES (1982). When individuals misperceive risks, they sometimes underestimate and sometimes overestimate them. See, e.g., Sarah Lichtenstein et al., *Judged Frequency of Lethal Events*, 4 J. EXPERIMENTAL PSYCHOL. 551 (1978) (finding that individuals systematically overestimate the frequency of death from unlikely events and underestimate the frequency of death from likely causes); Paul Slovic, Baruch Fischhoff & Sarah Lichtenstein, *Facts and Fears: Understanding Perceived Risk*, in SOCIETAL RISK ASSESSMENT: HOW SAFE IS SAFE ENOUGH? (Richard Schwing & Walter Albers eds., 1980) (finding that individuals accurately predicted the number of annual fatalities due to home appliances, under-reported those due to X-rays, and over-reported the danger of vaccinations); Michael Wogalter, Douglas Brems & Elaine Martin, *Risk Perception of Common Consumer Products: Judgments of Accident Frequency and Precautionary Intent*, 24 J. SAFETY RES. 97, 100 (1993) (reporting that individuals overestimate low-probability product risks and overestimate high-probability product risks).

media would be eager to report — as our examples of Tylenol and Audi automobiles illustrate³² — and which would probably attract the attention of regulators.

The influence of market forces on product safety therefore is likely to be particularly important for widely sold products. Moreover, firms that sell products in large volume have more to lose if consumers think that their products are dangerous and more to gain if consumers believe that their products are safe, giving them a greater incentive to invest in product safety. Additionally, large firms tend to be especially concerned about their reputation for safety because they often offer multiple product lines and have long time horizons.

Conversely, consumer knowledge about product risks should be less good for products that are not widely sold, because media and regulatory interest in these products will be lower. For instance, problems with space heaters made by a local manufacturer and sold in limited volume would be unlikely to receive more than brief mention by the media or to be noticed by regulators. Hence, market forces usually will be less effective for products that are not widely sold and the companies that sell these products will tend to have weaker incentives to increase their safety.

The preceding observations about products that are, and are not, widely sold only describe central tendencies. It could be that consumers do not have good information about a widely sold product, especially if, as we noted above, the harm it causes is small, difficult to attribute to its source, or occurs many years after its use. Thus, market forces might not induce the manufacturer of a widely sold product to improve its safety. It could also be the case that consumers do have good information about a product that is not widely sold. The customers of a neighborhood restaurant, for instance, might be expected to learn about a systematic problem of food poisoning there by word of mouth. Thus, market forces could lead a seller of a product that is sold to a limited number of individuals to take care to reduce the risk of harm.

B. Regulation of Product Risk

In addition to market forces, government regulation affects the safety of a wide range of products, and we now briefly describe several areas of regulation.³³

³² See *supra* notes 12 and 14.

³³ See generally STEPHEN BREYER, REGULATION AND ITS REFORM (1982); CASS R. SUNSTEIN, RISK AND REASON (2002); W. KIP VISCUSI ET AL., ECONOMICS OF REGULATION AND ANTITRUST 789-826 (4th ed. 2005).

Automobiles. Automobile safety regulations are extensive in nature and include, for example, requirements regarding seat-belts, crashworthiness, fuel tank construction, and windshield and tire strength.³⁴ These requirements are primarily enforced by the National Highway Traffic Safety Administration,³⁵ whose annual budget exceeds \$830 million.³⁶ Firms are subject to sanctions for violating automobile safety regulations³⁷ and executives are potentially subject to criminal liability.³⁸

Pharmaceuticals. Pharmaceutical products must satisfy rigorous testing and labeling requirements that are overseen by the Food and Drug Administration.³⁹ The FDA's Center for Drug Evaluation and Research has a staff of approximately 3,000 employees⁴⁰ and an annual budget of about \$1.7 billion.⁴¹ New pharmaceuticals generally are subject to four phases of clinical trials to ensure that they are safe and effective.⁴² Prescription drugs must satisfy FDA

³⁴ See ROBERT W. CRANDALL ET AL., *REGULATING THE AUTOMOBILE* (1986); Murray L. Weidenbaum, *Regulation of the Automobile: Extensive and Growing*, EXECUTIVE SPEECHES, Dec. 1998, at 14. On the specific requirements mentioned in the text, see 49 C.F.R. §§ 571.101-.135 (crash avoidance), § 571.109 (tire strength, endurance, and dimensions), §§ 571.201-.224 (crashworthiness, including seat belt and windshield mounting requirements), and §§ 571.301-.304 (fuel system integrity and fire prevention).

³⁵ 49 U.S.C. §§ 322, 30111 (granting Secretary of Transportation power to prescribe motor vehicle safety standards); 49 C.F.R. § 1.50 (delegating authority to NHTSA administrator); see also 49 U.S.C. § 30166 (granting authority to conduct inspections and investigations as necessary to enforce motor vehicle safety regulations). For a detailed account of the development of NHTSA, see JERRY L. MASHAW & DAVID L. HARFST, *THE STRUGGLE FOR AUTO SAFETY* (1990).

³⁶ National Highway Traffic Safety Administration, NHTSA Budget Overview: FY 2007, available at <http://www.dot.gov/bib2008/bibpart07nhtsa.htm>.

³⁷ 49 U.S.C. § 30165(a)(1) (authorizing financial penalties of up to \$5,000 per violation).

³⁸ *Id.* § 30170(a) (authorizing an imprisonment sentence of up to fifteen years for falsifying or withholding information relating to motor vehicle safety violations that cause death or serious bodily injury).

³⁹ See FDA REGULATORY AFFAIRS: A GUIDE FOR PRESCRIPTION DRUGS, MEDICAL DEVICES, AND BIOLOGICS (Douglas J. Pisano & David Mantus eds., 2003); SUZANNE PARISIAN, *FDA INSIDE AND OUT* (2001); U.S. Food & Drug Safety Administration, Legislation, <http://www.fda.gov/opacom/laws/> (last visited June 1, 2009); see also ARTHUR A. DAEMMRICH, *PHARMACOPOLITICS: DRUG REGULATION IN THE UNITED STATES AND GERMANY* (2004).

⁴⁰ U.S. FOOD & DRUG ADMIN., FISCAL YEAR 2010 CONGRESSIONAL JUSTIFICATION 77 (2009), available at <http://www.fda.gov/downloads/AboutFDA/ReportsManualsForms/Reports/BudgetReports/UCM153508.pdf>.

⁴¹ *Id.*

⁴² See BERT SPILKER, *GUIDE TO CLINICAL TRIALS* xxii-xxiii (1984); National Institute of Health, FAQ: ClinicalTrials.gov – Clinical Trial Phases, <http://0-www.nlm.nih.gov.catalog.llu.edu/services/ctphases.html>; see also Brian Vastag, *New Clinical Trials Policy at FDA*, NATURE BIOTECHNOLOGY, Sept. 2006, at 1043.

labeling requirements and include information about their proper use.⁴³ Significant violations of FDA drug regulations are subject to fines and imprisonment.⁴⁴

Aircraft. Stringent aircraft safety standards, set by the Federal Aviation Administration (FAA), govern the manufacture,⁴⁵ maintenance,⁴⁶ and airworthiness⁴⁷ of all aircraft. Every accident involving a civil aircraft is investigated at the initiative of the National Transportation Safety Board.⁴⁸ Violations of aircraft regulations may result in seizure of noncompliant aircraft, civil penalties, and criminal sanctions.⁴⁹

Consumer products. Safety standards apply to numerous consumer products, such as toys, cigarette lighters, baby cribs, and household chemicals. These standards are developed and enforced by the Consumer Product Safety Commission, which is responsible for protecting the public against “unreasonable risks of injuries associated with consumer products.”⁵⁰ In addition

⁴³ See, e.g., Requirements on Content and Format of Labeling for Human Prescription Drug and Biological Products, 71 Fed. Reg. 3922 (Jan. 24, 2006) (reviewing and amending FDA regulations governing labeling requirements for prescription drug products) (now codified at 21 C.F.R. pts. 201, 314 & 601).

⁴⁴ 21 U.S.C. § 333(b) (authorizing fines ranging from \$250,000 to \$1,000,000 and imprisonment for up to ten years).

⁴⁵ 14 C.F.R. § 21.6 (requiring manufacturers of aircraft, aircraft engines, or propellers to obtain a special “type certificate”); *id.* §§ 21.121-.165 (requiring manufactures operating under type or production certificates to set up inspection, quality control, and testing systems).

⁴⁶ 14 C.F.R. §§ 43.1-.17 (requiring detailed inspection and maintenance records and that inspection and maintenance operations be performed by FAA-certified mechanics, repairmen, or air carrier operators).

⁴⁷ 14 C.F.R. §§ 23.1-39.27 (setting out detailed airworthiness requirements, including provisions for structure, weight distribution, speed, performance, roll and stability, force and torque limits, mechanics, and control systems); see also Federal Aviation Administration, Airworthiness Directives, <http://rgl.faa.gov/> (follow “Airworthiness Directives” hyperlink) (last visited June 1, 2009) (collecting airworthiness directives requiring special provisions for particular aircraft and parts).

⁴⁸ 49 U.S.C. § 1132(a)(1) (requiring NTSB to investigate each accident involving civil aircraft); National Transportation Safety Board, History and Mission, http://www.nts.gov/Abt_NTSB/history.htm (last visited June 1, 2009) (noting NTSB’s mission to investigate all U.S. civil aviation accidents). See generally U.S. GOV’T ACCOUNTABILITY OFFICE, REPORT TO CONGRESSIONAL REQUESTERS: NATIONAL TRANSPORTATION SAFETY BOARD 32-44 (Nov. 2006).

⁴⁹ 14 C.F.R. §§ 13.1-.29 (providing various enforcement measures for violations of FAA regulations).

⁵⁰ Consumer Product Safety Act, Pub. L. No. 92-573, §2(b)(1), 86 Stat. 1207 (codified at 15 U.S.C. § 2051(b)(2)) (establishing Consumer Product Safety Commission to protect the public “against unreasonable risks of injury associated with consumer products”). For a list of more than 15,000 consumer products regulated by the CPSC, see U.S. Consumer Product Safety Commission, Regulated Products, <http://www.cpsc.gov/businfo/reg1.html>.

to imposing civil fines for violations,⁵¹ the CPSC has the authority to order the recall of unsafe products.⁵²

Regulations of the type just noted have been found to have beneficially affected the safety of many products. For example, automobile safety standards have been determined to have significantly reduced the number of deaths due to collisions.⁵³ Similarly, the declining accident rate involving general aviation aircraft has been attributed in large part to FAA safety requirements.⁵⁴ There is evidence that safety regulation has been effective in reducing risk in other areas as well.⁵⁵

Safety regulation is likely to be more effective for widely sold products, such as automobiles, pharmaceuticals, and aircraft, than for products whose distribution is limited. One reason is that regulators will be more concerned about the risks of products sold in high volume, as mentioned in the previous section, and thus will tend to invest substantial effort in their regulation. A second reason is that regulators will obtain more information about a product's problems if many members of the public are using the product and suffering from its defects.

Of course, regulation will be far from perfect due to the limited knowledge of regulators, their budgetary constraints, and the possibility that they may be captured by the firms that they

⁵¹ 15 U.S.C. § 2069 (providing for civil penalties).

⁵² 15 U.S.C. § 2071 (providing for injunctive enforcement and seizure upon action brought by the Commission).

⁵³ See, e.g., ROBERT W. CRANDALL ET AL., REGULATING THE AUTOMOBILE 55-68 (1986) (conducting both time-series and cross-sectional statistical analyses and finding "a very large effect of the improved safety design of automobiles since 1966 upon occupant death rates"); John D. Graham, *Product Liability and Motor Vehicle Safety*, in THE LIABILITY MAZE: THE IMPACT OF LIABILITY LAW ON SAFETY AND INNOVATION 120, 182-83 (Peter W. Huber & Robert E. Litan eds., 1991) [hereinafter THE LIABILITY MAZE] (finding NHTSA regulation to be a main factor contributing to decrease in motor vehicle fatalities); Lloyd D. Orr, *The Effectiveness of Automobile Safety Regulation: Evidence from the FARS Data*, 74 AM. J. PUB. HEALTH 1384 (1984) (analyzing data from the Fatal Accident Reporting System for the years 1975 to 1978 and concluding that between 3,000 and 9,500 lives were saved by new automobile regulations).

⁵⁴ See U.S. GEN. ACCOUNTING OFFICE, GENERAL AVIATION: STATUS OF THE INDUSTRY, RELATED INFRASTRUCTURE, AND SAFETY ISSUES 8-9, 56-61 (2001) (reviewing numerous FAA initiatives that improve general aviation safety); Aircraft Owners and Pilots Association, *Is It Safe? GA's Safety Record*, <http://flighttraining.aopa.org/learntofly/safety/> (last visited June 11, 2009) (attributing an 86 percent decline in the accident rate per flying hour since 1950 largely to FAA regulations).

⁵⁵ See generally U.S. Consumer Product Safety Commission, Success Stories Index, <http://www.cpsc.gov/cpscpub/pubs/success/index.html> (last visited Mar. 28, 2009) (describing the safety benefits of regulation concerning, for example, cigarette lighters, cribs, hair dryers, and bicycles).

are responsible for overseeing.⁵⁶ Consistent with these observations, some studies have found regulation to be ineffective or of limited value in certain contexts.⁵⁷ Our point is not that regulation will serve as a general cure for product safety problems, but rather that it contributes in a significant way to reducing many product risks.

C. Risk Reduction Accomplished by Product Liability

Product liability is applied through three primary doctrines, as we noted above.⁵⁸ Under the design defect doctrine, a firm can be held liable for accidents caused by its product if the design of the product was defective, meaning, essentially, that a different design could have been employed that was safer and not excessively costly.⁵⁹ Under the manufacturing defect doctrine, a firm can be held liable for an accident if the particular unit that caused the accident was not manufactured according to the intended design.⁶⁰ Under the failure to warn doctrine, a firm can be held liable if it failed to provide a reasonable warning about the riskiness of the product.⁶¹

⁵⁶ See, e.g., Michael E. Levine, *Regulatory Capture*, in 3 THE NEW PALGRAVE DICTIONARY OF ECONOMICS AND THE LAW 267 (Peter Newman ed., 1998); Richard A. Posner, *Theories of Economic Regulation*, 5 BELL. J. ECON. MAN. SCI. 335 (1974) (reviewing versions of capture theory); Robert D. Tollison, *Regulation and Interest Groups*, in REGULATION: ECONOMIC THEORY AND HISTORY 59 (Jack C. High ed., 1991).

⁵⁷ See, e.g., W. Kip Viscusi, *Consumer Behavior and the Safety Effects of Product Safety Regulation*, 28 J.L. & ECON. 527, 531 (1985) (“The impact of current CPSC regulations is likely to be quite small, and even if the agency were much more active than it now is, it is doubtful whether there would be a dramatic impact on product safety. The absence of any stark shift in product safety after the advent of the CPSC is borne out by the accident trend data. . .”).

⁵⁸ See generally RESTATEMENT (THIRD) OF TORTS: PRODUCTS LIABILITY § 2 (1998); DAVID G. OWEN, PRODUCTS LIABILITY LAW §§ 1.3, 7.1-5 (2005); DOBBS, *supra* note 1, § 355.

⁵⁹ Design defect occurs when “the manufacturer’s design specifications . . . themselves create unreasonable risks. . . . [T]he test is whether a reasonable alternative design would, at a reasonable cost, have reduced the foreseeable risks of harm posed by the product” RESTATEMENT (THIRD) OF TORTS: PRODUCTS LIABILITY § 2 cmt. D (1998); see also RESTATEMENT (SECOND) OF TORTS § 398 (1965) (manufacturer is liable “for physical harm caused by his failure to exercise reasonable care in the adoption of a safe plan or design”). A “design defect occurs when the intended design of the product line itself is inadequate and needlessly dangerous.” DOBBS, *supra* note __, § 355, at 980. Because design defect cases concern an entire product line, if a defect is found, then “every unit in the same product line is potentially defective” and the manufacturer is liable for all harms caused by all products in the line. *Id.*

⁶⁰ The Restatement (Third) defines a manufacturing defect as “a depart[ure] from [the product’s] intended design even though all possible care was exercised in the preparation and marketing of the product.” RESTATEMENT (THIRD) OF TORTS: PRODUCT LIABILITY § 2 (1998); see also RESTATEMENT (SECOND) OF TORTS § 395 (1965) (“A manufacturer who fails to exercise reasonable care in the manufacture of a chattel. . . is subject to liability for physical harm caused to [those who are injured] by its lawful use in a manner and for a purpose for which it is supplied.”). Common examples include “products that are physically flawed, damaged, or incorrectly assembled.” RESTATEMENT (THIRD) OF TORTS: PRODUCT LIABILITY § 2 cmt. C (1998). A manufacturing defect is a “flaw in the manufacturing process, resulting in a product that differs from the manufacturer’s intended result.” *Brown v.*

Even though product liability would lower product risk in the absence of market forces and regulation, it will turn out to be superfluous if a desirable safety precaution has already been taken because of these two factors. Consider, for example, electronic stability control in automobiles, a feature that can reduce the risk of skidding and rollovers. Market pressures could lead to adoption of this feature if consumers appreciate its value. Alternatively, a regulator might require it. Hence, product liability might not be necessary to induce automobile manufacturers to adopt electronic stability control — and, indeed, market forces have played a role in stimulating this improvement.⁶²

It may happen, of course, that neither market forces nor regulation results in a beneficial reduction of risk for reasons that we discussed in sections A and B. Then, product liability may be efficacious. Consider a shield on a lawnmower that could prevent stones from being ejected by its cutting blades. Market forces would not induce manufacturers to employ the shield if consumers do not understand its benefits, and regulators might not require the shield for similar reasons. But the prospect of being found liable for a defectively designed lawnmower might induce manufacturers to include the shield.⁶³

Another reason that product liability could be effective is indirect, that product liability litigation may result in publicity about product problems and thereby enhance market forces and spur regulation. If adverse reactions to a drug would not come to the attention of the media or to

Superior Court, 751 P.2d 470, 474 (Cal. 1988). Unlike a design defect, a manufacturing defect “is a random failing or imperfection.” DOBBS, *supra* note 1, § 355, at 979.

⁶¹ A product is deemed “defective because of inadequate instructions or warnings when the foreseeable risks of harm posed by the product could have been reduced or avoided by the provision of reasonable instructions or warnings by the seller or other distributor . . . and the omission of the instructions or warnings renders the product not reasonably safe.” RESTATEMENT (THIRD) OF TORTS: PRODUCT LIABILITY § 2(c) (1998); *see also* RESTATEMENT (SECOND) OF TORTS § 388 (1965) (holding manufacturers liable for “fail[ing] to exercise reasonable care to inform [those for whose use the chattel is supplied] of its dangerous conditions or of the facts which make it likely to be dangerous”).

⁶² *See* Joseph B. White, *Car-Accident Deaths Fell in '08*, WALL ST. J., Feb. 10, 2009, at D8 (“More recently, auto makers have been going beyond what the law requires, because that is what consumers are demanding. The increasing use of stability controls and antirollover systems is an example. Electronic stability controls will be mandated on new vehicles by 2012, but many new vehicles have this technology today.”).

⁶³ Yet product liability will not necessarily be successful in taking up the slack left by market forces and regulation. Notably, in a product liability lawsuit a court might not recognize a safety precaution that is in fact cost effective, such as the shield for lawnmowers. This possibility is plausible because what would often lead the market and regulators to fail to recognize the value of a safety precaution — lack of information about its risk-reducing effects — might also lead a court to fail to recognize its value.

regulators unless product liability suits were brought, then product liability could be responsible for lower sales of the drug and regulatory action to remedy its dangers.

The degree to which product liability reduces product risk is therefore an empirical question. In an early and widely cited study, George Priest examined accident statistics during the 1970s and 1980s, a period during which the scope of product liability law grew substantially and the volume of product liability litigation greatly increased, but he found no discernable effect of the enhanced product liability activity on accident rates.⁶⁴ A significant qualification concerning the interpretation of his finding, however, stems from the fact that the accident rates he considered were for general categories of accidents, and that the accidents were not necessarily product related. Hence, a small decline in product-related accident rates might not have been revealed by his data, but presumably a large decline would have had a measurable effect; we therefore find the Priest study suggestive.

Several studies of the effect of product liability in particular industries, which we summarize below, conclude that it has had no noticeable impact on product safety and thus tend to confirm Priest's findings. These studies also examine whether product liability affected accident rates during the period when the volume of product liability litigation increased in a marked way.

*General aviation aircraft.*⁶⁵ In separate investigations, Andrew Craig and Robert Martin assessed the influence of product liability on the safety of general aviation aircraft.⁶⁶ They observed that the liability and defense expenditures of manufacturers of these aircraft rose

⁶⁴ See George L. Priest, *Products Liability Law and the Accident Rate*, in *LIABILITY: PERSPECTIVES AND POLICY* 184, 187-94 (Robert E. Litan & Clifford L. Winston eds., 1988).

⁶⁵ General aviation aircraft are aircraft with a maximum seating capacity of fewer than twenty passengers and not engaged in regularly scheduled airline operations. General Aviation Revitalization Act of 1994, Pub. L. No. 103-298, § 2(c), 108 Stat. 1552. There were 231,607 general aviation aircraft in 2007. GEN. AVIATION MFR. ASS'N, 2008 GENERAL AVIATION STATISTICAL DATABOOK & INDUSTRY OUTLOOK 28, 30, 31 (2008), available at http://www.gama.aero/files/2008_general_aviation_statistical_databook__indust_499b0dc37b.pdf. They accounted for approximately 46% of all aviation fatalities in the United States. National Transportation Safety Board, Aviation Accident Statistics, <http://www.nts.gov/aviation/stats.htm>, at tbl.1 (last visited Oct. 18, 2008).

⁶⁶ Andrew Craig, *Product Liability and Safety in General Aviation*, in *THE LIABILITY MAZE: THE IMPACT OF LIABILITY LAW ON SAFETY AND INNOVATION* 456-77 (Peter W. Huber & Robert E. Litan eds., 1991); Robert Martin, *General Aviation Manufacturing: An Industry Under Siege*, in *THE LIABILITY MAZE: THE IMPACT OF LIABILITY LAW ON SAFETY AND INNOVATION* 478-99 (Peter W. Huber & Robert E. Litan eds., 1991).

sharply from the 1970s to the 1980s, growing approximately ten-fold.⁶⁷ However, the rate of fatal accidents did not display a decline that could be linked to the sharp increase in liability. The accident rate had been falling for many years, and in the years during and following the increase in liability, the accident rate did not decline more steeply; it actually fell less steeply.⁶⁸ Craig and Martin both concluded that the heightened liability did not seem to have reduced general aviation aircraft fatalities.⁶⁹

One reason that product liability might not be expected to affect the safety of general aviation aircraft very much is obvious — purchasers of aircraft have a pronounced incentive to obtain information about the safety records of the planes they will be flying. Hence, market forces would be likely to play a significant role in inducing aircraft manufacturers to provide safe airplanes. A second reason that product liability might result in little improvement to the safety of aircraft is that FAA regulation is extensive, as mentioned above.

Motor vehicles. John Graham employed regression analysis to determine whether product liability reduced motor vehicle fatalities during the period 1950-1988.⁷⁰ He found essentially no effect and concluded that if there is a beneficial influence of product liability on motor vehicle accidents, it is too small to be detected using aggregate data.⁷¹

⁶⁷ Craig, *supra* note 66, at 457 (reporting that liability costs per fatality rose from about \$17,000 in 1977 to about \$223,600 in 1985); Martin, *supra* note 66, at 484-85 (reporting that aviation industry's costs for defending against and paying product liability claims rose from \$24 million in 1976 to \$210 million in 1986).

⁶⁸ Martin used linear regression analysis to estimate the trend in fatal accident rates for general aviation from 1950-1969, before these accidents were subject to strict liability, and from 1970-1989, when a strict liability regime was in place. During the 20 years before strict liability, the fatality rate per 100,000 flying hours fell from 5.1 to 3.5, a decline of 1.6. During the 20 years after, the trend line was significantly flatter, showing a change from 2.55 to 1.4, a decline of 1.15. In other words, during the period of much greater liability, general aviation safety improved at a significantly slower rate. Martin, *supra* note 66, at 493-94. Craig performs a similar analysis, concluding that "the aggregate accident and liability cost data do not support the view that liability litigation has enhanced safety in this industry." Craig, *supra* note 66, at 457-58.

⁶⁹ Martin, *supra* note 66, at 493 ("These data indicate that strict liability has demonstrated no tendency to promote the safety of flight . . ."); Craig, *supra* note 66, at 457 ("Clearly, therefore, the aggregate accident and liability cost data do not support the view that liability litigation has enhanced safety in this industry."). See also Randy A. Nelson & James N. Drews, *Strict Liability and Product Safety: Evidence from the General Aviation Market*, 46 *ECON. INQUIRY* 425 (2008) (finding that strict product liability actually increased the accident rate of general aviation aircraft because it depressed sales of new planes and led individuals to fly older and more dangerous planes).

⁷⁰ Graham, *supra* note 53, at 182, 186-87.

⁷¹ To be precise, Graham found a positive association between liability and the accident rate (higher liability was associated with a higher accident rate), but the effect was not statistically significant. *Id.* at 182-83.

Graham also undertook five case studies of specific safety problems in motor vehicles and came to similar conclusions. The studies concerned defects related to the fuel tank of the Ford Pinto,⁷² gears in Ford vehicles,⁷³ the roll bar of the Jeep CJ,⁷⁴ airbags and seat belts,⁷⁵ and all-terrain vehicles.⁷⁶ Graham found that when safety problems arose, manufacturers responded primarily because of a concern about their reputations with consumers and because of pressure from regulators.⁷⁷ For example, after fuel tank explosions in the Ford Pinto were widely publicized, Ford voluntarily altered its fuel tank design and also made changes in response to increased regulatory requirements of NHTSA.⁷⁸ Significantly, Graham found that in all of the case studies product liability was not necessary for the stimulation of the specific safety improvements that were adopted.⁷⁹

Childhood vaccines. Richard Manning studied the effect of product liability on the diphtheria, pertussis, and tetanus (DPT) vaccine.⁸⁰ He found that the liability risk borne by manufacturers of DPT increased dramatically from the late 1970s to the late 1980s. Notably, the number of suits filed against such manufacturers in the four years 1978-1981 averaged three per

⁷² *Id.* at 128-37.

⁷³ *Id.* at 137-44.

⁷⁴ *Id.* at 144-55.

⁷⁵ *Id.* at 155-68.

⁷⁶ *Id.* at 168-80.

⁷⁷ *Id.* at 135-37, 144, 155, 163-64, 166, 178-80.

⁷⁸ Pinto-related injuries received significant media attention and negative publicity for Ford. *Id.* at 132, 136. After learning about the Pinto problems, NHTSA opened a formal investigation, *id.* at 132-34, and in 1977 it instituted stricter fuel tank standards, *id.* at 136. Ford also voluntarily modified the fuel tanks of pre-1977 Pintos not covered by the new requirements, and did so despite the fact that such behavior might be seen as an admission of guilt and could lead to greater liability, suggesting that its safety improvements were motivated by factors other than the threat of tort liability. *Id.* at 135-36.

⁷⁹ *Id.* at 180 (“In no case did we conclude that liability considerations were necessary to stimulate a specific safety improvement. In other words, other factors would eventually have led to the safety improvements.”); *id.* at 181 tbl.4-3. However, Graham noted that product liability might hasten safety improvements because the adverse publicity accompanying litigation enhances consumer information and stimulates market forces. *Id.* at 180-82.

⁸⁰ See Richard L. Manning, *Changing Rules in Tort Law and the Market for Childhood Vaccines*, 37 J.L. & ECON. 247 (1994).

year, whereas in the last three years of his data, 1985-1987, the average number of suits was 217. The safety of the DPT vaccine, however, did not change during this period.⁸¹

In a review of empirical research on the effect of product liability on product safety, which included discussion of several of the studies discussed above, Don Dewees, David Duff, and Michael Trebilcock concluded that product liability has not led to a decrease in product-related accidents, though they also noted some limitations of the data.⁸² In two subsequent surveys of empirical research on product liability, Mark Geistfeld, and Daniel Kessler and Daniel Rubinfeld, came to essentially the same conclusion.⁸³

The foregoing is a synopsis of the available empirical evidence concerning the effect of product liability on product safety. Although this evidence is comprised of a relatively limited literature, it suggests that product liability has had only a negligible influence on product safety, at least for widely sold products — the types of products examined in the industry studies we summarized. The explanation may be, as we have surmised, that market forces and regulation are particularly significant in generating safety investments by firms for widely sold products.⁸⁴

III. The Price Signalling Benefit of Product Liability

Product liability not only affects consumer well-being through its influence on product safety, but also through its effect on product prices. Specifically, because product liability causes prices to rise to reflect product risks, it may beneficially discourage consumers from

⁸¹ *Id.* at 259 (“... the DPT vaccine currently in use in this country is essentially the same today as it has been for many years.”) (footnote omitted).

⁸² DONALD N. DEWEES, DAVID DUFF & MICHAEL TREBILCOCK, *EXPLORING THE DOMAIN OF ACCIDENT LAW: TAKING THE FACTS SERIOUSLY* 202-05 (1996).

⁸³ Mark Geistfeld, *Products Liability*, in 1 *ENCYCLOPEDIA OF LAW AND ECONOMICS* § 11.11 (Michael Faure ed., 2d ed. 2009); Daniel P. Kessler & Daniel L. Rubinfeld, *Empirical Study of the Civil Justice System*, in 1 *HANDBOOK OF LAW AND ECONOMICS* 343 (A. Mitchell Polinsky & Steven Shavell eds., 2007); see also Richard S. Higgins, *Producers’ Liability and Product Related Accidents*, 7 *J. LEGAL STUD.* 299, 320 (1978) (finding that product liability increases the home accident fatality rate in states with high levels of education, but reduces it in states with low levels of education); Paul Rubin & Joanna Shepherd, *Tort Reform and Accidental Deaths*, 50 *J.L. & ECON.* 221 (2007) (estimating that product liability has increased accidental deaths by raising the prices of safety-enhancing goods and services).

⁸⁴ Whereas in this section we have considered the effect of product liability on accident rates, others have examined the influence of product liability on innovation, liability insurance premiums, product prices, product availability, and international competitiveness. See DEWEES, DUFF & TREBILCOCK, *supra* note 82, at 197-205; Kessler & Rubinfeld, *supra* note 83, at 363; Robert E. Litan, *The Safety and Innovation Effects of U.S. Liability Law: The Evidence*, 81 *AM. ECON. REV.: PAPERS & PROC.* 59 (1991).

buying risky products. As noted in the introduction, we refer to this as the price signalling benefit of product liability (we consider a related price distortion cost in Part V).

A. Price Signalling and Consumer Information

To explain the price signalling benefit more precisely, we begin with the fundamental proposition of economics that social welfare is maximized if consumers buy a product only when its value to them exceeds its costs. Suppose that a consumer places a \$15 value on having a widget, that the widget costs \$10 to produce, and that it causes \$1 of harm on average to its owner. Then social welfare will be raised if the consumer buys the widget because her value of \$15 exceeds the widget's total cost of \$11, comprised of both the direct production costs and the harm the widget causes. Conversely, if a consumer attaches only a \$9 value to the widget, social welfare would be lowered if the consumer bought it. Ideally, every consumer who values a widget more highly than \$11 would buy one, and every consumer who values a widget less highly than \$11 would not.

Now if consumers have good information about product risks, they will make the socially correct purchase decisions even in the absence of product liability. In the example, a widget will have a price of \$10 in a regime without product liability because firms will bear only their production costs. Yet if consumers know about the harmfulness of widgets, they will realize that they also will incur \$1 of losses per widget, so they will regard the effective price of a widget as \$11. Consequently, consumers will buy widgets if and only if the value they place on them exceeds \$11, which is the socially ideal outcome.

Suppose, however, that consumers underestimate product risks. Assume that they believe that the harm caused by a widget is \$.75 instead of the true value of \$1. Without product liability, the price of widgets will be \$10, as we just noted, but if consumers mistakenly believe that the harm they will bear per widget is \$.75, the effective price of a widget will be only \$10.75. As a result, a consumer might buy a widget when doing so is socially undesirable. For instance, a person for whom the value of a widget is \$10.85 will buy one even though its true cost is \$11; her purchase will result in a net loss to her of \$.15 (a loss she will not perceive because she underestimates the harm).

If consumers underestimate the harm from products, the imposition of liability on manufacturers will improve consumer purchases by raising product prices. In other words, there

will be a price signalling benefit. The widget price will rise to \$11 as a result of product liability, because manufacturers would incur not only \$10 in production costs per widget, but also \$1 in liability costs (to compensate consumers for their \$1 loss). Hence, with product liability, consumers will buy a widget only if they place a value on it that exceeds \$11, the socially desired outcome.

This price signalling benefit of product liability depends on the degree of consumer underestimation of product risks. In the example, consumers were assumed to underestimate the \$1 harm by \$.25. If instead they underestimated the harm by, say, \$.75, the price signalling benefit would be greater.

Product liability also can correct for consumer misperceptions if consumers overestimate product risks. In that case they will buy too little of a product in the absence of product liability. Suppose that they incorrectly believe that widgets cause \$1.50 of harm instead of \$1. They will therefore regard the price of a widget as \$11.50 instead of \$11 and buy too few widgets. With product liability, however, the price of a widget will be \$11 and consumers will again purchase widgets only if they value them more highly than \$11, the socially desired outcome.

In sum, by causing the prices of products to properly reflect accident risks, product liability will lead consumers to purchase the socially ideal quantities of risky products.⁸⁵ This price signalling benefit occurs regardless of whether consumers underestimate or overestimate product risk. But the magnitude of this benefit depends on the degree of consumers' misperception, with the benefit being smaller the better informed are consumers.

The discussion in this section presumed for simplicity that the price increase due to product liability reflected only the manufacturer's expected liability cost. More realistically, however, the price increase also will reflect litigation costs. We discuss these costs and their detrimental implication for price signalling in Part V.

B. Price Signalling and First-Party Insurance

In the preceding discussion we did not consider first-party accident insurance, but it is relevant to the decisions of consumers whether to purchase risky products.⁸⁶ If a consumer has

⁸⁵ See Steven Shavell, *Strict Liability versus Negligence*, 9 J. LEGAL STUD. 1, 12-17, 20-22 (1980); Michael Spence, *Consumer Misperceptions, Product Failure, and Producer Liability*, 44 REV. ECON. STUD. 561 (1977).

⁸⁶ In order to isolate the effects of first-party insurance, we assume in this section that consumers have perfect information about product risks. More realistically, of course, the effects of consumer misperceptions and first-party insurance will operate simultaneously.

insurance with full coverage, then she knows that if she buys a product and it causes harm, her insurer will compensate her for her losses — she will ignore the possibility of product-caused harm in her purchase decision. It follows that she will buy an excessive quantity of risky products in the absence of product liability. In the earlier example, the price of a widget was \$10 in the absence of product liability, and we explained that a consumer who was knowledgeable about the product risk would add \$1 to this price to account for the risk. Hence, she would buy a widget only if it were worth at least \$11 to her. But if she has insurance, she will treat the price of a widget as only \$10 because her insurer would cover her losses, and thus she might buy a widget even when its value to her is less than its full cost of \$11, a socially undesirable outcome.⁸⁷

The problem of excessive purchases of risky products due to first-party insurance can be remedied by employing product liability, as has been emphasized by Jon Hanson and Kyle Logue.⁸⁸ As noted above, if product liability is imposed on manufacturers, the prices of products will rise to reflect expected accident losses, leading consumers to make desirable purchase decisions. A consumer will have to pay \$11 for a widget, not \$10, and thus will buy a widget only if she values it by at least this much, which is the socially correct outcome.⁸⁹

A qualification to the foregoing analysis is that the insurance distortion applies only to monetary losses because nonmonetary losses are not generally covered by first-party insurance policies.⁹⁰ This point is significant because approximately half of all tort payments are for nonmonetary losses.⁹¹ Suppose in the widget example that half of the \$1.00 accident loss is

⁸⁷ The distortion of purchase decisions due to first-party accident insurance was first thoroughly analyzed by Jon Hanson and Kyle Logue. See Jon D. Hanson and Kyle D. Logue, *The First-Party Insurance Externality: An Economic Justification for Enterprise Liability*, 76 CORNELL L. REV. 129 (1990). They note, *id.* at 131 n.3, that this distortion was recognized by Guido Calabresi in *The Cost of Accidents*.

⁸⁸ *Id.*

⁸⁹ This statement presumes that consumers do not collect the \$1 of liability payments under product liability. This could be the case if these payments are obtained by their first-party insurers under subrogation arrangements (which we discuss in the next part). If subrogation were not applicable, then the effective price of the product would be too low, even with product liability.

⁹⁰ See *infra* Part IV.C.

⁹¹ See TILLINGHAST-TOWERS PERRIN, U.S. TORT COSTS: 2002 UPDATE: TRENDS AND FINDINGS ON THE COSTS OF THE U.S. TORT SYSTEM 17 (2002).

nonmonetary. Then in the absence of product liability, the effective price of a widget would be \$10.50 because the consumer would bear the \$.50 nonmonetary portion of her loss that is not covered by insurance. Only the remaining \$.50 monetary portion of her loss would be ignored because of first-party insurance. Hence, there is much less of a problem for product liability to correct.

IV. The Compensation Benefit of Product Liability

As we observed in the introduction, the influence of product liability on compensation is incremental, namely, only beyond that furnished by insurance. We begin, therefore, with a summary of the extent of insurance coverage.

A. Compensation Accomplished by Insurance

A substantial majority of Americans possess some private or public insurance coverage for medical expenses, disability, loss of life, and property damage that might result from accidents, including product-related ones. A few statistics indicate the contours of individuals' insurance coverage. Approximately 85 percent of the population possesses health insurance,⁹² about 78 percent of U.S. families own life insurance,⁹³ at least one-third of the workforce holds some form of disability coverage,⁹⁴ and 96 percent of homeowners have property insurance.⁹⁵ Additionally, individuals benefit from an implicit form of public insurance against accidents, namely the deductibility of casualty losses (losses due to a sudden event) and medical expenses

⁹² See U.S. CENSUS BUREAU, INCOME, POVERTY, AND HEALTH INSURANCE COVERAGE IN THE UNITED STATES: 2007, at 1, 21 fig.7 (2008), available at <http://www.census.gov/prod/2008pubs/p60-235.pdf> (showing that 15.3 percent of the population has no health insurance). The 85 percent figure is probably an underestimate of the true percentage of the population that has health insurance. *Id.* at 59-60.

⁹³ See AM. COUNCIL OF LIFE INSURERS, LIFE INSURERS FACT BOOK: 2008, at 61.

⁹⁴ See U.S. DEP'T OF LABOR BUREAU OF LABOR STATISTICS, NATIONAL COMPENSATION SURVEY: EMPLOYEE BENEFITS IN THE UNITED STATES, MARCH 2008, at xx tbl.12 (2008), available at <http://www.bls.gov/ncs/ebs/benefits/2008/ownership/civilian/table12a.pdf>.

⁹⁵ See Insurance Information Institute, Homeowners Insurance: Expenditures for Homeowners and Renters Insurance, <http://www.iii.org/media/facts/statsbyissue/homeowners> (last visited June 17, 2009). Additionally, 43 percent of renters had renters insurance. *Id.*

from taxable income.⁹⁶ Such deductions function effectively as insurance because they reduce the loss that a person suffers from an accident.⁹⁷

Although a majority of Americans hold major forms of insurance coverage, a significant minority still lack coverage, and the extent of coverage of those who have insurance may be less than their losses. Thus, product liability has a potentially beneficial role to play in providing compensation for product-related accident losses.

B. Compensation Accomplished by Product Liability

To assess the extent to which product liability adds to the compensation that individuals obtain from insurance, we first discuss subrogation provisions in insurance contracts. As we explain, these provisions effectively lower the compensation that individuals receive from product liability settlements or judgments. We then address two other factors that also limit the compensation that individuals derive from the product liability system.

Subrogation provisions in insurance contracts. Insurance contracts commonly include subrogation provisions that give insurers the right to stand in the shoes of an insured victim and sue the injurer on behalf of the victim. The insurer may then keep some or all of any judgment or settlement, up to the amount it had paid the insured.⁹⁸ Subrogation rights in property and casualty insurance policies are established by common law in most jurisdictions, although these policies usually include express subrogation clauses as well.⁹⁹ Subrogation rights in health and

⁹⁶ Casualty losses can be deducted to the extent they exceed 10% of adjusted gross income. See 26 U.S.C. § 165(h)(2). Unreimbursed medical expenses can be deducted to the extent they exceed 7.5% of adjusted gross income. See *id.* § 213(a).

⁹⁷ For example, if a person incurs a \$100,000 loss but obtains a tax benefit worth \$25,000 due to the deductibility of the loss, it is as if the person was covered by a \$25,000 insurance policy. See Louis Kaplow, *The Income Tax as Insurance: The Casualty Loss and Medical Expense Deductions and the Exclusion of Medical Insurance Premiums*, 79 CALIF. L. REV. 1485 (1991).

⁹⁸ ALLAN D. WINDT, *INSURANCE CLAIMS & DISPUTES: REPRESENTATION OF INSURANCE COMPANIES AND INSURED* § 10:5 (5th ed. 2007):

[T]he insurance company is ordinarily entitled, on making a payment to or on behalf of the insured . . . to step into the shoes of the insured and assert any cause of action against a third party that the insured could have asserted for his or her own benefit had the insured not been compensated by the insurer. . . . Moreover, the insurer should be entitled to sue only for an amount of money necessary to make it whole. . . . The insurer should not . . . be able to recover for damages incurred by the insured in excess of the amount that the insured was paid by the insurer.

See generally TOM BAKER, *INSURANCE LAW AND POLICY: CASES, MATERIALS, AND PROBLEMS* 391-407 (2003).

⁹⁹ See KENNETH S. ABRAHAM, *INSURANCE LAW AND REGULATION* 244-45 (4th ed. 2005); Alan O. Sykes, *Subrogation and Insolvency*, 30 J. LEGAL STUD. 383 (2001).

medical policies are also widespread and are generally established by explicit terms in insurance contracts.¹⁰⁰

If a victim's insurance coverage is sufficient to compensate her for her loss, the insurer can retain, through subrogation, whatever is paid by the defendant in a judgment or settlement. For example, suppose that an individual suffers a \$100,000 loss for which she is fully compensated by her insurer, and the defendant settles the claim for \$75,000. Then the insurer will keep the entire \$75,000 settlement. If, however, the victim's insurance coverage is less than her loss, the situation is more complicated. Suppose, for instance, that her insurance policy compensates her for only \$60,000 of the \$100,000 loss. Then, if there is a \$75,000 settlement, one possibility is that she will receive \$40,000 of the settlement, thereby making her whole, and her insurer will retain the balance of \$35,000.¹⁰¹ Another possibility is that the insurer will keep \$60,000 of the settlement, so it will be fully reimbursed for its payment to the insured, with the remaining \$15,000 going to the insured. A third possibility is that the settlement will be shared between the insured and the insurance company in a way that makes neither of them whole.¹⁰² In sum, subrogation often results in accident victims receiving only a fraction of their settlements or judgments, and possibly nothing at all from them.^{103, 104}

Legal fees. The payment of legal fees also substantially reduces the net compensation that a victim of a product accident obtains from a settlement or judgment. The great majority of

¹⁰⁰ See ABRAHAM, *supra* note 99, at 405; Sykes, *supra* note 99, at 383-84.

¹⁰¹ This outcome — that the victim is made whole before the insurer retains any of a settlement or judgment — is the more common of the three possibilities that we discuss. See, e.g., ABRAHAM, *supra* note 99, at 405-07; Sykes, *supra* note 99, at 385.

¹⁰² We have discussed the possible outcomes when the settlement, \$75,000, is between the insurance coverage of \$60,000 and the loss of \$100,000. Another situation is when the settlement is less than the insurance coverage of \$60,000 — say, it is \$50,000. Then there are three possibilities analogous to those mentioned in the text. Specifically, the plaintiff may receive \$40,000 of the settlement, making her whole, and the insurer will receive the remaining \$10,000; the insurer may receive the entire \$50,000 settlement, making it as whole as possible; or the plaintiff and the insurer may share the settlement in some intermediate way.

¹⁰³ An exception occurs in the following circumstances. Suppose that a settlement is sufficiently low that it plus the victim's insurance coverage is still less than the victim's loss. Then if the victim is made whole before the insurer retains any of a settlement or judgment, the entire settlement would be retained by the victim.

¹⁰⁴ Notwithstanding this conclusion, individuals do receive a reduction in their insurance premiums as a consequence of subrogation (because subrogation provides insurers with additional revenue). But lower insurance premiums do not result in an increase in compensation in the event of an accident.

product liability suits are brought under contingency fee arrangements,¹⁰⁵ in which the legal fees of individual plaintiffs typically equal 25 percent to 33 percent of the amount received.¹⁰⁶ The legal fees of class plaintiffs average approximately 18 percent of the value of settlements or awards.¹⁰⁷

Delay. Delay in the payment of judgments or settlements also lowers the effective compensation of victims of product accidents, for two reasons. First, if victims do not receive interest on their judgment or settlement from the time of the accident until receipt of their payment, then they will be shortchanged. This issue is relevant because substantial delay in receiving compensation is typical — the time between injury and payment in tort suits often is measured in years¹⁰⁸ — and prejudgment interest sometimes is not awarded.¹⁰⁹ Second, if victims cannot easily borrow against future possible judgments or settlements, as would often be true, then they may suffer because of illiquidity while waiting for payment.

¹⁰⁵ According to DEBORAH R. HENSLER ET AL., COMPENSATION FOR ACCIDENTAL INJURIES IN THE UNITED STATES 8, 135-36 (1991), available at <http://www.rand.org/pubs/reports/2006/R3999.pdf>, 87 percent of tort liability claimants who retained an attorney entered into a contingency fee arrangement to cover legal fees. We assume that the percentage for product liability suits is not dramatically different.

¹⁰⁶ See HENSLER, *supra* note 105, at 8, 136 (finding that the median fixed contingency fee paid is 33% and that the median adjusted contingency fee paid is between 25% and 33%); see also Herbert M. Kritzer, *The Wages of Risk: The Returns of Contingency Fee Legal Practice*, 47 DEPAUL L. REV. 267, 286 (1998) (finding that the contingency fee paid in the vast majority of fixed contingency fee arrangements is 33% and that the contingency fee paid in adjusted contingency fee arrangements is usually 25% if the case does not involve substantial trial preparation and 33% if it does).

¹⁰⁷ See, e.g., Theodore Eisenberg & Geoffrey P. Miller, *Attorney Fees in Class Action Settlements: An Empirical Study*, 1 J. EMPIRICAL LEGAL STUD. 27, 51 (2004) (finding that the mean fee rate for tort class action lawsuits is 17.9 percent).

¹⁰⁸ In a study of 1,452 closed malpractice claims from five liability insurers, the average time between the injury and the closure of the claim was five years. See David M. Studdert et al., *Claims, Errors, and Compensation Payments in Medical Malpractice Litigation*, 354 NEW ENG. J. MED. 2024, 2026 (2006), available at <http://content.nejm.org/cgi/content/full/354/19/2024>. For tort suits in general, claims take an average of 21.0 months to process if there is a bench trial, and 26.5 months if there is a jury trial. LYNN LANGTON & THOMAS H. COHEN, CIVIL BENCH AND JURY TRIALS IN STATE COURTS, 2005, at 8 (rev. Apr. 9, 2009), available at <http://www.ojp.usdoj.gov/bjs/pub/pdf/cbjtsc05.pdf>.

¹⁰⁹ See, e.g., 4 MATTHEW BENDER, DAMAGES IN TORT ACTIONS § 39.01 (2009) (“Prejudgment interest is not as readily available . . . in wrongful death and personal injury actions — many states continue to limit interest in these cases to post-judgment interest.”); Michael S. Knoll, *A Primer on Prejudgment Interest*, 75 TEX. L. REV. 293, 296 (1996) (“Nonetheless, the requirement that a losing defendant pay prejudgment interest to a successful plaintiff remains far from universal. Although a growing number of jurisdictions recognize a successful plaintiff’s entitlement to prejudgment interest, other jurisdictions expressly bar recovery. Still other courts and statutes leave it to the discretion of the court whether to provide prejudgment interest.”). Some states have begun to reform their laws to permit recovery of prejudgment interest. See American Tort Reform Association, *Prejudgment Interest Reform* (2007), <http://www.atra.org/issues/index.php?issue=7492> (cataloging state reform efforts).

C. The Social Desirability of the Compensation Accomplished by Product Liability

Although, for the reasons we have just discussed, the amount of additional compensation that individuals actually receive due to the product liability system will usually be significantly less than the amount defendants pay in settlements or judgments, it will still, of course, often be positive and sometimes will be substantial. We now consider the value to individuals of this additional compensation.

Our first point is that the value of the compensation that an accident victim obtains due to product liability will be relatively low when she also receives insurance payments. The reason is that her insurance payments will be used to satisfy her most pressing financial needs (say for payment of medical expenses). The money she obtains through the product liability system will be used to meet her remaining and less important needs. Hence, the benefit per dollar received due to product liability payments will be lower.¹¹⁰

To illustrate this point, suppose that an individual with assets of \$200,000 faces a one percent chance of a \$100,000 loss, that she has insurance coverage that would compensate her for \$60,000 of this amount, and that the product liability system would compensate her for the remaining \$40,000.¹¹¹ Using economists' statistical estimates of individuals' degree of risk aversion, we calculate that she would obtain a benefit equivalent to \$1,480.52 from the insurance coverage and an additional benefit of \$499.12 from the supplemental compensation provided through product liability.¹¹² Thus, the benefit per dollar of compensation due to product liability

¹¹⁰ In economic terms, the marginal utility of product-liability-related dollars is less than the marginal utility of insurance-related dollars, because of the declining marginal utility of money.

¹¹¹ The individual would receive \$40,000 as a result of product liability if her insurance policy includes a subrogation provision. For then the insurer would obtain \$60,000 of a \$100,000 judgment and she would retain \$40,000.

¹¹² Let $U(\cdot)$ represent the utility to an individual of her wealth. To calculate the dollar equivalent, b , of the benefit from \$60,000 of insurance coverage, we solve $.99U(\$200,000 - b) + .01U(\$160,000 - b) = .99U(\$200,000) + .01U(\$100,000)$. Note that this equation means that the individual is indifferent between paying b for the coverage and not having coverage (if b were lower than that satisfying the equation, the individual would be better off with the coverage than not, so b would not be her willingness to pay for the coverage). We employ the constant relative risk aversion utility function $U(y) = y^{1-\gamma}/(1-\gamma)$, where y is an individual's wealth and γ is the coefficient of relative risk aversion. We assume that γ is 2, which is consistent with economists' estimates of γ . See, e.g., Syngoo Choi, Raymond Fisman, Douglas Gale & Shachar Kariv, *Consistency and Heterogeneity of Individual Behavior under Uncertainty*, 97 AM. ECON. REV. 1921, 1931 (2007); Martin L. Weitzman, *Subjective Expectations and Asset-Return Puzzles*, 97 AM. ECON. REV. 1102, 1103 (2007). Solving for b in the equation above, we obtain $b = \$1,480.52$. Similarly, to obtain the dollar equivalent of the benefit of the next \$40,000 of coverage provided by

is \$0.0125 (= \$499.12/40,000), which is only approximately half of the benefit per dollar of insurance coverage, \$0.0247 (= \$1,480.52/60,000). Note that the actuarially fair premium for each dollar of compensation is \$0.01 (= 1% x \$1.00), whereas, because of risk aversion, the individual is willing to pay \$0.0125 on average for each dollar of compensation through the product liability system, and \$0.0247 for each dollar of compensation through insurance. In other words, she is willing to pay 25 percent more than the fair premium for compensation through the product liability system and 147 percent more than the fair premium for compensation through insurance.

Our second point about the value of compensation from product liability applies when the level of loss that an accident victim suffers is modest, as would often be true when a product liability suit is brought as a class action.¹¹³ Then the value of compensation per dollar received would be quite low because, by definition, a victim's financial needs after experiencing a modest loss will not be great. Consider a defectively designed water heater that leaks and causes individuals to incur clean-up costs of \$100. Such a loss would be a minor one for most individuals and hence, so would the value of compensation per dollar received for the loss. We calculate that the benefit per dollar of compensation for a loss of this magnitude is \$0.010005 (= \$1.0005/100), which means that the individual is not even willing to pay one percent more than the fair premium for compensation through the product liability system.¹¹⁴

Our last point about the compensatory value of the product liability system is relevant when accident victims receive damages for nonpecuniary losses, notably for pain and suffering. Such compensation tends to be of low value because pain and suffering per se usually does not

the liability system, we solve $U(\$200,000 - \$600 - b) = .99U(\$200,000 - \$600) + .01U(\$160,000 - \$600)$ (the \$600 figure represents the actuarially fair premium for the \$60,000 of insurance coverage), which results in $b = \$499.12$.

¹¹³ See John C. Coffee, Jr, *Class Action Accountability: Reconciling Exit, Voice, and Loyalty in Representative Litigation*, 100 COLUM. L. REV. 370, 417 (2000) (“[T]he traditional class action aggregates small claims that are individually uneconomical to litigate.”). In *Amchen Products*, the Supreme Court wrote in 1997 “The policy at the very core of the class action mechanism is to overcome the problem that small recoveries do not provide the incentive for any individual to bring a solo action prosecuting his or her rights. A class action solves this problem by aggregating the relatively paltry potential recoveries into something worth someone's (usually an attorney's) labor.” *Amchem Prods., Inc. v. Windsor*, 521 U.S. 591, 617 (1997) (quoting *Mace v. Van Ru Credit Corp.*, 109 F.3d 388, 344 (7th Cir. 1997)).

¹¹⁴ Assume that, as in the previous examples, the probability of a loss occurring is one percent and that the individual's initial wealth is \$200,000. Then the dollar equivalent, b , of the benefit from \$100 of compensation in the event of a loss is calculated by solving $U(\$200,000 - b) = .99U(\$200,000) + .01U(\$199,900)$. Using the utility function discussed *supra* note 112 results in $b = \$1.0005$.

increase one's need for money, however much it lowers one's well-being. For example, although the death of a child would cause the child's parents the greatest anguish, this loss would not be likely to generate a greater need for money (it probably would decrease their financial requirements).¹¹⁵

When one takes the cost of providing compensation for pain and suffering into account — product prices will rise to cover manufacturers' payments for pain and suffering damages — consumer welfare can be shown to decline. To illustrate, suppose an individual faces a one percent chance of a product accident that would cause significant pain and suffering, for which she would be compensated \$100,000. The expected value of her compensation is \$1,000 (= 1% x \$100,000) and the product price will rise by the same amount. Although the higher price will be exactly offset by the expected value of her compensation, we calculate that she will be made worse off by \$365.84 as a result of the policy of compensating for pain and suffering losses.¹¹⁶ This is because the liability system effectively forces individuals to purchase insurance against such losses even though they would not want to purchase insurance for pain and suffering if they had a choice (for example, most parents do not buy insurance that would pay them money in the event of the death of a child because they do not find the insurance worth the premium).¹¹⁷ The reduction in consumer welfare attributable to compensation for

¹¹⁵ Similarly, an injury to a person that causes significant discomfort, say a broken wrist, would not be expected to create financial needs beyond the cost of medical treatment and possibly the replacement of lost income. The point is that pain and suffering per se does not usually enhance the need for money.

¹¹⁶ Let L represent the utility loss from pain and suffering. Assume that an individual's assets are \$200,000 and that she is purchasing a good, say an automobile, that would cost \$30,000 if there were no pain and suffering awards and \$31,000 if there were (the higher price is due to the manufacturer's liability cost for pain and suffering of \$1,000 = 1% x \$100,000). The amount, w , by which she is made worse off as a result of having to pay \$31,000 for the automobile because of pain and suffering compensation is determined by the following equation: $U(\$170,000 - w) - .01L = .99U(\$169,000) + .01U(\$269,000) - .01L$. The left-hand side of the equation is, aside from w , her utility if she pays \$30,000 for the automobile and does not receive pain and suffering damages in the event of a product-related accident. The right-hand side is her expected utility if she pays \$31,000 for the automobile and receives pain and suffering damages of \$100,000. Using the utility function *supra* note 112 and solving for w yields $w = \$365.84$.

¹¹⁷ See generally STEVEN SHAVELL, *ECONOMIC ANALYSIS OF ACCIDENT LAW* 228-31 (1987); Kenneth J. Arrow, *Optimal Insurance and Generalized Deductibles*, 1974 SCANDANAVIAN ACTUARIAL J. 1; Philip Cook & Daniel Graham, *The Demand for Insurance and Protection: The Case of Irreplaceable Commodities*, 91 Q.J. ECON. 143 (1977); W. Kip Viscusi & William N. Evans, *Utility Functions That Depend on Health Status: Estimates and Economic Implications*, 80 AM. ECON. REV. 353 (1990); Richard Zeckhauser, *Coverage for Catastrophic Illness*, 21 PUB. POL'Y 149 (1973). But see Steven P. Croley & Jon D. Hanson, *The Nonpecuniary Costs of Accidents: Pain-and-Suffering Damages in Tort Law*, 108 HARV. L. REV. 1785 (1995) (arguing that individuals desire nonpecuniary damages and insurance).

nonmonetary losses is a significant consideration because, as noted previously, approximately half of all tort payments are for such losses.¹¹⁸

In sum, the benefit of product liability with respect to compensation does not appear to be substantial. This is mainly because the compensation provided through the product liability system for monetary losses is incremental in nature — only in addition to the compensation already provided through private and public insurance — and therefore of relatively low value, and because the compensation provided for nonmonetary losses is actually detrimental to consumers.

V. The Costs of Product Liability

In this Part we discuss the costs attributable to the product liability system: the legal expenses associated with product liability lawsuits, as well as the loss of consumer welfare due to the increase in product prices resulting from product liability litigation.

A. Legal Expenses

A common measure of the legal expenses associated with tort liability is the percentage of the total payments made by defendants that is retained by plaintiffs — the lower this percentage, the higher are the legal expenses. Notably, Tillinghast-Towers Perrin reports in a nationwide survey of the tort system that victims receive only \$.46 of every dollar paid by defendants in tort litigation.¹¹⁹ Other authors come to similar conclusions. Kakalik and Pace estimate that in tort litigation generally victims obtain \$.46 to \$.47 per dollar of tort system expenditures.¹²⁰ Also, Kakalik et al. ascertain that in asbestos cases victims obtain \$.37 of every dollar paid by defendants and Carroll et al. find that in such cases victims obtain \$.42.¹²¹

¹¹⁸ See *supra* text accompanying note 91.

¹¹⁹ TILLINGHAST-TOWERS PERRIN, U.S. TORT COSTS: 2003 UPDATE: TRENDS AND FINDINGS ON THE COSTS OF THE U.S. TORT SYSTEM 17 (2003) (victims receive \$.22 for economic losses and \$.24 for noneconomic losses). Subsequent reports do not state the return to the plaintiff per dollar spent by defendants. See, e.g., TOWERS PERRIN, 2008 UPDATE ON U.S. TORT COST TRENDS (2008).

¹²⁰ JAMES S. KAKALIK & NICHOLAS M. PACE, COSTS AND COMPENSATION PAID IN TORT LITIGATION, at ix tbl.S.3 (1986). The numbers reported in the text are based on the net compensation received by plaintiffs compared to the total expenditures on tort litigation, using the low and high estimates in Table S.3.

¹²¹ JAMES S. KAKALIK, PATRICIA A. EBENER, WILLIAM L. F. FELSTINER & MICHAEL G. SHANLEY, COST OF ASBESTOS LITIGATION, at vii (1983) (RAND Institute for Civil Justice Pub. No. R-3042-ICJ); STEPHEN J. CARROLL, DEBORAH HENSLER, JENNIFER GROSS, ELIZABETH M. SLOSS, MATTHIAS SCHONLAU, ALLAN ABRAHAMSE & J. SCOTT ASHWOOD, ASBESTOS LITIGATION 104 (2005).

Danzon finds that for medical malpractice claims victims receive \$.60 for every dollar of defendants' liability insurance payments,¹²² while Huber reports that victims receive only \$.40 for such claims.¹²³ Huber states as well that in product liability litigation, victims obtain \$.50 for every dollar paid by defendants for liability insurance.¹²⁴ Hersch and Viscusi report that in tort litigation in Texas, plaintiffs receive between \$.55 and \$.57 for every dollar paid by defendants.¹²⁵ Some of these studies do not take into account the administrative costs of insurers, the value of the time spent by litigants, or the operating costs of the judicial system,¹²⁶ and therefore overestimate the amount obtained by victims per dollar of total litigation-related expenditures.

The preceding review of findings about the costs of the tort system implies that, for each dollar that an accident victim receives in a settlement or judgment, it is reasonable to assume that a dollar of legal and administrative expenses is incurred. In other words, for society to use the tort system to transfer money to victims is analogous to a person using an ATM machine at which a withdrawal of \$100 results in a service fee of \$100. Actually, there is a sense in which the tort system is even more expensive than this. For every \$100 nominally received by victims, only a fraction of this amount is retained by them on average because some of it is kept by first-party insurers under subrogation arrangements.¹²⁷ If, for example, victims retain \$50 of each \$100 received, society incurs \$100 in legal expenses in order to transfer only \$50 to victims. Equivalently, for each dollar that an accident victim receives, two dollars of legal expenses are

¹²² PATRICIA M. DANZON, *MEDICAL MALPRACTICE: THEORY, EVIDENCE, AND PUBLIC POLICY* 187 (1985). She states that for each dollar received by plaintiff, approximately \$.66 is spent by the parties on litigation, implying that plaintiffs' share of total expenditures is $\$1.00/\$1.66 = .60$.

¹²³ PETER HUBER, *LIABILITY: THE LEGAL REVOLUTION AND ITS CONSEQUENCES* 151 (1988). His claim is that "[s]ixty cents of every dollar spent on malpractice liability insurance are absorbed by administrative and legal costs," which implies that only \$.40 would be left for victims.

¹²⁴ *Id.*

¹²⁵ Joni Hersch & W. Kip Viscusi, *Tort Liability Litigation Costs for Commercial Claims*, 9 *AM. LAW ECON. REV.* 330, 359 (2007).

¹²⁶ For example, DANZON, *supra* note 122, appears to omit all of these factors; and Hersch & Viscusi, *supra* note 125, take only partial account of the administrative costs of liability insurers and exclude the value of the time of litigants and the costs of the judicial system.

¹²⁷ *See supra* text accompanying notes 98-103 .

incurred. In all then, the tort system, and thus the product liability system,¹²⁸ is extremely expensive.

B. Price Distortions

We here discuss an indirect cost of product liability, that it discourages socially beneficial consumption. This occurs, as we now explain, because product liability causes product prices to rise undesirably, both due to litigation costs and to the award of damages for nonmonetary losses.

Litigation-cost-related price distortion. We observed in Part III that product liability leads product prices to rise to reflect product risks and thereby may help consumers to make correct purchase decisions. It was assumed there, for simplicity, that liability did not involve litigation costs. When litigation costs are taken into account, however, product liability causes prices to rise too much and consumers to purchase too little.

To elaborate, recall that in our example in Part III the price of widgets under product liability was \$11, the sum of the \$10 production cost and \$1 in expected harm, and thus consumers bought widgets only if they valued them more highly than \$11.¹²⁹ Now suppose that a manufacturer's litigation costs are \$.40 per widget on average, and that a consumer's litigation costs are also \$.40 per widget. Then the price of a widget would have to be \$11.40 in order for manufacturers to cover all of their costs, including \$.40 in litigation costs. Assuming that consumers are well informed about their own litigation costs, they would realize that they, too, would bear \$.40 in litigation costs per widget, and therefore would not purchase a widget unless they valued it more highly than \$11.80 (= \$11.40 + \$.40). Because the effective price of widgets now exceeds \$11, some consumers will be undesirably discouraged from buying widgets. For instance, a consumer who places a value of \$11.50 on a widget would have obtained a \$.50 net benefit (= \$11.50 - \$11) from purchasing one, but she will not buy one if there is product liability because the effective price would be \$11.80. This foregone benefit of \$.50 is a consumer welfare loss, and such losses occur for all consumers who refrain from buying widgets because

¹²⁸ We are assuming that the costs of the product liability system are comparable to those of the tort system generally.

¹²⁹ See *supra* Part III.A.

of the litigation-cost-related price increase.¹³⁰ We say that this effect is caused by a price distortion because the effective price exceeds the price of \$11 at which widgets would be sold were there no liability and thus no litigation costs. Consumer welfare losses due to this price distortion are obviously distinct from the direct losses due to the litigation costs themselves.¹³¹

In the extreme, the litigation-cost-related price increase due to product liability could be so high as to discourage most consumers from purchasing the product and consequently to cause its manufacturer to withdraw the product from the marketplace or go out of business. If so, all consumers who would have purchased the product in the absence of product liability will suffer welfare losses.

Nonmonetary-loss-related price distortion. We noted in Part IV that product liability causes product prices to rise to reflect payments by firms for nonmonetary losses, and we explained that consumers are made worse off as a consequence because the value they attach to compensation for nonmonetary losses is less than its cost to them through higher prices.¹³² Our point here is that, because of this effect, some individuals will be inefficiently discouraged from buying products in the first place. In other words, these individuals are made worse off by product liability not because they are effectively forced to purchase a type of insurance that they do not want when they buy the product, but rather because they are induced by the high price of the product not to buy it.

Consider, for example, parents who are contemplating purchasing a bicycle helmet for their child. Suppose that the price of the helmet is \$5 higher than it otherwise would be due to the manufacturer's expected liability payments for nonmonetary losses if the helmet is defective and fails to protect the child in an accident, whereas the value to the parents of being able to obtain damages for such losses is only \$1. Then product liability would lower the net value of

¹³⁰ The point that litigation-cost-related price increases cause consumer welfare losses also holds if consumers misperceive product risks (for simplicity, we have been assuming in the discussion in the text that they correctly perceive risks). The only difference is that the magnitude of the losses depends on the degree to which consumers underestimate or overestimate product risks. In the example in the text, we said that a consumer would add to the price of \$11.40 the \$.40 of litigation costs that she would bear on average. But if the consumer underestimates the likelihood of litigation, she will add less than \$.40 to \$11.40, so that the distortion due to litigation costs would be lessened. Conversely, if consumers overestimate product risks, the distortion due to litigation costs would be exacerbated.

¹³¹ There are no empirical estimates of these losses of which we are aware.

¹³² See *supra* text accompanying notes 114-118.

the helmet to the parents by \$4, which might undesirably dissuade them from buying it. This detrimental effect of product liability is likely to be significant because of the importance of nonmonetary losses.

VI. Is Product Liability Socially Worthwhile Given its Benefits and Costs?

In this Part we compare the benefits of product liability to its costs, first for products that are widely sold, and then briefly for products that are not widely sold.

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Product liability for widely sold products. We have discussed why product liability might not increase the safety of products very much beyond the level generated by market forces and regulation, and we found no empirical evidence suggesting that product liability has in fact enhanced product safety for widely sold products.¹³³ We also considered whether product liability improves the purchase decisions of consumers by increasing the prices of risky products. We concluded that this effect will be beneficial for consumers who misperceive product risks or who have insurance against monetary losses,¹³⁴ but that it will be distortionary to the extent that prices rise due to litigation costs.¹³⁵ We inquired as well about the degree to which product liability promotes the compensation of victims, and found that this benefit is limited — because accident victims already tend to have insurance coverage — and may even be negative — because much of the compensation is for pain and suffering losses for which individuals generally do not want to be insured.¹³⁶ Finally, we emphasized that the legal expenses of the product liability system are great.¹³⁷

Before assessing the desirability of product liability for widely sold products, we need to explain why the effect of product liability on prices is unlikely to be desirable. First, it can be shown that the price signalling benefit associated with the misperception of product risk will be less than the litigation-cost-related price distortion unless consumers underestimate risks by more

¹³³ See *supra* Part II.

¹³⁴ See *supra* Part III.

¹³⁵ See *supra* Part V.B.

¹³⁶ See *supra* Part IV.

¹³⁷ See *supra* Part V.

than fifty percent or overestimate them by more than one hundred percent.¹³⁸ Given the extensive availability of information about product risks that we discussed above,¹³⁹ it seems unlikely that consumers would generally misperceive risks to this degree. Second, the price signalling benefit of product liability as a corrective for the price distortion due to consumers having first-party insurance is limited because such insurance typically covers only monetary losses.¹⁴⁰ And this benefit, too, cannot be obtained without causing a related price distortion due to litigation costs.¹⁴¹ Third, recall that there also is a price distortion caused by compensating consumers for nonmonetary losses.¹⁴² On balance, there is not a clear basis for finding that the price signalling benefit outweighs the price distortion cost; and if this benefit does outweigh this cost, the difference seems unlikely to be significant.

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We can now take stock of the benefits and costs of product liability in order to assess its social desirability for widely sold products. We have just explained why that the price signalling benefit might not exceed the corresponding price distortion cost and, if it does, it is not likely to exceed the distortion cost by much. We have also found that there is no measurable product safety benefit for widely sold products and little basis for believing that there is a significant

¹³⁸ To demonstrate this point, assume that the demand curve for a product is linear, $P = a - bQ$, where P is the price, Q is the quantity, and a and b are positive parameters. Let C be the cost per unit of production, H be the expected harm per unit, and λ be the degree of underestimation of risk (so consumers believe that the expected harm per unit is $(1 - \lambda)H$). Assume also that the parties' litigation costs equal the amount of money obtained by the plaintiff; see *supra* Part V.A. This implies that each party's litigation costs are $(1/3)H$ (for then the plaintiff obtains $(2/3)H$ after paying her litigation costs of $(1/3)H$, and the defendant incurs litigation costs of $(1/3)H$). Under these assumptions, the deadweight loss (the reduction in social welfare from its ideal level) in the absence of liability can be shown to be $.5\{(a - C - (1 - \lambda)H)/b\} - [(a - C - H)/b]\lambda H$; this is the area of the triangle that is above the demand curve and below the price line at $C + H$, between the ideal consumption level and the higher level that occurs due to misperceptions. Similarly, the deadweight loss in the presence of liability is $.5[(2 - \lambda)(H/3)/b][(2 - \lambda)(H/3)]$; this is the area of the triangle that is below the demand curve and above the price line at $C + H$, between the ideal consumption level and the lower level that occurs due to the litigation cost-related price increase. Setting these two expressions equal to each other and solving for λ yields $\lambda = .5$. It follows that if λ is less than $.5$, the deadweight loss in the presence of liability exceeds the deadweight loss in the absence of liability. In other words, the price signalling benefit is less than the litigation cost-related price distortion unless λ exceeds $.5$. Similarly, it can be shown that if consumers overestimate product risks, the price signalling benefit is less than the litigation-cost-related price distortion unless λ is less than -1 , that is, unless the perceived risk is more than double the actual risk.

¹³⁹ See *supra* Part II.A.

¹⁴⁰ See *supra* Part III. B.

¹⁴¹ Note, however, that this price distortion is the same one associated with the first point. The two price distortions are not additive.

¹⁴² See *supra* Part V.B.

compensatory benefit. This leaves on the ledger the legal costs of the product liability system, which are substantial, equaling or exceeding the payments received by product accident victims. Hence, our analysis suggests that product liability may well be socially undesirable for most widely sold products — or, at the very least, that the case for product liability is not easy to make in this context.

We now turn to consideration of the benefits and costs of product liability for widely sold products in two industries.

Pharmaceuticals. In the case of the DPT vaccine, product liability has failed to result in an improvement in product safety; specifically, as we noted in our earlier discussion, the safety of the vaccine did not change despite a large increase in manufacturers' exposure to liability risk.¹⁴³ Product liability has, however, led to a twenty-fold increase in the price of the DPT vaccine¹⁴⁴ and an undesirable decrease of more than one million preschool-age children who were vaccinated.¹⁴⁵ The compensatory benefits to vaccine victims resulting from product liability are likely to be limited for the general reasons discussed above. Finally, DPT product liability litigation involves substantial legal costs, estimated to be approximately five dollars for every dollar received in compensation.¹⁴⁶ Thus, product liability for DPT-related accidents appears to be socially undesirable.

With regard to prescription drugs generally, physicians should have relatively good information about adverse outcomes and therefore market forces should work relatively well to discipline makers of unsafe drugs. Also, as we noted, the FDA actively regulates prescription drugs, seeking to winnow out unsafe drugs in the testing stage, monitoring the safety of drugs that it approves for sale, and regulating labels and warnings.¹⁴⁷ Consequently, the effect of product liability on the safety of pharmaceutical products might not be significant, and we are

¹⁴³ See *supra* text accompanying note 81.

¹⁴⁴ Richard L. Manning, *Changing Rules in Tort Law and the Market for Childhood Vaccines*, 37 J. L. & ECON. 247, 273 (1994).

¹⁴⁵ Richard L. Manning, *Is the Insurance Aspect of Producer Liability Valued by Consumers? Liability Changes and Childhood Vaccine Consumption*, 13 J. RISK & UNCERTAINTY 37, 47 (1996). We are presuming that it is socially desirable that all babies be vaccinated, in part because pertussis and diphtheria are communicable diseases. Indeed, most states have had compulsory immunization at school entry. *Id.* at 41.

¹⁴⁶ See Manning, *supra* note 81, at 271.

¹⁴⁷ See *supra* text accompanying notes 39-44.

not aware of any evidence that suggests otherwise. Additionally, for reasons discussed above, we assume that product liability has limited price signalling and compensatory value. The costs of pharmaceutical-related product liability litigation, however, are quite large.¹⁴⁸ It is at least plausible, therefore, that product liability is not socially beneficial for pharmaceutical products.

General aviation aircraft. As we observed earlier, two studies found that a substantial increase in product liability litigation had little or no effect on the safety of general aviation aircraft.¹⁴⁹ This finding is not surprising because, as we noted, buyers of aircraft have strong incentives to learn about aircraft risks, and the FAA extensively regulates the design and maintenance of aircraft. The increased litigation did, however, cause the price of general aviation aircraft to rise dramatically, resulting in a steep decline in sales¹⁵⁰ that led several leading manufacturers to halt production.¹⁵¹ This outcome was likely to have been socially undesirable because, if buyers of aircraft are generally well informed about the relevant risks, they presumably had been making appropriate purchase decisions prior to the price increases. Also, the compensatory rationale for product liability in regard to aircraft accidents is questionable, as it appears no different from the compensatory rationale for product liability in general. Finally, the cost of product liability litigation concerning general aviation accidents was

¹⁴⁸ See Tomas J. Philipson & Eric Sun, *Is the Food and Drug Administration Safe and Effective?*, 22 J. ECON. PERSP. 85, 94–95 (2008) (suggesting that the deadweight losses to consumers and producers from the price increase due to product liability litigation in the pharmaceutical industry is in the tens of billions of dollars).

¹⁴⁹ See *supra* text accompanying notes 66-69.

¹⁵⁰ Sales of new airplanes by general aviation manufacturers declined from 17,811 units in 1978 to 1,143 units a decade later, a decline of 93.5%. See Martin, *supra* note 66, at 484. Manufacturers attributed the decline to price increases that had occurred as a result of enhanced product liability exposure. *General Aviation Accident Liability Standards Act of 1987: Hearing on S. 473 Before the S. Subcomm. on Aviation of the S. Comm. on Commerce, Science & Transportation*, 100th Cong. 52–53 (1987) (statement of Robert Martin, attorney representing Beech Aircraft).

¹⁵¹ General aviation manufacturers began suspending production of piston-engine aircraft in 1986. DONALD M. PATTILLO, *A HISTORY IN THE MAKING: 80 TURBULENT YEARS IN THE AMERICAN GENERAL AVIATION INDUSTRY* 155 (1998). In the cases of Beech and Cessna, product liability costs actually exceeded production costs. Martin, *supra* note 66, at 484. The CEO of Cessna said that production would resume only if a more favorable liability environment emerged. Mark R. Twombly, *Kill the Messenger*, AOPA PILOT, Aug. 1993, at 125. After the General Aviation Revitalization Act passed in 1994, Cessna's parent company announced it was reinitiating piston-engine aircraft production, ultimately launching new models in 1996. Thomas A. Horne, *Manufacturers Face the Future*, AOPA PILOT, Sept. 1994, at 5.

significant.¹⁵² In light of the preceding observations, the case favoring product liability for general aviation aircraft seems weak.

Product liability for products that are not widely sold. As we have explained, market forces and regulation are likely to be less effective in promoting safety for products that are not widely sold. Hence, the safety benefit of product liability will generally be greater for such products. This strengthens the case for product liability for products that are not widely sold, though our analysis of the other benefits of product liability, and of its costs, applies more or less unchanged, and still might result in the conclusion that product liability is not desirable.

VII. The Prevailing Social Endorsement of Product Liability

In this part we summarize the views of courts, academics, the media, and public policy organizations about product liability. We find that they broadly approve of such liability even though some have criticized it as being too expansive. However, neither the proponents nor the critics of product liability undertake a serious evaluation of its benefits or costs, which we believe explains why they have not contemplated the possibility that product liability is socially undesirable, at least for widely sold products.

A. Judicial Opinions

Over the last two centuries, courts have generally increased the scope of the liability of firms for harms done to their customers. They have altered the foundation of such liability from contract — predicated on a firm having sold a product directly to a customer — to tort — not requiring a firm to have sold its product directly to a customer.¹⁵³ In recent years, however, they have acted to curtail product liability to some extent.¹⁵⁴

¹⁵² See Martin, *supra* note 66, at 484 (finding that from 1971-1976, Beech spent \$18 million insuring and defending product liability claims, of which only about \$3 million went to claimants).

¹⁵³ 1 DAVID G. OWEN ET AL., MADDEN & OWEN ON PRODUCTS LIABILITY § 1.4 (3d ed. 2008); Steven P. Croley & Jon D. Hanson, *Rescuing the Revolution: The Revived Case for Enterprise Liability*, 91 MICH. L. REV. 683, 695-712 (1992); George L. Priest, *The Invention of Enterprise Liability: A Critical History of the Intellectual Foundations of Modern Tort Law*, 14 J. LEGAL STUD. 461, 465-83 (1985); William L. Prosser, *The Fall of the Citadel (Strict Liability to the Consumer)*, 50 MINN. L. REV. 791, 791-800 (1960).

¹⁵⁴ See generally James A. Henderson & Aaron D. Twerski, *Closing the American Products Liability Frontier: The Rejection of Liability Without Defect*, 66 N.Y.U. L. REV. 1263, 1272 n.31 (1991) (listing examples of court decisions since the 1980s that have curtailed product liability); James A. Henderson & Theodore Eisenberg, *The Quiet Revolution in Products Liability: An Empirical Study of Legal Change*, 37 UCLA L. REV. 479, 480, 483-88 (1990) (“This quiet revolution is a significant turn in the direction of judicial decision making away from extending the boundaries of products liability and toward placing significant limitations on plaintiffs’ rights to

One important rationale for product liability offered by courts is that it promotes fairness, especially the notion that a firm that benefits from selling a dangerous product should have to pay for the harms that the product causes. For example, in *Brooks v. Beech Aircraft Corp.*, the court states “The burden of illness from dangerous products . . . should be placed upon those who profit from its production . . . That burden should not be imposed exclusively on the innocent victim.”¹⁵⁵ Naturally, this conception of fairness, like others to which the courts might appeal,¹⁵⁶ is not framed in terms of the benefits and costs of product liability that we have considered here.

Courts do, however, mention the benefits and costs of product liability when they comment on its public policy justifications. Yet on these occasions, their discussion is typically perfunctory and their claims often seem illogical. The influential concurring opinion of Justice Traynor in *Escola v. Coca-Cola Bottling Co.*, concerning harm done by a defective Coca-Cola bottle, is illustrative.¹⁵⁷ There Justice Traynor states: “[P]ublic policy demands that responsibility be fixed wherever it will most effectively reduce the hazards to life and health inherent in defective products that reach the market. It is evident that the manufacturer can anticipate some hazards and guard against the recurrence of others, as the public cannot.”¹⁵⁸ This is essentially the only language in the opinion that mentions the effect of product liability on

recover in tort for product-related injuries.”); Gary T. Schwartz, *The Beginning and the Possible End of the Rise of Modern American Tort Law*, 26 GEORGIA L. REV. 601, 603 (1992) (“[D]uring the last decade courts have rejected invitations to endorse new innovations in liability, moreover, they have placed a somewhat conservative gloss on innovations undertaken in previous years.”).

¹⁵⁵ See *Brooks v. Beech Aircraft Corp.*, 902 P.2d 54, 58 (N.M. 1995); see also *Greenman v. Yuba Power Prods.*, 377 P.2d 897, 901 (Cal. 1963) (“The purpose of such liability is to insure that the costs of injuries resulting from defective products are borne by the manufacturers that put such products on the market rather than by the injured persons. . .”); *Kemp v. Miller*, 154 Wis.2d 538, 556, 453 N.W.2d 872 (Wis. 1990) (“the risk of the loss associated with the use of defective products should be borne by those who have created the risk and who have reaped the profit by placing a defective product in the stream of commerce.”); RESTATEMENT (THIRD) OF TORTS: PRODUCT LIABILITY § 2 reporters’ note cmt. a (1998) (“the manufacturer should be strictly liable because it profits from its activity, which inevitably involves defect-caused harm to others.”); RESTATEMENT (SECOND) OF TORTS § 402A cmt. c (1965) (“the justification for the strict liability has been said to be that the seller, by marketing his product for use and consumption, has undertaken and assumed a special responsibility toward any member of the consuming public who may be injured by it.”).

¹⁵⁶ See, e.g., RESTATEMENT (THIRD) OF TORTS: PRODUCT LIABILITY § 2 cmt. a (1998) (mentioning disappointment of “reasonable expectations of product performance” as a fairness rationale).

¹⁵⁷ *Escola v. Coca Cola Bottling Co.*, 150 P.2d 436 (Cal. 1944) (Traynor, J., concurring).

¹⁵⁸ *Id.* at 440-41.

product safety,¹⁵⁹ and its reasoning is problematic. It is true that manufacturers may be able to reduce risk and consumers unable to do so, but this does not imply that *liability* is needed to induce manufacturers to lower risk. As we have stressed, manufacturers would not want to market dangerous products if their sales would fall in the wake of product-caused accidents. In other words, the opinion does not address the possibility that product safety might be achieved in the absence of liability because of market pressure from consumer information about product risks.

Justice Traynor's concurrence in *Escola* does mention consumer knowledge, however: "The consumer no longer has means or skill enough to investigate for himself the soundness of a product, even when it is not contained in a sealed package, and his erstwhile vigilance has been lulled by the steady efforts of manufacturers to build up confidence by advertising and marketing devices such as trade-marks. . . . Consumers no longer approach products warily but accept them on faith, relying on the reputation of the manufacturer or the trade mark."¹⁶⁰ One might agree that consumers will often be unable to learn about product risks from direct inspection of products. But this does not bar consumers from learning about product risks from the print media, television and the Internet, and government agencies — and, as we have emphasized, these sources provide extensive information about product risks.¹⁶¹ Further, Justice Traynor's view that firms employ their reputations opportunistically to sell unsafe products is questionable: it would be difficult for a firm to build and maintain a reputation for product safety without having a true record of product safety.

The *Escola* opinion also fails to mention that the regulation of product safety may lead firms to take desirable precautions and thus reduces the need for product liability.¹⁶²

¹⁵⁹ There are two additional sentences bearing on deterrence that are summary in nature: "It is to the public interest to discourage the marketing of products having defects that are a menace to the public. . . . It is to the public interest to prevent injury to the public from any defective goods by the imposition of civil liability generally." *Id.* at 441.

¹⁶⁰ *Id.* at 443.

¹⁶¹ See *supra* text accompanying notes 20-30.

¹⁶² Justice Traynor in *Escola* does mention the section of the Health and Safety Code that "prohibits the manufacturing, preparing, compounding, packing, selling . . . of any adulterated food" and that imposes strict criminal liability on manufacturers. *Escola*, 150 P.2d at 441. He argues that this "public policy of protecting the public from dangerous products placed on the market" should be expanded beyond food products and containers. Here Justice Traynor is using regulation as a justification for expanded product liability, not suggesting that regulation may be a substitute for product liability.

Furthermore, the opinion does not consider whether product liability has in fact led to changes in safety.

The abbreviated and intellectually unsatisfactory character of the statements about liability and safety in *Escola* is representative of what is found in other decisions that refer to the deterrence rationale for product liability.¹⁶³ For example, the court in *U.S. Airways v. Elliott Equip. Co.* states without analysis that “imposing strict liability here would serve as an incentive to safety because [defendant] Fluidics . . . is in a better position than a consumer to prevent circulation of defective products.”¹⁶⁴ Here we see the same non sequitur as in *Escola*. Just because the manufacturer is in the superior position to prevent defects does not imply that liability is needed to improve product safety; market forces and regulation may already lead the manufacturer to prevent defects. As in *Escola* and *U.S. Airways*, the occasional references in other opinions to the effect of product liability on product safety are generally conclusory and presumptive.¹⁶⁵

¹⁶³ Justice Traynor did not even mention deterrence explicitly in *Greenman v. Yuba Power Products, Inc.*, 377 P.2d 897 (Cal. 1963), an influential product liability case.

¹⁶⁴ *U.S. Airways v. Elliott Equip. Co.*, No. 06-1481, 2008 WL 4425238, at *5 (E.D. Pa. Sept. 29, 2008). This case involved injury to an employee of U.S. Airways when a boom supplied by Fluidics for deicing aircraft collapsed. The court presumed that liability would be needed to induce a firm like Fluidics to ensure the safety of its booms. But the court did not ask whether Fluidics would have a motivation to supply safe booms in order to retain its business with U.S. Airways and other airlines. Moreover, although the court noted that local authorities regulated the safety of airport equipment, *id.* at *1, it did not consider this in assessing the need for liability.

¹⁶⁵ *See, e.g.*, *All Alaskan Seafoods, Inc. v. Raychem Corp.*, 197 F.3d 992, 995 (9th Cir. 1999) (in which the court’s treatment of deterrence is cursory, stating that “Product liability promotes safer products by placing responsibility on the manufacturer, which is the party most able to prevent harm.”); *Sindell v. Abbot Laboratories*, 607 P.2d 924, 936 (Cal. 1980) (stating without development that “The manufacturer is in the best position to discover and guard against defects in its products and to warn of harmful effects; thus, holding it liable for defects and failure to warn of harmful effects will provide an incentive to product safety.”); *Bell v. Jet Wheel Blast*, 462 So.2d 166, 177 (La. 1985) (asserting that “in many instances the manufacturer would have no incentive to make and market a safer product . . .” if its liability is reduced); *Heath v. Sears, Roebuck & Co.*, 464 A.2d 288, 293 (N.H. 1983) (in which the only reference to deterrence occurs in the sentence “Deterrence is also a valid consideration; without the stimulus of plaintiffs’ products liability actions, the incentive to improve products and make them safer would not exist.” citation omitted); *Gantes v. Kason Corp.*, 679 A.2d 106, 112 (N.J. 1996) (claiming that the state’s interest in product safety “is furthered through the recognition of claims and the imposition of liability based on principles of strict products-liability law.”); *Leichtamer v. Am. Motors Corp.*, 424 N.E.2d 568, 575 (Ohio 1981) (in which the only mention of deterrence is the statement “. . . the public interest in human life and safety can best be protected by subjecting manufacturers of defective products to strict liability in tort when the products cause harm.”); *Dippel v. Sciano*, 155 N.W.2d 55, 58 (Wis. 1967) (arguing that “the manufacturer has the greatest ability to control the risk created by his product since he may initiate or adopt inspection and quality control measures thereby preventing defective products from reaching the consumer”). There are, however, occasional cases in which the reasoning about deterrence is not conclusory because they discuss whether imposing liability would promote product safety in the particular circumstances. *See, e.g.*, *McKay v. Rockwell Int’l Corp.*, 704 F.2d 444, 452 (9th Cir.

The discussion of the safety rationale in the *Restatement (Third) of Torts: Product Liability* is similar. The *Restatement* mentions the safety justification for product liability in a few brief sentences, assuming its importance, and does not consider that market forces and regulation may encourage product safety.¹⁶⁶ The *Restatement (Second)* only mentions in a phrase that the provision of safety is a rationale for product liability.¹⁶⁷

With respect to the price signalling benefit of product liability, most courts are silent, though some have observed that product liability is desirable because it causes the prices of defective products to rise and thereby dampens their consumption. For example, in *Bynum v. FMC Corp.*, the court said that “increased prices will . . . discourage consumers from purchasing risky products and thereby lower total accident costs to society.”¹⁶⁸ This view, however, fails to recognize that, to the extent that consumers have knowledge of product risks, an increase in the price of a dangerous product is not needed to induce them to refrain from buying it — they would not purchase a product that they knew to be dangerous, regardless of whether its price was higher due to product liability.¹⁶⁹ Other courts that mention the effect of product prices on purchases generally make the same error, believing that it is always beneficial for prices to

1983) (arguing that imposing liability would not be likely to foster product safety because market forces already accomplish this — the plaintiff, a purchaser of military equipment, is knowledgeable and would not buy dangerous products); *Queen City Terminals, Inc. v. Gen. Am. Transp. Corp.*, 653 N.E.2d 661, 672 (Ohio 1995) (explaining that product liability does not promote product safety when buyers are knowledgeable about product risks and specify the design of the product).

¹⁶⁶ We have found only three passages on deterrence in the RESTATEMENT (THIRD) OF TORTS: PRODUCT LIABILITY: “On the premise that tort law serves the instrumental function of creating safety incentives, imposing strict liability on manufacturers for harm caused by manufacturing defects encourages greater investment in product safety . . .” § 2 cmt. a (1998). “Subsections (b) and (c), which impose liability for products that are defectively designed or sold without adequate warnings or instructions . . . achieve the same general objectives as does liability predicated on negligence. The emphasis is on creating incentives for manufacturers to achieve optimal levels of safety in designing and marketing products.” *Id.* “Strict liability for harm caused by manufacturing defects has been supported on the ground that it promotes investment in product safety. See, e.g., *Hoven v. Kelble*, 256 N.W.2d 379, 391 (Wis. 1977) (“Strict liability is an effective deterrent; it deters the creation of unnecessary risks, or to put it positively, strict liability is an incentive to safety.”)” *Id.* at Reporters’ Note cmt. a.

¹⁶⁷ See §402A on product liability, comment c, stating that the justification for strict liability includes that “the consumer of such products is entitled to the maximum of protection at the hands of someone, and the proper persons to afford it are those who market the products.” RESTATEMENT (SECOND) OF TORTS § 402A (1966). A full reading of comment c suggests that the quoted statement refers to the safety rationale for product liability.

¹⁶⁸ *Bynum v. FMC Corp.*, 770 F.2d 556, 571 (5th Cir. 1985).

¹⁶⁹ *But see McKay*, 704 F.2d at 452 (observing that prices will beneficially discourage consumers from buying risky products only if consumers underestimate product risks).

reflect product risks.¹⁷⁰ Moreover, none of the product liability opinions that we have examined recognize that product prices will also increase due to litigation costs and thereby may undesirably chill the purchase of products. These mistakes of the courts are also made in the *Restatement (Third) of Torts: Product Liability*.¹⁷¹

Concerning compensation, Justice Traynor's opinion in *Escola* is again illustrative of judicial thinking generally. He states that "[t]he cost of an injury and the loss of time or health may be an overwhelming misfortune to the person injured, and a needless one, for the risk of injury can be insured by the manufacturer. . . ."¹⁷² Here Justice Traynor provides a compensation-based argument for product liability, but he does not consider that many individuals already have various forms of private and public insurance, lessening their need for compensation through the product liability system. He also does not recognize that, because insurance policies frequently have subrogation provisions, only a fraction of the liability payments made by defendants result in additional compensation to plaintiffs. Finally, Justice Traynor does not take into account the detrimental effect of compensating individuals for pain and suffering, which, as we explained, effectively forces them to purchase a type of insurance that most do not want.¹⁷³ When other opinions and the *Restatements* address the compensation benefit of product liability, they also do

¹⁷⁰ See, e.g., *LaRosa v. Superior Court*, 176 Cal Rptr. 224, 233 (Cal. App. Dep't Super. Ct. 1981) ("The assumption is that the entrepreneur will pass the costs of injuries along to the consumer in the form of increased prices for more dangerous products and that the consumer will be more likely to buy safer goods because they will be relatively less expensive."); *Belle Bonfils Mem'l Blood Bank v. Hansen*, 665 P.2d 118, 122 n.7 (Colo. 1983) ("Enterprise liability assumes that a product's market price ought to include the cost of accidents caused by defects in the product, and that consumer demand will shift accordingly to safer substitutes.")

¹⁷¹ See RESTATEMENT (THIRD) OF TORTS: PRODUCT LIABILITY § 2 cmt. a (1998) ("Some courts and commentators also have said that strict liability discourages the consumption of defective products by causing the purchase price of products to reflect, more than would a rule of negligence, the cost of defects."); *id.* at § 2 reporters' note cmt. a. There is no discussion of the price signalling rationale for product liability in the RESTATEMENT (SECOND) OF TORTS (1965).

¹⁷² *Escola*, 150 P.2d at 441. Justice Traynor goes on to observe that the cost to the manufacturer of providing this implicit insurance can, through higher product prices, be "distributed among the public as a cost of doing business." *Id.* This is true, but it is a very expensive form of insurance for individuals. Our discussion of litigation costs implies that consumers effectively pay premiums (in the form of higher product prices and the litigation costs that they bear) of at least twice their expected benefits.

¹⁷³ See *supra* text accompanying notes 114-118.

so in a spare manner and without reference either to the role of victims' insurance coverage or to the undesirable effect of compensation for pain and suffering.¹⁷⁴

With respect to the costs of the product liability system, the courts say little or nothing when discussing issues of public policy. Only a tangential reference to litigation costs is made by Justice Traynor in *Escola*,¹⁷⁵ and only a sentence is devoted to this topic in the *Restatements*.¹⁷⁶ Most opinions omit discussion of litigation costs altogether.¹⁷⁷

In sum, product liability opinions usually devote at most a few sentences to the safety and compensation benefits of product liability, generally overstating them, and largely ignore the costs of product liability. It is not surprising, therefore, that when courts consider public policy arguments concerning product liability, they typically find them supportive of such liability.

¹⁷⁴ See, e.g., *All Alaskan Seafoods, Inc. v. Raychem Corp.*, 197 F.3d 992, 995 (9th Cir. 1999) (making the cursory statement regarding compensation that "Manufacturers can set prices to spread the risk of defects over the entire market for their products."); *Sindell v. Abbot Laboratories*, 607 P.2d 924, 936 (Cal. 1980) (in which the only explicit reference to compensation is the statement "[t]he cost of an injury and the loss of time or health may be an overwhelming misfortune to the person injured, and a needless one, for the risk of injury can be insured by the manufacturer. . .," quoting Justice Traynor's concurring opinion in *Escola*); *Bell v. Jet Wheel Blast*, 462 So.2d 166, 171 (La. 1985) (noting without further development that one of the basic goals of strict product liability is "placing of the burden of accidental injuries caused by defective products on those who market them, to be treated as a cost of production against which liability insurance can be obtained."); *Queen City Terminals, Inc. v. Gen. Am. Transp. Corp.*, 653 N.E.2d 661, 672 (Ohio 1995) (simply pointing out that sometimes "manufacturers are in a better position to bear the costs of injuries, because they have the ability to 'distribute the losses of the few among the many who purchase the products' by charging higher prices." (citation omitted)); *Blankenship v. Gen. Motors Corp.*, 406 S.E.2d 781, 784 (W. Va. 1991) (observing only that "product liability is concerned with spreading the cost of inevitable accidents. Inherent in this cost-spreading function is the collection of what amounts to insurance premiums from all the purchasers of products . . ." footnote omitted). See also RESTATEMENT (THIRD) OF TORTS: PRODUCT LIABILITY § 2 cmt. a (1998) (solely observing that as between wholesalers and retailers, and "innocent victims who suffer harm because of defective products, the product sellers as business entities are in a better position than are individual users and consumers to insure against such losses"); RESTATEMENT (SECOND) OF TORTS § 402A cmt. c (1965) (merely asserting that "public policy demands that the burden of accidental injuries caused by products intended for consumption be placed upon those who market them, and be treated as a cost of production against which liability insurance can be obtained"). But see *McKay v. Rockwell Int'l Corp.*, 704 F.2d 444, 452 (9th Cir. 1983) (recognizing that the plaintiff would receive generous compensation for his accident through the Veterans' Benefits Act).

¹⁷⁵ His only mention of litigation costs concerns the comparison between a regime of product liability and a regime in which injured consumers sue retailers and retailers sue manufacturers (he describes the latter as "needlessly circuitous and engender[ing] wasteful litigation"). *Escola*, 150 P.2d at 442.

¹⁷⁶ The sentence appears in RESTATEMENT (THIRD) OF TORTS: PRODUCT LIABILITY § 2 reporters' note cmt. a (1998) ("Another objective traditionally thought to be promoted by strict liability is the reduction of transaction costs, which include the costs of operating the accident repair system.").

¹⁷⁷ See, e.g., *Bynum v. FMC Corp.*, 770 F.2d 556 (5th Cir. 1985); *U.S. Airways v. Elliott Equip. Co.*, 2008 WL 4425238 (E.D. Pa. 2008); *Brooks v. Beech Aircraft Corp.*, 902 P.2d 54 (N.M. 1995). But see *Torres v. Goodyear Tire & Rubber Co.*, 867 F.2d 1234, 1238-39 n.4 (9th Cir. 1989) (recognizing the significance of legal costs and citing academic literature on their magnitude).

B. Academic Writing

Early academic writing on product liability was oriented toward traditional legal concerns and instrumental goals, while much of the more recent scholarly writing on product liability has adopted an avowedly economic approach in addressing questions of legal policy. We now review both bodies of literature.

Traditional academic writing. The traditional literature on product liability is exemplified by the work of such authors as Fleming James, William Prosser, Page Keeton, and James Henderson.¹⁷⁸ These commentators generally favor product liability.¹⁷⁹ One justification that they often mention is that it advances conceptions of fairness. Prosser, for example, writes that “The public interest in human life and safety . . . justifies the imposition, upon all suppliers of products, of full responsibility for the harm they cause . . .”;¹⁸⁰ and Keeton states that “it is important to recognize as a basic reason for liability that a consumer’s expectations have been frustrated.”¹⁸¹

Traditional writing also usually considers public policy rationales for product liability, including improved safety. For instance, James believes that an object of such liability is to “cut down accidents” and that “the manufacturer is in a peculiarly strategic position to improve the safety of his products, so that the pressure of strict liability could barely be exerted at a better

¹⁷⁸ See, e.g., FOWLER V. HARPER & FLEMING JAMES, JR., *THE LAW OF TORTS* (1956); WILLIAM L. PROSSER, *HANDBOOK OF THE LAW OF TORTS* (4th ed. 1971); Henderson & Eisenberg, *supra* note 154; Henderson & Twerski, *supra* note 154; Fleming James, Jr., *General Products — Should Manufacturers Be Liable Without Negligence?*, 24 TENN. L. REV. 923 (1957); Fleming James, Jr. & John J. Dickinson, *Accident Proneness and Accident Law*, 63 HARV. L. REV. 769 (1950); Page Keeton, *Products Liability: Some Observations About Allocation of Risks*, 64 MICH. L. REV. 1329 (1965); Page Keeton, *Products Liability: The Nature and Extent of Strict Liability*, 1964 U. ILL. L. F. 693 (1964); Prosser, *supra* note 153. Other traditional scholars of product liability include Robert E. Keeton, David G. Owen, Gary Schwartz, and Marshall Shapo.

¹⁷⁹ See, e.g., James, *General Products*, *supra* note 178 at 923-24 (arguing that product liability is desirable because it spreads risks); Priest, *supra* note 153, at 505 (describing Prosser’s important role as a Reporter of the RESTATEMENT (SECOND) OF TORTS, which adopted Section 402A, imposing liability on sellers for injuries from defective products); Prosser, *supra* note 153 (suggesting that strict product liability be adopted). Page Keeton and James A. Henderson appear to favor some form of product liability, although both are concerned about its proper design, especially the scope of the definition of product defect. See, e.g., Henderson & Twerski, *supra* note 154; Keeton, *Products Liability: Observations*, *supra* note 178.

¹⁸⁰ Prosser, *supra* note 153, at 1122. In advancing this argument, it is clear that Prosser is not referring to the effect of liability on product safety or on the compensation of victims.

¹⁸¹ Keeton, *Products Liability: Nature*, *supra* note 178, at 695.

point”¹⁸² But traditional writing rarely includes discussion, even of a qualitative nature, of how market forces and regulation may already accomplish some risk reduction, and thus why the effect of product liability on safety may be limited. Most traditional writing also fails to ask whether there is empirical evidence concerning the influence of product liability on product safety. In sum, even though this writing justifies product liability in part on the basis of its ability to reduce risk, it does not offer sound reasons for believing that such liability exerts a significant effect on safety.

With regard to price signalling, traditional writers are, like the courts, mostly silent. We have been unable to find in the traditional literature on product liability more than a few scattered references to this issue.¹⁸³

The traditional literature predominantly views product liability as desirably contributing to the compensation of accident victims. James in particular is well known for having emphasized the general risk-spreading role of manufacturer liability, declaring that “the enterprise which causes losses should lift them from the individual victims and distribute them widely.”¹⁸⁴ Similarly, Page Keeton and his coauthors write that firms “have the capacity to distribute the losses of the few among the many who purchase the products . . . by charging higher prices”¹⁸⁵ Although these writers speak of the beneficial effect of product liability in promoting compensation, they generally overlook the point that private and public insurance already serves this purpose to a significant degree.¹⁸⁶ Moreover, they do not consider that

¹⁸² James, *General Products*, *supra* note 178, at 923. Some commentators, though, are skeptical of the effect of product liability on product safety. *See, e.g.*, Prosser, *supra* note 153, at 1119.

¹⁸³ One such reference is Henderson & Twerski, *supra* note 154, at 1273 (1991) (observing that “products liability would reduce the consumption of relatively risky products by increasing their monetary costs to users and consumers”).

¹⁸⁴ James, *General Products*, *supra* note 178, at 924. *See also* Priest, *supra* note 153, at 470 (“James promoted one principle — risk distribution — above all others.”). James, like Justice Traynor in *Escola*, overlooked the point that when risk distribution is accomplished through product liability, resulting in higher product prices, individuals pay effective premiums of at least twice their expected benefits. *See* note 172 *supra*. This mistake is generally made by traditional academic writers who justify product liability on the ground that it spreads risk through higher product prices.

¹⁸⁵ W. PAGE KEETON, DAN B. DOBBS, ROBERT E. KEETON & DAVID G. OWEN, PROSSER AND KEETON ON TORTS 693 (5th ed. 1984).

¹⁸⁶ The only exception of which we are aware is Keeton, *Products Liability: Observations*, *supra* note 178, at 1333-34 (commenting that the existence of private insurance reduces the need for product liability to accomplish risk spreading).

awards for pain and suffering constitute a form of insurance that individuals do not want and that therefore lowers their well-being. Hence, even though traditional writing views compensation as a paramount rationale for product liability, it fails to address questions of obvious importance about the degree to which product liability actually facilitates that goal.

Finally, traditional writing typically omits the costs of the product liability system from its analysis, although some authors mention this factor in passing.¹⁸⁷

To summarize, the traditional literature is qualitatively similar to judicial opinions in viewing product liability favorably because it furthers certain fairness goals and yields deterrence and compensation benefits. However, the traditional writing does not undertake a realistic assessment of these benefits and it essentially disregards the costs of the product liability system.

Economically-oriented academic writing. During the last several decades, a substantial literature has emerged that adopts a self-consciously economic viewpoint in analyzing product liability.¹⁸⁸ One branch of this literature emphasizes the theoretical point that product liability has a beneficial effect on product safety only to the degree that consumers lack information about product risks. This writing, which includes articles by Michael Spence and Steven Shavell, also examines how different rules of product liability function under varying assumptions concerning imperfect information.¹⁸⁹ It does not, however, attempt to assess empirically the effect of product liability on product safety.

Another body of economic literature focuses on the question whether liability for defective products should be imposed by the courts as a form of tort liability or instead be determined by contract (notably, through use of warranties). Some contributors to this literature

¹⁸⁷ See, e.g., Keeton, *Products Liability: Nature*, *supra* note 178 (noting that a potential problem with product liability is the “economic and sociological costs of adjudications.”).

¹⁸⁸ This literature is discussed in DEWEES, DUFF & TREBILCOCK, *supra* note 82, at 188-264; Mark Geistfeld, *Products Liability*, in 1 ENCYCLOPEDIA OF LAW AND ECONOMICS 287 (Michael Faure ed., 2d ed. 2009); Kessler & Rubinfeld, *supra* note 83, at 361-63; and W. Kip Viscusi, *Products Liability*, in 3 THE NEW PALGRAVE DICTIONARY OF ECONOMICS AND THE LAW 131 (Peter Newman ed., 1998).

¹⁸⁹ See Shavell, *supra* note 85; Spence, *supra* note 85. See also Andrew F. Daughety & Jennifer F. Reinganum, *Product Safety: Liability, R&D, and Signaling*, 85 AMER. ECON. REV. 1187 (1995); Dennis Epple & Artur Raviv, *Product Safety: Liability Rules, Market Structure, and Imperfect Information*, 68 AM. ECON. REV. 80 (1978); Victor P. Goldberg, *The Economics of Product Safety and Imperfect Information*, 5 BELL J. ECON. & MGMT. SCI. 683 (1974); Roland N. McKean, *Products Liability: Implications of Some Changing Property Rights*, 84 Q. J. ECON. 611 (1970); A. Mitchell Polinsky & William P. Rogerson, *Products Liability, Consumer Misperceptions, and Market Power*, 14 BELL J. ECON. 581 (1983).

argue that consumers tend to have superior information to the courts about product characteristics, their own aversion to risk, and other factors bearing on the optimal form of liability. These contributors conclude, therefore, that consumers are better off if they are allowed to choose the form of liability through contract. Scholars who develop this theme include Richard Epstein, George Priest, Paul Rubin, and Alan Schwartz.¹⁹⁰ Conversely, other contributors to this literature believe that courts generally have superior information about the need for product liability, in which case consumers are better off if liability is imposed by the courts. Scholars who elaborate this view include Steven Croley and Jon Hanson, William Landes and Richard Posner, and Kip Viscusi.¹⁹¹ Hence, the major issue addressed by the writers contributing to this branch of literature is whether liability for defective products should be selected by the parties or imposed by courts, not whether product liability is socially desirable.

Of note, too, is the economically-oriented writing of Guido Calabresi, who introduced the notion that tort liability should be imposed on the cheapest cost avoider, that is, the party who can reduce accident costs most effectively.¹⁹² According to Calabresi, this principle implies that, in the context of product accidents, manufacturers should be strictly liable for injuries to their customers when the manufacturers are better able to assess and control the risks of an accident.¹⁹³ However, he does not develop the point that strict liability would not be needed to induce manufacturers to control accident risks to the degree that market forces already

¹⁹⁰ See, e.g., RICHARD A. EPSTEIN, *MODERN PRODUCT LIABILITY LAW* (1980); PAUL H. RUBIN, AM. ENTERPRISE INST. FOR PUB. POL'Y RES., *TORT REFORM BY CONTRACT* (1993); George L. Priest, *A Theory of the Consumer Product Warranty*, 90 *YALE L. J.* 1297 (1981); Alan Schwartz, *Proposals for Products Liability Reform: A Theoretical Synthesis*, 97 *YALE L. J.* 353 (1988). But see Abraham L. Wickelgren, *The Inefficiency of Contractually-Based Liability with Rational Consumers*, 22 *J. L. ECON. & ORG.* 168 (2006) (arguing that court-imposed liability is needed even when consumers correctly judge a product's risk).

¹⁹¹ See, e.g., W. KIP VISCUSI, *REFORMING PRODUCTS LIABILITY* (1991); Croley & Hanson, *supra* note 153; William M. Landes & Richard A. Posner, *A Positive Economic Analysis of Products Liability*, 14 *J. LEGAL STUD.* 535 (1985).

¹⁹² See generally CALABRESI, *supra* note 7; Guido Calabresi & Jon T. Hirschoff, *Toward a Test for Strict Liability in Torts*, 81 *YALE L. J.* 1055 (1972).

¹⁹³ Thus, for example, a manufacturer of a motorized lawnmower should be strictly liable for accidents caused by a defective blade breaking off and striking the owner. Conversely, the owner of the lawnmower should bear her own losses if she drives it on a road and has an accident. See Calabresi and Hirschoff, *supra* note 192, at 1063-64.

accomplish this task,¹⁹⁴ and he omits mention of regulation as an alternative. In addition, Calabresi does not attempt to assess whether the costs of the product liability system outweigh its product safety and compensation benefits.¹⁹⁵

Hence, although there is a substantial body of writing about the economics of product liability, essentially no one attempts to assess its benefits and costs.¹⁹⁶ As we explained, the focus tends to be on the theoretical effects of product liability under different assumptions about consumer information, or on the question of whether product liability rules should be chosen by the parties or by the courts, or on the concept of the least-cost avoider.¹⁹⁷

C. Public Commentary

Many newspapers, magazines, television networks, and policy-oriented organizations favor product liability. The main reasons they give are essentially those provided by the courts and traditional academic writers. Thus, they argue that product liability promotes fairness. For example, *The Washington Post* maintained that product liability is necessary “to ensure justice for victims” and *The New York Times* claimed that it is needed in order to “punish the makers and sellers of unsafe products.”¹⁹⁸ A second justification they furnish is that product liability encourages product safety. A *USA Today* article, for instance, stated that product liability lawsuits provide an incentive for firms to make safer products and an *NBC News* report observed

¹⁹⁴ He observes only that bargaining between a buyer and a seller could render liability irrelevant. See CALABRESI, *supra* note 7, at 162.

¹⁹⁵ In Calabresi and Hirschhoff, *supra* note 192, the compensatory benefits and costs of the product liability system are not discussed. In Calabresi’s *The Costs of Accidents*, there is a qualitative discussion of the benefits and costs of the tort system in general, but not of the product liability system in particular. For his discussion of product liability, see CALABRESI, *supra* note 7, at 161-73.

¹⁹⁶ However, some scholars employ benefit-cost analysis to study related questions. See DEWEES, DUFF & TREBILCOCK, *supra* note 82 (focusing on a comparison of strict product liability to negligence-based liability with respect to the goals of deterrence, compensation, and corrective justice); see also Stephen D. Sugarman, *Doing Away with Tort Law*, 73 CAL. L. REV. 555 (1985) (analyzing the limited deterrence and compensation benefits of tort law generally).

¹⁹⁷ Although these have been the major topics addressed in the economic literature on product liability, numerous other issues have been studied as well. See, e.g., Omri Ben-Shahar, *Should Products Liability Be Based on Hindsight?*, 14 J.L. ECON. & ORG. 325 (1998); James Boyd & Daniel E. Ingberman, *Should ‘Relative Safety’ Be a Test of Product Liability?*, 26 J. LEGAL STUD. 433 (1997); Paul Burrows, *Consumer Safety Under Products Liability and Duty to Disclose*, 12 INT’L REV. L. & ECON. 457 (1992); Bruce Hay & Kathryn E. Spier, *Manufacturer Liability for Harm Caused by Consumers to Others*, 94 AM. ECON. REV. 1700 (2005); Janusz A. Ordover, *Products Liability in Markets with Heterogeneous Consumers*, 8 J. LEGAL STUD. 505 (1979).

¹⁹⁸ See, respectively, Op-Ed., *Lawsuits: The People’s Last Resort*, WASH. POST, July 10, 1999, at A17; *Another Damaging Damages Bill*, N.Y. TIMES, July 7, 1998, at A14.

that the judgment against tobacco companies sent “a strong message” not to sell dangerous products.¹⁹⁹ A third basis they offer for product liability is that it compensates injured consumers. For example, a *CBS News* broadcast asserted that such compensation is a primary purpose of product liability law, and a Public Citizen report urged legislators to take into account that product liability facilitates injured consumers’ ability “to recoup their economic losses.”²⁰⁰

There is, however, significant criticism of the product liability system by the business press and conservative think tanks. For example, a *Wall Street Journal* article concluded that there have been “thousands of small businesses driven under by . . . one product-liability case.”²⁰¹ An American Enterprise Institute report stated that “[p]roducts liability has become a means of transferring wealth from the guilty and innocent alike to attorneys’ and random plaintiffs’ pockets. This does not deter design defects — it just deters design.”²⁰² The theme of these writings is that product liability is random in its application, raises prices, inhibits innovation, causes desirable products to be withdrawn from the marketplace, and drives

¹⁹⁹ See, respectively, Joan Biskupic, *Court Draws Line on State Safeguards*, USA TODAY, Feb. 21, 2008, at 3A; NBC News Transcripts, *Reactions Over Record-High Judgment Against Tobacco Companies*, July 15, 2000. See also Dennis A. Henigan, Op-Ed., *Sue The Gun Makers*, WASH. POST, Oct. 29, 1999, at A31 (“The threat of product liability litigation is the only incentive gun makers have to improve the safety of their products.”); Bob Herbert, *In America; Contract On the Consumer*, N.Y. TIMES, Mar. 4, 1995, § 1, at 19 (product liability lawsuits have a “deterrent effect”); CBS News Transcripts, *Number of Lawsuits Based on Product Liability Law Rising*, Oct. 23, 1995 (without the threat of large damage awards, there is no reason for companies to make their products safer or take unsafe products off the market); Robert J. Samuelson, *Lawyer Heaven*, WASH. POST, June 22, 1994, at A21 (product liability law “deters dangerous products”); Meghan Mulligan & Emily Gottlieb, *Lifesavers: CJ&D’s Guide to Lawsuits That Protect Us All*, STUD. & WHITE PAPERS (Center for Just. & Democracy, New York, N.Y.) 2002, available at <http://www.centerjd.org/archives/studies/Lifesavers.pdf> (argues that lawsuits concerning dangerous products make society safer by deterring negligent behavior).

²⁰⁰ CBS News Transcripts, *Number of Lawsuits Based on Product Liability Law Rising*, Oct. 23, 1995; *New Federal Products Deal Hurts Consumers, Workers and Preempts Law in All 50 State*, CONGRESS WATCH (Pub. Citizen, Wash., D.C.) July 1, 1998, available at http://www.citizen.org/print_article.cfm?ID=5346. See also, e.g., NPR Transcript, *Fertilizer Company Sued Following Oklahoma City Blast*, May 19, 1995 (reporting that Rich Vernet of Citizen Action argues against product liability reform because it would undermine the full compensation of victims).

²⁰¹ See *Lawyers Torch the Economy*, WALL ST. J., Apr. 6, 2001, at A14.

²⁰² Ted Frank, *Rollover Economics: Arbitrary and Capricious Product Liability Regimes*, AEI OUTLOOK SERIES (Am. Enterprise Inst. for Pub. Pol’y Res., AEI Online, Wash., D.C.) Jan. 4, 2007, available at <http://www.aei.org/outlook/25395>.

companies out of business.²⁰³ The usual recommendation is that product liability be reformed in ways that reduce its scope.²⁰⁴

The foregoing public commentary on product liability, like the corresponding discussion by the courts and traditional academic writers, is incompletely developed and supported. The proponents of product liability rarely provide justification for the view that it will improve safety or that it is a desirable method of compensation.²⁰⁵ Moreover, they typically ignore the costs of the product liability system.²⁰⁶ Similarly, most of the critics of product liability fail to supply evidence that product liability does not lead to greater safety or better compensation.²⁰⁷ Instead,

²⁰³ See, e.g., CBS News Transcripts, *Warning Labels Placed on Products* (Jan. 29, 2000) (observing that when companies lose product liability lawsuits, “the cost is mostly passed on to consumers...to the tune of more than \$152 billion in...higher prices.”); Milton R. Copulos, *An Rx for the Product Liability Epidemic* (Heritage Found., Wash., D.C.) May 15, 1985 (claiming that the large number of product liability cases is “threatening the very existence of some industries”); Editorial, *Review & Outlook: Litigation Liberalism*, WALL ST. J., May 12, 1992, at A24 (stating that the risk of product liability lawsuits retards product innovation); *Overload*, WASH. POST, May 8, 1995, at A20 (arguing that reform of product liability law is needed because “the present system is so arbitrary and unfair”); Samuelson, *supra* note 207 (noting that some products, such as light aircraft, have been taken off the market because of liability fears). See also Scott Gottlieb, *More Drugs Will Mean More Lawsuits*, AEI ARTICLES & COMMENTARY (Am. Enterprise Inst. for Pub. Pol’y Res., AEI Online, Wash., D.C.) Feb. 26, 2003, available at <http://www.aei.org/article/16108> (arguing that product liability in the pharmaceutical industry raises prices and limits innovation); Stephen B. Presser, *How Should the Law of Products Liability Be Harmonized? What Americans Can Learn from Europeans*, GLOBAL LIABILITY ISSUES VOL. 2 (Manhattan Inst. for Pol’y, New York, N.Y.), Feb. 2002, available at http://www.manhattan-institute.org/html/gli_2.htm (observing that product liability is random in its application and drives up product prices).

²⁰⁴ See, e.g., Copulos, *supra* note 203 (proposing a list of reforms, including a statute of repose, a limitation on contingent fees, and restrictions on awards for noneconomic losses); Frank, *supra* note 202 (advocating a cap on noneconomic damages and more objective safety standards); *Guns and Poses*, WALL ST. J., Apr. 17, 2003, at A12 (arguing that Congress should pass legislation that would limit lawsuits against the firearms industry); Presser, *supra* note 203 (recommending such changes as the abolition of contingent fees and punitive damages, and the adoption of the loser-pays rule regarding legal fees); Samuelson, *supra* note 203 (suggesting that making the losing side pay legal fees would be a “genuine remedy” for many of the problems associated with product liability litigation); *Trial Lawyers’ Triumph*, WASH. POST, Mar. 19, 1996, at A16 (recommending caps on punitive damages in product liability lawsuits); *The Trials of Merck*, WALL ST. J., November 18, 2004, at A18 (advocating that FDA approval of a drug should insulate its manufacturer from product liability).

²⁰⁵ None of the articles cited *supra* notes 198-200 give such justification. For example, in *Lawyer Heaven*, *supra* note 199, it is asserted that product liability will improve safety, but the effects of market forces and regulation on product safety are ignored. Similarly, in *In America; Contract on the Consumer*, *supra* note 199, it is claimed that product liability will lead to desirable compensation, but the fact that insurance already provides significant compensation to accident victims is overlooked.

²⁰⁶ This also is true about the articles cited *supra* notes 198-200.

²⁰⁷ None of the articles cited *supra* notes 201-204 provide evidence to support the claim that the deterrent effect of product liability is small. Furthermore, none of these articles take into account the significance of insurance as a source of compensation, although some observe that litigation costs reduce the amount of money that victims obtain. See, e.g., *Litigation Liberalism*, *supra* note 203 (noting that most of what defendants pay goes into the pockets of the plaintiffs’ bar).

they stress that product liability raises product prices and causes firms to withdraw products, though they do not recognize that these consequences are socially undesirable only if the litigation cost-related component of the price increase is sufficiently high.²⁰⁸

VIII. Contrast Between Product Liability and Stranger Liability

For the purposes of our analysis, product liability should be distinguished from the liability of firms for harms caused to parties who are not their customers — that is, to “strangers.”²⁰⁹ Such victims include, for example, pedestrians struck by delivery trucks, tourists prevented from using a beach because of an oil spill, and bystanders hurt by the collapse of a crane at a construction project.

There is a crucial difference between situations in which strangers are harmed and those in which customers are injured.²¹⁰ If strangers are harmed by a firm, the firm would not expect to lose sales and profits as a result, whereas if its customers are injured, it would expect to suffer these losses, as we have stressed. A pizza parlor would not be likely to suffer diminished sales if its delivery vehicles hit pedestrians, but it would lose business if its pizzas caused food poisoning of its customers.²¹¹ The important implication of these observations is that market forces will not induce firms to increase safety if those at risk are strangers.

A related difference between situations in which customers are victims and those in which strangers are victims concerns price signalling. As we explained in Part III, when the victims of product accidents are customers, price increases due to liability will not improve

²⁰⁸ None of the articles cited *supra* notes 201-204 discuss the litigation cost-related price distortion.

²⁰⁹ *See, e.g.*, RESTATEMENT (THIRD) OF TORTS § 3 cmt. f, illus. 1 (Proposed Final Draft No. 1, 2005) (illustrating negligence by example with a power company liable to a stranger because the company strung a low power line across a river that came into contact with mast of the non-customer’s sailboat and cause severe electric burns); *see also* 1 DOBBS, *supra* note 1, § 227, at 578 (“Among strangers—those who are in no special relationship that may affect duties owed—the default rule is that everyone owes a duty of reasonable care to others to avoid physical harms.”).

²¹⁰ The remaining discussion in this section is based on ideas developed in Shavell, *supra* note 85.

²¹¹ Analogously, an oil company probably would not lose sales if one of its tankers caused an oil spill, but it would expect to suffer losses if its gasoline damaged car engines. In the case of the Exxon Valdez oil spill, the largest environmental disaster in North American history, Exxon’s revenue actually rose in the quarter after the spill. Exxon reported \$22.2 billion in revenue in first quarter of 1989, the quarter during which the spill occurred, and \$23.6 billion in revenue in the second quarter of 1989. *Exxon Corp.: Interim Consol. Earnings: June '89*, STANDARD & POOR'S DAILY NEWS, July 24, 1999.

customers' purchase decisions to the extent that they are well informed about product risks.²¹² Higher pizza prices will not be needed to discourage consumption of pizza if consumers know about a high risk of food poisoning. But when the victims of product accidents are strangers, price increases due to liability will be needed because the customers of those products will otherwise ignore the injuries to strangers caused by their purchases. Higher pizza prices, reflecting accident costs, are needed to discourage consumers from buying pizza from sellers whose delivery vehicles cause harm to pedestrians. In sum, the price signalling benefit of liability is generally greater when the victims of product accidents are strangers than when they are customers.²¹³

Both because of the ineffectiveness of market forces in creating safety and the need for product prices to reflect risk when victims are strangers, the case for liability is stronger in that case than when victims are customers.

IX. Conclusion

We have explained in this Article that when product liability is viewed in terms of its benefits and costs, there are strong reasons for doubting its desirability, at least for many widely sold products. The main bases for our conclusion are as follows. First, market forces and regulation are likely to be particularly important for products sold in high volume, considerably reducing the need for product liability to encourage safety. Moreover, the available empirical evidence indicates that product liability has not in fact measurably enhanced product safety for such products. Second, the price signalling benefit of product liability is limited and is likely to be largely, if not entirely, offset by the price distortions caused by litigation costs and awards for nonmonetary losses. Third, product liability does not appear to substantially promote the compensation goal because this objective is already achieved to a significant extent through private and public insurance. Furthermore, product liability actually detracts from the compensation goal because it provides damages for nonmonetary losses. Finally, the product

²¹² See *supra* Part III.A.

²¹³ The remainder of our analysis is essentially the same if victims are strangers. In particular, regulation tends to improve safety, the compensation rationale for liability is weak, and the costs of the liability system are high.

liability system generates high legal expenses, equaling or exceeding the payments received by plaintiffs.

If our assessment of product liability is accepted, it implies that serious consideration should be given to curtailing such liability. This might be accomplished through changes in legal doctrine that would make the imposition of product liability depend on several factors suggested by our analysis. One factor would be whether consumers are likely to know about a product's risk. Another would be whether the product is subject to significant safety regulation. We would expect that consideration of these two factors would, for reasons that we have explained, disfavor imposition of liability for harms caused by widely sold products. A third factor would be the likelihood that the plaintiff has insurance coverage sufficient to compensate for the monetary losses sustained. Adoption of these factors would encourage the courts to reduce the scope of product liability when such liability would be unlikely to significantly promote product safety or compensation, but still allow for the imposition of product liability when it would be useful.²¹⁴

Legislative change could also be contemplated that would limit or eliminate product liability in certain industries or for certain widely sold products. Indeed, this has already been done, for example, for general aviation aircraft and for vaccines.²¹⁵ Reducing or abolishing product liability might even make sense for the majority of widely sold products.

²¹⁴ We discuss and develop these factors in another article, where we explain how they could be employed by the courts. See A. Mitchell Polinsky & Steven Shavell, A Revision of Product Liability Doctrine to Better Promote Its Policy Goals (manuscript in progress).

²¹⁵ See General Aviation Revitalization Act of 1994, 49 U.S.C.A. § 40101; National Childhood Vaccine Injury Compensation Act of 1986, 42 U.S.C. § 300aa-22(b).