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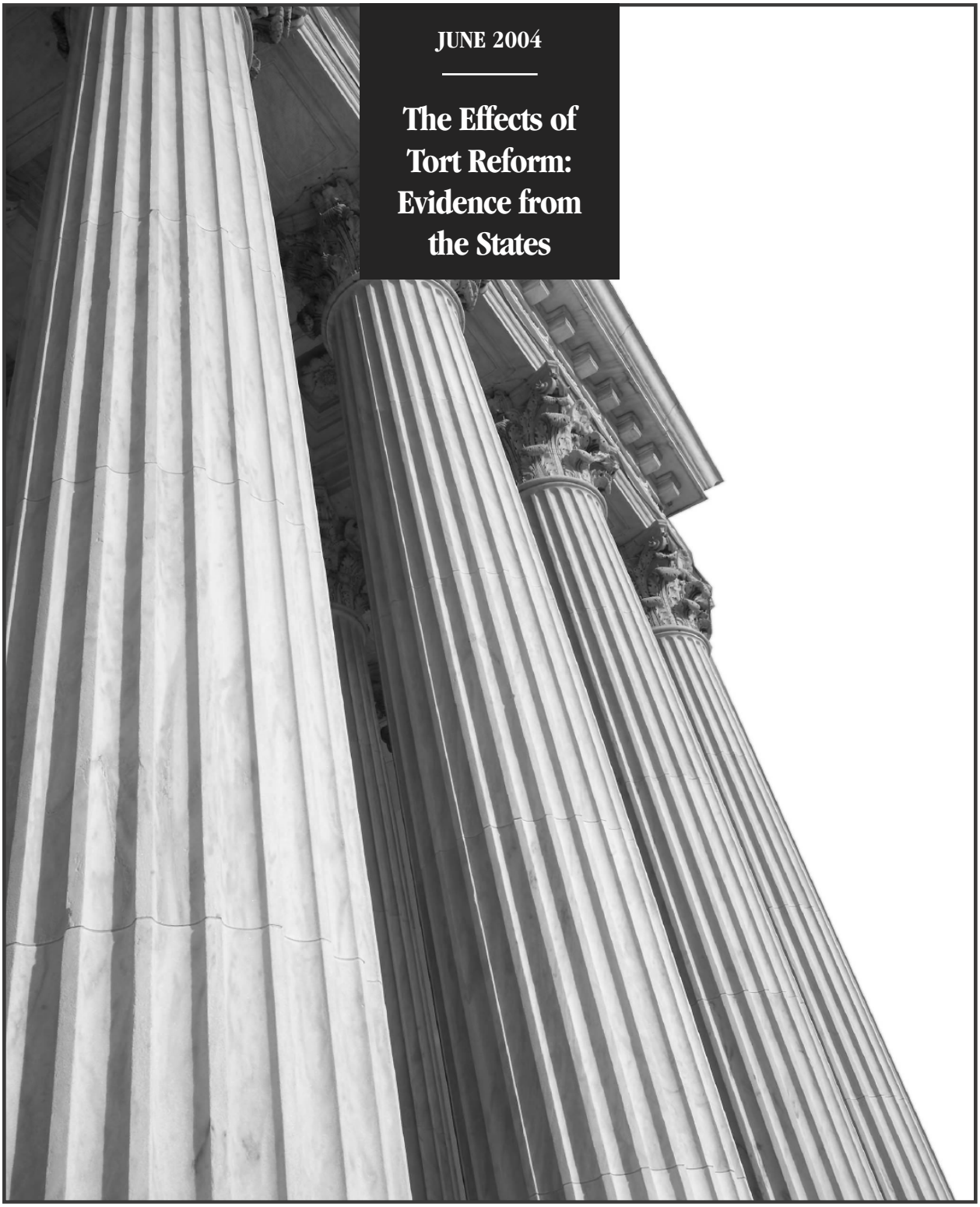

JUNE 2004

The Effects of Tort Reform: Evidence from the States

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June 2004

The Congress of the United States ■ Congressional Budget Office

Preface

In response to the perception that liability insurance coverage was becoming more costly and less available, most states enacted legislation in the mid-1980s that reformed the common-law rules and other court procedures involving tort litigation. Despite those reforms, the U.S. tort liability system remains controversial. Some critics contend that the system, which holds parties liable for injuries to people or their property, is costly and inefficient, arbitrary and open to abuse. Opponents of tort reform disagree with those criticisms and also point to a lack of evidence on the effectiveness of past reform efforts.

Several bills now before the Congress would change the rules at the federal level that govern tort claims for medical malpractice and asbestos exposure and claims litigated as class actions. Most states have already enacted reforms similar to those under consideration. This Congressional Budget Office (CBO) paper reviews the major studies that evaluate the effects of state-level tort reforms and assesses the relevance of that research to similar federal proposals. Both this report and a companion CBO study from October 2003, *The Economics of U.S. Tort Liability: A Primer,* were prepared at the request of the Senate Budget Committee. In accordance with CBO's mandate to provide impartial analysis, this report makes no recommendations.

Cary Elliott of CBO's Microeconomic and Financial Studies Division wrote the paper under the supervision of David Moore and Roger Hitchner. The author received valuable comments and assistance from Robert Arnold, David Austin, Perry Beider, Stuart Hagen, Allison Percy, and Shou Wang of CBO, as well as Jeff O'Hara, formerly of CBO, and Albert Yoon of the University of Chicago. (The assistance of external reviewers implies no responsibility for the final product, which rests solely with CBO.)

Christine Bogusz edited the paper, and John Skeen proofread it. Angela Z. McCollough prepared drafts of the manuscript, Allan Keaton and Maureen Costantino prepared the report for publication, and Maureen Costantino designed the cover. Lenny Skutnik printed the copies of the report, and Annette Kalicki produced the electronic versions for CBO's Web site (www.cbo.gov).

Douglas Holtz-Eakin
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Summary

Reforming the nation's tort system—by enacting legislation to change the common-law rules that state and local courts use in cases of injury to people or their property—has become a prominent issue at the federal level. The Congress is considering legislation to restrict damage awards in medical malpractice and asbestos lawsuits and to transfer class-action suits to the federal court system. However, most states have already enacted tort reforms similar to those being considered by federal lawmakers. This Congressional Budget Office (CBO) paper reviews the major recent studies that evaluate state-level tort reforms and assesses the relevance of that research for evaluating similar proposals at the federal level.

The studies examined by CBO have empirically tested whether reforms undertaken by the states in recent decades have had a measurable impact on tort activity and its effects on economic performance. A number of those studies have found that state-level tort reforms have decreased the number of lawsuits filed, lowered the value of insurance claims and damage awards, and increased insurers' profitability as measured by payouts relative to premiums in the short run.

Those findings, however, should be interpreted cautiously, for several reasons. First, data are limited, and the findings are not sufficiently consistent to be considered conclusive. Second, the more persuasive studies were limited in that they analyzed specific types of torts, such as claims of bodily injury from automobile accidents, making generalizations difficult. Third, because tort reforms are often enacted in packages at the state level, distinguishing among the effects of different types of tort reforms can be difficult, obscuring the conclusions that may be drawn by federal policymakers.

The Goal and Status of Tort Reform in the States

At the heart of many states' tort reform statutes is the presumption that too many tort claims are filed and that court awards, such as those for punitive damages (which are intended to punish a defendant for willful and wanton conduct) and pain and suffering, tend to be excessive. Tort reforms that limit the amount that can be awarded for such noneconomic damages, as well as those that decrease awards by the amount of payments from third-party sources, aim to make it less worthwhile to pursue marginal cases—thus reducing the number of such cases and inefficiencies in the tort system. Other tort reforms seek to limit liability by making it more difficult to pursue cases against multiple defendants. Still other reforms focus on procedural changes, again making it less likely that marginal cases will be pursued.

Although tort reform is a continuing issue, it gained prominence in the mid-1980s, when many states enacted reforms in response to a perceived problem in insurance costs. Those reforms sought to limit exposure to liability, thereby reducing general insurance premiums. Indeed, premiums fell by 40 percent for some commercial policies in 1987, after tripling in the 1984-1986 period.

Since 1986, states have put in place various other tort reforms, with different specifics and in different combinations. (See Summary Table 1 for a list of selected reforms and the differences among states.) For example, although 34 states enacted a cap on punitive damages, those caps vary. Some caps limit punitive damages to two or three times compensatory damages (which cover medical costs and lost wages); others are for fixed amounts ranging from $250,000 to $10 million. Furthermore, some reforms focus on specific areas, such as medical malpractice torts, whereas others are applied more widely. Those differences make it difficult to identify statistically which re-

forms, applied in what manner, are most effective in achieving their intended effects at the state level.

General Findings from the Empirical Literature on Tort Reform

The most consistent finding in the studies that CBO reviewed was that caps on damage awards reduced the number of lawsuits filed, the value of awards, and insurance costs (see Summary Table 2). One study of automobile-related torts found that caps on noneconomic damages decreased not only the value of noneconomic claims made to insurance companies but also the number of lawsuits filed. Other studies suggested that those caps led to increases in insurers' profitability for both medical malpractice and general liability insurance. (Evidence on whether premiums were affected was mixed.)

Yet even those findings must be viewed in context. As a whole, the studies provided little systematic evidence that any one type of reform had a significant impact on any of the various outcome measures studied. Few of the findings—except for a reduction in the losses experienced by insurers—were independently corroborated by other studies. Some studies were unable to document any measurable effects from the tort reforms, a result that may be more reflective of the lack of data than of any failure of the reforms.

At least two issues complicate the analysis of tort reform. First, data limitations preclude separately estimating the effect of each of the many types of reform. Second, it is difficult to control for differences between states that reformed their tort system and those that have not. Controlling for such differences is critical in assessing the effect of tort reform on outcomes such as the level of insurance premiums.

Specific Findings by Type of Tort Reform

The nine studies that CBO reviewed looked at the effects of various types of tort reform: limits on damages, modifications to joint-and-several liability, changes to the collateral-source rule, and reforms considered as a group. Some studies evaluated more than one type of reform.

Caps on Noneconomic Damages

Four of the studies analyzed the effect of caps on noneconomic damages. One of those, a 1999 study by Mark J. Browne and Robert Puelz, found that those caps led to lower noneconomic insurance claims by victims of automobile bodily injury and significantly reduced the probability that they would file a lawsuit. The other three studies—by Kenneth Thorpe (2004), Patricia Born and W. Kip Viscusi (1998), and W. Kip Viscusi and coauthors (1993)—found that insurers' profitability, as measured by their losses for either their general liability or medical malpractice lines, or both, increased after the reform, although the study by Viscusi and coauthors found no significant effect on loss ratios. Two of the three studies found that premiums also declined significantly for at least some insurance lines; the third found no significant effect.

Two of those studies looked at the impact of caps on punitive damages separately from other reforms. Browne and Puelz found that those caps had a negative effect on noneconomic claims but a small positive impact on economic claims, which yielded an overall negative impact on total claims. Their study also found that caps on punitive damages led to the filing of fewer lawsuits. Viscusi and coauthors found that punitive damage caps had a negative impact on general liability premiums but not premiums for medical malpractice insurance.

A fifth study, by Albert Yoon (2001), analyzed legislation that imposed caps on noneconomic damages and punitive damages as well as limits on wrongful death suits. That study found that the recovery of damages by plaintiffs fell significantly after the enactment of those reforms.

Modifications to Joint-and-Several Liability

Four studies looked at the impact of reforming (either by restricting or eliminating) the common-law rule of joint-and-several liability, under which any one injurer or subset of injurers can be held responsible for paying all of the damages for injuries caused by more than one party.

Thorpe found no significant effect from that reform. Although Mark J. Browne and coauthors (1994) found no impact on the number of lawsuits filed after the reform was enacted, the researchers did find a significant surge in cases before the reform took effect. Additionally, Browne and Puelz found that reform of joint-and-several liability ed to an increase in the value of noneconomic awards but found no other significant effects. Finally, Viscusi and coauthors offered evidence that joint-and-several liability reform was a factor in lowering insurers' losses in the mid-1980s and that it had a negative impact on premiums.

Summary Table 1.

Selected Tort Reforms Enacted Since 1986

Type of Reform	Number of States	Summary	States That Have Enacted the Reform
Modify Joint-and-Several Liability	38	States have based the amount for which a defendant can be held liable on the proportion of fault attributed, but the formulas differ substantially from state to state. In addition, most of the reforms apply to specific types of torts or have other restrictions.	Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Florida, Georgia, Hawaii, Idaho, Illinois, Iowa, Kentucky, Louisiana, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Dakota, Ohio, Oregon, Pennsylvania, South Dakota, Texas, Utah, Vermont, Washington, West Virginia, Wisconsin, Wyoming
Modify the Collateral-Source Rule	25	Typical reforms either permit evidence of collateral-source payments to be admitted at trial, allow awards to plaintiffs to be offset by other payments, or both.	Alabama, Alaska, Arizona, Colorado, Connecticut, Florida, Georgia,* Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas,* Kentucky, Maine, Michigan, Minnesota, Missouri, Montana, New Jersey, New York, North Dakota, Ohio, Oklahoma, Oregon
Limit Noneconomic Damages	23	The caps range from $250,000 to $750,000. More than half of the reforms apply to torts involving medical malpractice.	Alabama,* Alaska, Colorado, Florida, Hawaii, Idaho, Illinois,* Kansas, Maryland, Michigan, Minnesota, Mississippi, Montana, Nevada, New Hampshire,* North Dakota, Ohio, Oklahoma, Oregon,* Texas, Washington,* West Virginia, Wisconsin
Limit Punitive Damages	34	Various types of limits include outright bans; fixed dollar caps ranging from $250,000 to $10 million; and caps equal to a multiple of compensatory awards.	Alabama, Alaska, Arizona, Arkansas, California, Colorado, Florida, Georgia, Idaho, Illinois,* Indiana, Iowa, Kansas, Kentucky, Louisiana, Minnesota, Mississippi, Missouri, Montana, Nevada, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, South Carolina, South Dakota, Texas, Utah, Virginia, Wisconsin

Source: American Tort Reform Association, *Tort Reform Record* (December 31, 2003), pp. 2-3, available at www.atra.org/files.cgi/7668_Record12-03.pdf.

Notes: The American Tort Reform Association (ATRA) does not list reforms enacted prior to 1986, when the association was founded. Although the ATRA lists Vermont as enacting reform of joint-and-several liability since 1986, Vermont actually enacted that reform in 1985.

See Box 1 for definitions of the tort terms used in this table.

* The only relevant law enacted since 1986 was found to violate the state's constitution.

Summary Table 2.

Findings from the Major Studies of State-Level Tort Reforms Published Since 1993

	Viscusi and others (1993)	Browne, Lee, and Schmit (1994)	Born and Viscusi (1998)
Applicability	General and medical malpractice	General	General and medical malpractice
Modifications to Joint-and-Several Liability	1986 reforms led to a large reduction in losses for general liability insurers; 1985-1986 reforms led to a large decrease in general liability premiums (only the 1985 reforms had an impact on medical malpractice premiums); no effect on loss ratios detected.	No impact on number of claims filed after reform but a significant surge in court filings before reform took effect.	Included in "other" reforms.
Repeal of the Collateral-Source Rule	No effect detected, but reform was combined with caps on contingent fees, modifications of statutes of limitations, and other reforms.	Not studied.	Included in "other" reforms.
Caps on Noneconomic Damages	Large decline in losses for both general and medical malpractice insurance. No effect detected for either premiums or loss ratios.	Not studied.	Led to increased profitability for insurers and a decrease in premiums.
Restrictions on Punitive Damages	Decline in premiums for general liability insurance. No other effect found.	Not studied.	Included in "other" reforms.
Other Reforms	General limits on liability awards or established immunities from prosecution seem to have reduced general liability premiums, but no other effect was found.		Led to an increase in insurers' profitability and a decline in premiums for medical malpractice liability. For general liability, little effect was found.
Comments	As a package, reforms enacted between 1985 and 1987 significantly reduced insurers' losses, with a less dramatic decline in premiums, which yielded an overall drop in loss ratios.		

Continued

Summary Table 2.

Continued

Kessler and McClellan (1996, 2000, 2002)	Browne and Puelz (1999)	Yoon (2001)	Thorpe (2004)
Medical malpractice	Automobile bodily injury	Medical malpractice	Medical malpractice
Included as an "indirect" reform; see "comments."	Led to an increase in the dollar value of noneconomic claims; no statistically significant effect on the value of economic claims or the number of court cases filed.	Not studied.	Found no statistically significant effect.
Included as a "direct" reform; see "comments."	Decrease in the value of both economic and noneconomic claims; no effect on the number of court cases filed.	Not studied.	"Discretionary" collateral-source offsets (those considered at a judge's discretion) led to increased profitability (decreased loss ratios) for insurers. No significant difference in premiums found.
Included as a "direct" reform; see "comments."	Decline in the value of noneconomic claims; a significant reduction in the number of court cases filed. No effect on economic claims.	Led to a decrease in the amount that plaintiffs recovered (but this reform was combined with a cap on punitive damages and a limit on wrongful death claims).	Led to increased profitability (decreased loss ratios) and lower premiums earned for medical malpractice liability insurers.
Included as a "direct" reform; see "comments."	Decrease in the value of noneconomic claims, an increase in the value of economic claims, and an overall decline in the value of total claims; an increase in the number of claims filed.	Decrease in the amount that plaintiffs recovered (but this reform was combined with a cap on noneconomic damages and a limit on wrongful death claims).	
Among "other" reforms, abolishing mandatory prepayment interest was included as a "direct" reform. "Indirect" reforms included imposing mandatory periodic payments, establishing patient-compensation funds, and capping contingent fees.	The presence of sanctions on frivolous suits or defenses, prejudgment interest, and structured settlements led to a decrease in the value of both economic and noneconomic claims and to a drop in the number of court cases filed.	A limit on wrongful death claims combined with caps on noneconomic and punitive damages led to a decrease in the amount that plaintiffs recovered.	
States that enacted tort reforms had lower Medicare spending for hospitalization of elderly patients with heart disease and heart attacks, with no significant increase in adverse health outcomes. Those states also had lower malpractice claims. "Direct" reforms helped to lower some of the costs of claims, whereas "indirect" reforms actually increased several measures of claims costs.			

Source: Congressional Budget Office based on the studies shown here (full citations can be found in the bibliography of this report).

Note: See Box 1 for definitions of the tort terms used in this table.

Reform of the Collateral-Source Rule

The two studies that separately analyzed the impact of reform of the collateral-source rule found some effect. Browne and Puelz determined that both economic and noneconomic damages were reduced by reforms that allowed evidence of payment from sources other than the defendant to be introduced at trial, third-party payments to be subtracted from awards, or both. Thorpe found that "discretionary" collateral-source offsets (those considered at a judge's discretion) led to increased profitability for insurers.

Reforms Considered as a Group

Many of the studies looked at the effect of various reforms as a group. Browne and Puelz, for instance, found that the presence of sanctions on frivolous suits or defenses, prejudgment interest, structured settlements, or any combination thereof led to a decrease in the value of both economic and noneconomic claims and in the number of lawsuits filed for automobile-related torts.[1] In addition, several studies by Daniel P. Kessler and Mark B. McClellan presented evidence that tort reform in medical malpractice led to a reduction in unnecessary medical expenditures, implying both the existence of defensive medicine (excessive tests and procedures that limit doctors' malpractice liability but have minimal medical benefit) and the ability of tort reform to reduce its practice. However, those studies were conducted on a restricted sample of patients, whose treatment and behavior cannot be generalized to the population as a whole. Related research by Kessler and McClellan also found that tort reforms in general led to fewer medical malpractice claims. In particular, those reforms that directly capped awards led to a decrease in the number of claims paid, the number of claims incurring legal expenses, and the time it took to resolve claims; the other reforms that the authors studied tended to have the opposite effect.

1. Reforms related to prejudgment interest limit the interest that may accrue on a loss during the time before the court awards damages. Reforms related to structured settlements allow award payments to be staggered over time.

The Effects of Tort Reform: Evidence from the States

Introduction

Tort reform has become a prominent issue at the federal level. Over the past year, the Congress has considered several specific tort reform bills: for example, the Asbestos Compensation Fairness Act of 2003 (H.R. 1586), which would prohibit punitive damages in asbestos cases, and the HEALTH Act (H.R. 5) and the Common Sense Medical Malpractice Reform Act of 2003 (H.R. 321), both of which would limit damages in medical malpractice cases. More general proposals for tort reform have also come before the Congress, notably the Class Action Fairness Act of 2004 (S. 2062), which would have allowed more cases to be transferred from state courts to federal courts. In many instances, states have enacted tort reform proposals similar to those being considered at the federal level. This paper reviews the major studies published since 1993 that evaluate state-level tort reforms and assesses the relevance of that research for evaluating similar federal proposals.

A tort is an injury to someone's person, reputation, or feelings or damage to real property.[1] Under the U.S. system of tort liability, courts can hold injurers liable for many different types of torts, such as those caused by automobile accidents, contract fraud, trespass, medical malpractice, and defective products. The major categories of tort litigation are automobile-related torts (53 percent), premises liability (16 percent), and medical malpractice (15 percent).[2] The plaintiff in a tort suit can seek compensation of two types: compensatory damages to cover the "economic" cost of an injury—for example, medical costs and lost wages—and the "noneconomic" costs of pain and suffering and punitive damages intended to punish a defendant for willful and wanton conduct. (See Box 1 for a list of definitions of some common tort terms.) U.S. tort law is almost exclusively contained in state law, and the large majority of tort cases are filed in state courts. In 2000, more than 700,000 torts were filed in state general courts, compared with only 37,000 in federal courts. Tort law is based primarily on common law—in which judicial rules are developed on a case-by-case basis by trial judges—rather than on legislation.

Tort Liability as a Tool for Achieving Efficiency and Equity

The risk of injury or loss is inherent in everyday life: consumers are injured or killed by defective products, workers are hurt on the job, train passengers are injured by derailments, and patients are harmed by medical errors. Markets provide broad incentives to control the number and costs of such injuries. For example, enhanced safety features can give a product a marketing advantage over competitors. Furthermore, insurance allows individuals and firms to reduce the financial uncertainty associated with potential injuries. The U.S. tort liability system, however, serves to augment the safety incentives and insurance opportunities provided by the market.[3] In particular, it provides incentives for individuals and firms to

1. Bryan A. Garner, ed., *Black's Law Dictionary,* 7th ed. (St. Paul, Minn.: West Group, 1999), pp. 1496-1497. For a review of the basics of the U.S. tort system, see Congressional Budget Office, *The Economics of U.S. Tort Liability: A Primer* (October 2003).

2. Those percentages are based on each category's share of the total number of tort trials completed in the general-jurisdiction courts of the 75 largest U.S. counties in 2001. See Department of Justice, *Bureau of Justice Statistics, Civil Trial Cases and Verdicts in Large Counties,* 2001, NCJ 202803 (April 2004), Table 1.

3. Other tools are regulation and public compensation programs.

Box 1.

Definitions of Some Common Tort Terms

Collateral-source payments: Amounts that a plaintiff recovers from sources other than the defendant, such as the plaintiff's own insurance. Under the collateral-source rule, that compensation from other sources may not be admitted as evidence at trial.

Contingent fee: A fee charged by an attorney for his or her services only if the lawsuit is successful or is favorably settled out of court. Usually, the contingent fee is calculated as a percentage of the amount the plaintiff recovers from the defendant.

Economic damages: Funds to compensate a plaintiff for the monetary costs of an injury, such as medical bills or loss of income.

Joint-and-several liability: Liability in which each liable party is individually responsible for the entire obligation. Under joint-and-several liability, a plaintiff may choose to seek full damages from all, some, or any one of the parties alleged to have committed the injury. In most cases, a defendant who pays damages may seek reimbursement from nonpaying parties.

Malpractice: "An instance of negligence or incompetence on the part of a professional."[1]

Negligence: A violation of a duty to meet an applicable standard of care.

Noneconomic damages: Damages payable for items other than monetary losses, such as pain and suffering. The term technically includes punitive damages, but those are typically discussed separately.

Punitive damages: Damages awarded in addition to compensatory (economic and noneconomic) damages to punish a defendant for willful and wanton conduct.

Statute of limitations: A statute specifying the period of time after the occurrence of an injury—or, in some cases, after the discovery of the injury or of its cause—during which any suit must be filed.

1. Bryan A. Garner, ed., *Black's Law Dictionary,* 7th ed. (St. Paul, Minn.: West Group, 1999), p. 971.

take appropriate care, compensates those who are harmed, helps spread risk, and serves the purposes of punishment or retribution.

In economic terms, those various purposes can be related to the overarching social goals of efficiency and equity. In theory, the tort system contributes to economic efficiency by assigning liability for accidents so that individuals and firms account for the extent to which their actions affect the risk of injury. However, different concepts of equity may affect the assignment of that liability. For example, a particular concept of fairness might hold that certain victims should not be considered responsible for exercising some forms of care although it would be more efficient if they did so. The literature this paper reviews does not address the efficiency and equity implications of various reforms but examines how reforms might affect the number of court filings or the size of awards.

Arguments For and Against Federal Tort Reform

Many legal scholars agree that tort liability has expanded over the past 30 years; the opportunity for victim compensation has increased, particularly in the area of product liability.[4] That growth was facilitated by a notion that more extensive tort liability would serve to compensate injured parties and reduce the level of accidents. However, many people have voiced concern that the tort system has gone too far; they say that businesses are saddled with excessive costs that lead to higher prices for consumers. Critics also express several other specific concerns about the tort system:

4. See, for example, George L. Priest, "The Modern Expansion of Tort Liability: Its Sources, Its Effect, and Its Reform," *Journal of Economic Perspectives,* vol. 5, no. 3 (Summer 1991).

- The "transaction costs" of the system, particularly attorneys' fees, are too high;
- Punitive damages and compensatory damages for pain and suffering are often awarded arbitrarily, with no beneficial effect on safety;
- The class-action mechanism (whereby many claims that cover similar factual ground are combined into a single larger case) is too easily abused by plaintiffs' attorneys;
- Medical malpractice lawsuits are driving up the costs of liability insurance for physicians to the point that some of them are restricting their practices or retiring; and
- Fair compensation for victims of torts is limited by frivolous lawsuits and excessive awards of noneconomic damages, which increase the likelihood of bankruptcy for firms.

Since the mid-1980s, a large majority of states have enacted statutes to restrict tort lawsuits.[5] Those statutes were enacted in response to problems in insurance costs and availability. The idea behind those changes was that limiting the liability exposure of firms would reduce liability insurance premiums.

Despite those reforms at the state level, some people see a role for a federal approach. They note that tort reforms have not been universally undertaken in the states and that those states that enacted changes have done so in a less than uniform way. People in favor of federal action contend that such a lack of uniformity in state laws increases the costs to businesses that manufacture and sell goods and services in multiple states and that federal legislation unifying tort laws across the country could reduce those costs. Uniform tort laws would also limit "venue shopping"—the ability of the plaintiff to choose the jurisdiction where a lawsuit is tried. In addition, proponents point to various large and unique liability cases—for asbestos exposure, for example—as special situations that warrant a national approach allowing victims to receive timely and fair compensation.

5. Some state legislation changing tort liability rules and procedures predated that surge.

Opponents of tort reform argue that a lack of evidence on the benefits and costs of tort liability in general, as well as the economic effects of state reforms, makes a broad federal approach risky. Limited data on the deterrent effect of the tort system is available to counter the charges of excessive costs, but opponents of reform argue that those costs, to the extent that they exist, are justified by the system's role in compensating victims, ensuring that injurers face the total costs of their actions, and improving safety. They contend that proposed reforms are too broad and that the states and the judiciary are better positioned to make adjustments to the system in response to existing problems.

Only a small number of studies have been conducted that analyze the effects of state-level tort reforms on various outcomes, including tort court filings, damage awards, health care providers' behavior, liability insurance premiums, and insurance availability. However, whether or not tort reforms have had a significant effect on those measures says little about the overall functioning of the tort system in terms of efficiency and equity. For instance, whether damage caps reduce the number of lawsuits filed says nothing about whether it is more efficient or equitable to discourage marginal tort cases.

Tort Reform Initiatives at the State Level

Tort reform has been a national trend, but the extent and specifics of that reform have varied from state to state. Delaware, for example, has not passed any tort reform legislation since 1986, and its earlier statutes were limited to medical malpractice cases.[6] Colorado, in contrast, has enacted reforms since 1986 that restrict the application of joint-and-several liability, allow court awards to be offset by collateral-source payments, abolish punitive damages in a number of cases and restrict them to be less than compensatory damages in others,[7] limit the total award of damages to $1 million (of which no more than $250,000 can be for noneconomic damages), and modify class-action rules.

6. Delaware law permits the admissibility of evidence of collateral-source payments, restricts contingent fees, and allows periodic payment of future damages, all in medical liability actions.

7. Punitive damages are disallowed in medical malpractice cases in Colorado when drugs have been approved by the Food and Drug Administration or when the patient has given informed consent.

Some state-level tort reforms have made it more costly or difficult to file tort cases. For example, joint-and-several liability reforms tend to force plaintiffs to bring suit against multiple defendants rather than concentrate their efforts on a few defendants who are wealthier, more easily identifiable, or both; court procedural reforms can make it harder to file suits; and caps on legal contingent fees make it less lucrative for attorneys to accept "long shot" cases. The major argument for those reforms is that too many frivolous cases are brought in general. Other reforms limit the amount of damages, both compensatory and punitive, that can be awarded. Underlying those reforms is the contention that the courts are apt to make excessive awards, in terms of either what is necessary to compensate victims for their losses or what incentives are appropriate to avoid future accidents.

Limits on Joint-and-Several Liability

Thirty-eight states have reformed joint-and-several liability rules by statute since 1986 (see Figure 1).[8] Under the common-law rule of joint-and-several liability, if two or more parties cause harm, any of them can be held responsible for all of a victim's damages, regardless of the relative degree of fault or responsibility. The plaintiff need only show that one of the defendants is at fault, and that defendant cannot use the involvement of third parties as a defense.[9] This is often called the "deep pockets" rule because it enables plaintiffs to concentrate their efforts on wealthier defendants.

Supporters of this rule argue that if the individual actions of multiple defendants are together necessary for the injury to occur, then it is appropriate for each defendant to face the full value of the victim's losses—that is, all defendants are jointly and fully responsible—without considering the extent to which each defendant's own action contributed to the circumstances necessary to cause the injury. In its favor, joint-and-several liability advances the cause of full and quick compensation for the victim. It also may cause potential injurers to take care. Opponents contend, however, that the rule provides incentives for plaintiffs to bring marginal suits against wealthy defendants because the burden of proving that a single defendant is even partially at fault—rather than being primarily or wholly at fault—is low.

Changes to the common-law rule of joint-and-several liability usually limit a defendant's responsibility for damages to a fraction of the total damages commensurate with the proportion of fault that is attributed to that defendant. Under limits of that type, a plaintiff would have to file multiple lawsuits to be fully compensated and in doing so would bear increased legal costs. Additionally, a plaintiff who can collect only partial compensation from each defendant is exposed to the risk that some defendants may be unable to pay. In all, a plaintiff's expected benefit from filing a tort lawsuit is lower; therefore, those changes should result in the filing of fewer lawsuits. However, some observers argue that if the reforms are enacted, a plaintiff may attempt to inflate the size of his or her claim to offset those reductions in expected damages.[10]

In 1985, only five states restricted joint-and-several liability.[11] In 1986 and 1987, 24 additional states enacted reforms. Currently, 42 states limit joint-and several-liability in some way, but only seven have banned the use of the doctrine in the recovery of all damages. (In general, states have maintained the original doctrine except in specific cases—for example, for intentional torts, hazardous

8. Although the American Tort Reform Association lists Vermont as enacting reform to joint-and-several liability since 1986, Vermont actually enacted that reform in 1985.

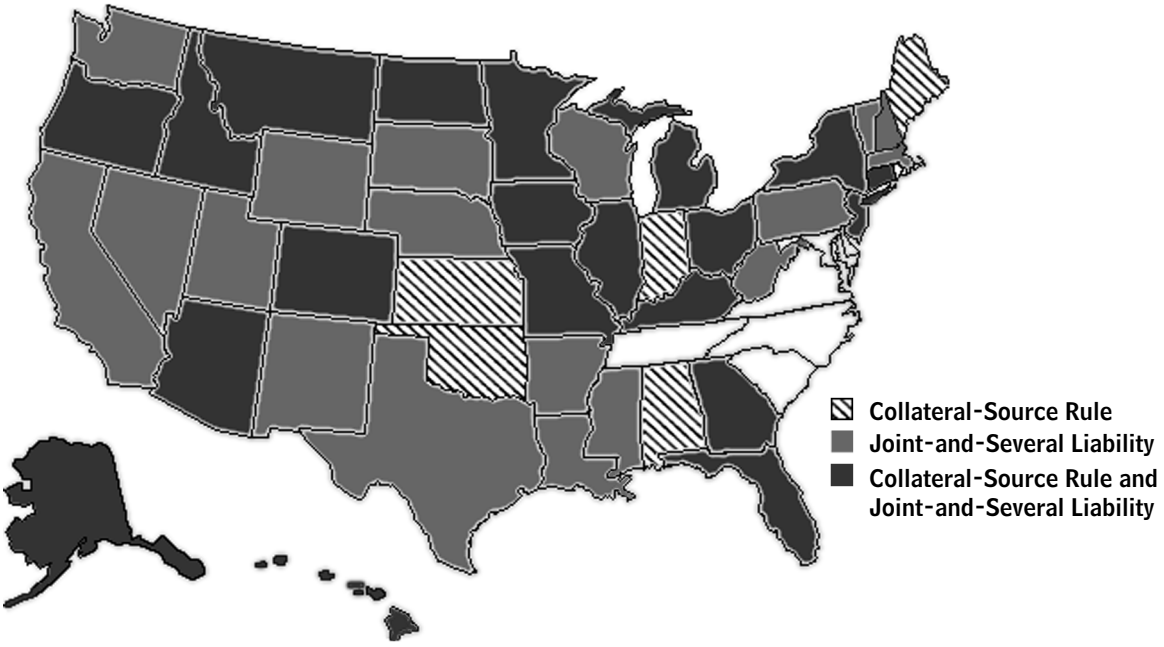
9. Such a defendant can and usually does initiate its own suit against other responsible parties in the same or in a separate suit.

10. See the discussion in Mark J. Browne and Robert Puelz, "The Effect of Legal Rules on the Value of Economic and Non-Economic Damages and the Decision to File," *Journal of Risk and Uncertainty,* vol. 18, no. 2 (1999), pp. 189-213.

11. Joint-and-several liability rules in Indiana, Kansas, and Vermont were modified by statute before 1986; those in Oklahoma were modified by court decision in 1978. Iowa enacted a reform in 1985 (and in 1997 further restricted joint-and-several liability with a new law).

Figure 1.

States That Have Enacted Reforms to Joint-and-Several Liability and the Collateral-Source Rule Since 1986



Source: American Tort Reform Association, *Tort Reform Record* (December 31, 2003), pp. 2-3, available at www.atra.org/files.cgi/7668_Record12-03.pdf.

Notes: The American Tort Reform Association (ATRA) does not list reforms enacted before 1986, when the association was founded. Although the ATRA lists Vermont as enacting joint-and-several liability reform since 1986, Vermont actually enacted that reform in 1985.

In Georgia and Kansas, reforms to the collateral-source rule were subsequently found to violate the state constitution.

waste, and medical malpractice.)[12] Other states allow a single defendant to be responsible for compensating the victim's total loss only in cases in which the defendant is found primarily responsible, which is usually defined as more than 50 percent at fault.[13] Other variants of the reform include allowing a defense of comparative negligence (by which defendants' liability can be reduced by proving that the plaintiff was partially responsible for the injury); allowing joint-and-several liability for economic but not noneconomic damages; and restricting joint-and-several liability to cases in which defendants acted in a concerted effort.

Changes to the Collateral-Source Rule

Under the collateral-source rule, a defendant is prohibited from introducing evidence at trial to show that a plaintiff has received compensation for an injury from another source—for example, an insurance policy. That common-law rule prevents any offsets of damage awards by the amount the plaintiff has received from those collateral sources.

12. An intentional tort is a tort committed by someone acting willfully, with general or specific intent. Examples include battery, false imprisonment, and trespass to land. See Garner, *Black's Law Dictionary,* p. 1497.

13. Eight states set the fault limit at 50 or 51 percent; Illinois sets it at 25 percent and New Jersey at 60 percent. South Dakota restricts the liability of defendants who are less than 50 percent at fault to no more than twice the percentage of fault.

In 1986 and 1987, 18 states changed their collateral-source rules; currently, 23 states have either abolished or reformed the rule (see Figure 1).[14] Typical reforms either permit evidence of collateral-source payments to be admitted at trial, allow awards to plaintiffs to be offset by other payments, or both.

Advocates of the collateral-source rule emphasize its incentive effects. They contend that a potential injurer facing the entire cost of an accident will exercise an efficient level of care, whereas an injurer facing a smaller payment has less of an incentive to take care. Opponents of the rule argue that it leads to overcompensation, with victims compensated twice for the same injury.[15] Such overcompensation lowers a potential victim's incentive to take care, opponents contend, and increases the number of lawsuit filings by boosting the expected size of an award. Critics of the tort system in general often argue that court awards exceed the amount necessary to induce the optimal level of precaution; in their view, this reform acts in part to offset those overpayments.

Caps on Noneconomic Damage Awards

Since 1986, 23 states have enacted statutes limiting noneconomic damages; currently, 18 states have such statutes (see Figure 2).[16] Advocates of limits on noneconomic damages point out that psychological losses—for example, damages for pain and suffering and loss of consortium—are not easily valued and can in some cases lead to unpredictable and extravagant judgments.[17] Furthermore, they believe that juries tend to be biased against large corporate defendants in favor of individual plaintiffs in tort suits. Applying a ceiling to the amount of noneconomic damages that can be awarded by juries, they argue, limits those errors and biases. Also, because the expected value of the total award is capped under this reform, the expected benefit of a tort lawsuit to the plaintiff is lower—unless economic or punitive awards increase to offset the restriction—and thus the number of tort lawsuits filed may fall.

Limits on noneconomic damages are often restricted to lawsuits involving medical malpractice. The typical reform imposes an upper limit ranging from $250,000 in Kansas and Montana to $750,000 in Texas.[18]

Limits on Punitive Damage Awards

In 1985, only seven states had restrictions on punitive damages,[19] but by 1987, legislation restricting such damages had been enacted in 22 states. From a legal standpoint, punitive damage awards serve to punish unusual and egregious behavior. From an economic standpoint, punitive awards can be justified as a useful deterrent to negligent behavior, and in a broad sense as a means to counteract torts that go undetected and, therefore, unpunished. If properly applied under that theory, punitive damage awards adjust the total expected costs of an action to reflect the expected harm to society.[20]

In practice, however, in many cases a jury will only by coincidence award punitive damages that match the cost to society of certain types of harms. In fact, the economic rationale for punitive damages does not correspond with the often cited retributional goal of the courts, which

14. Georgia's 1987 statute was found to violate the Georgia Constitution in 1991. Kansas's 1988 statute was found to violate the Kansas Constitution in 1993.

15. Some analysts say that double compensation is mitigated by the fact that most insurers have a right of subrogation in which they can require repayment for any benefit from court awards. However, insurers often do not exercise that right for at least three reasons. First, it can be difficult to establish that a certain award covers the same damages as an insurance benefit; second, administrative costs are large; and third, those actions may contribute to ill will among customers.

16. Five states' statutes have been found to violate the state constitution.

17. Loss of consortium is defined as a loss of the benefits that one spouse is entitled to receive from the other. See Garner, *Black's Law Dictionary,* p. 958.

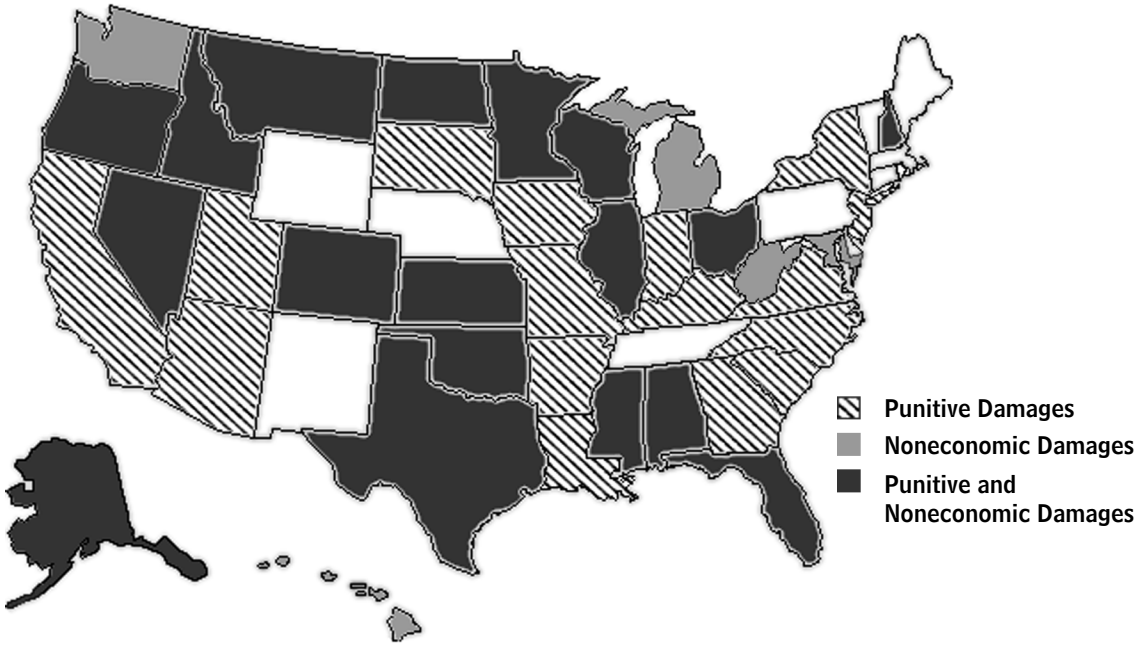
18. Colorado caps total damages at $1million.

19. Lisa Kimmel found common-law prohibitions on punitive damages in Connecticut, Louisiana, Massachusetts, Michigan, New Hampshire, and Washington. In addition, punitive damages are prohibited by the Nebraska Constitution. See Kimmel, "The Effect of Tort Reform on Economic Growth" (Ph.D. dissertation, University of California, Berkeley, Spring 2001). New Hampshire subsequently codified its common-law prohibition in statute, and Louisiana repealed its prohibition in part but then reversed that decision.

20. Say an injury is detected only one-fifth of the time. By paying punitive damages equal to four times compensatory damages, the injurer pays for the accident for which he or she was caught and the corresponding four accidents for which he or she was not caught.

Figure 2.

States That Have Enacted Caps on Damages Since 1986



Source: American Tort Reform Association, *Tort Reform Record* (December 31, 2003), pp. 2-3, available at www.atra.org/files.cgi/7668_Record12-03.pdf.

Notes: The American Tort Reform Association does not list reforms enacted before 1986, when the association was founded.

In several states, the caps were subsequently found to violate the state constitution. See Summary Table 1 for a complete listing of those states.

may lead to excessive awards from an efficiency point of view.[21] Several observers argue that those problems with implementation are manifested as random and unpredictable awards, which are an ineffective deterrent. Critics concerned with excessive punitive damage awards also note that the additional risk of being assessed punitive damages deters many firms from developing and selling products with an otherwise acceptable level of risk attached to them.

Since 1986, 34 states have enacted statutes imposing one or more of the following restrictions on punitive damages: [22]

- Six states ban punitive damages outright.
- Seven states allow a "government standards" defense for drugs approved by the Food and Drug Administration.
- Nineteen states impose a maximum amount of punitive damages that a victim can recover. Some states impose a cap equal to some multiple of compensatory

21. One study used mock juries with fabricated scenarios to evaluate how jury-eligible individuals map offenses to punitive damage awards. There was substantial consensus on judgments, outrage at a defendant's actions, and on the appropriate severity of punishment. However, the act of mapping punitive intent to a dollar amount led to erratic and unpredictable results. See Daniel Kahneman, David Schkade, and Cass R. Sunstein, "Shared Outrage and Erratic Awards: The Psychology of Punitive Damages," *Journal of Risk and Uncertainty,* vol. 16, no. 1 (1998), pp. 49-86.

22. Connecticut, Massachusetts, Michigan, Washington, and Nebraska have restrictions on punitive damages adopted by common law.

awards (typically three times that amount), whereas others set caps ranging from $250,000 to $10 million.

- Twenty-three states require an elevated burden of proof for recovery of punitive damages. For example, many require "clear and convincing" evidence that the act was malicious before punitive damages can be awarded.

- Thirteen states have procedural reforms that make it harder for plaintiffs to pursue punitive damages by requiring a separate hearing. Seven states created trust funds that collect a percentage of punitive damage awards, further reducing plaintiffs' incentives to undertake costly litigation to win such awards.[23]

Other Reforms

States have pursued many other types of tort reforms. In some cases, it is not clear whether those reforms favor the plaintiff or the defendant, but all are described by their advocates as increasing fairness. In general, the effects of those reforms have not been examined by the empirical literature, except insofar as they may have been lumped in the category of "other reforms."

Contingent Fees. Several states have enacted restrictions on the amount that an attorney can charge on a contingent basis in medical malpractice cases. (In those cases, the attorney receives payment only if he or she is successful in winning a dollar award for the plaintiff.) Such contingent fees—which are typically a percentage of the amount awarded—create incentives for attorneys to take on a large number of cases, each with a low probability of success, with the expectation that the fees earned from the successful cases will be large enough to subsidize the unsuccessful cases. Limiting contingent fees removes that incentive but may, in the view of supporters of the practice, foreclose a means for low-income victims to get legal representation.

23. A. Michell Polinsky and Yeon-Koo Che present a model of an optimal liability system in which the defendant's payment is as high as possible while the award to the plaintiff is lower. Under that scenario, the plaintiff's incentive to sue is reduced—as are the costs of litigation—but the defendant's incentive to exercise care is maintained. See Polinsky and Che, "Decoupling Liability: Optimal Incentives for Care and Litigation," *RAND Journal of Economics,* vol. 22, no. 4 (Winter 1991), pp. 562-570.

Statutes of Limitation. A few states have either established or reduced the statutes of limitation or repose for certain types of cases. A statute of limitation restricts the filing of lawsuits within a certain period after an injury occurs; a statute of repose restricts the filing of lawsuits within a certain period after the manufacture or sale of a product even if injury occurs outside of that period.

Periodic Payment of Future Damages. Six states have required or allowed courts to stagger award payments over time. In that way, if a plaintiff's situation changes, the court can alter the payments.

Prejudgment Interest. Some states have limited the amount of interest that may accrue on an award for compensation during the time before the court awards damages.

Victim Compensation Funds. Some states have set up no-fault funds, similar to federal statutes such as the Childhood Vaccine Compensation Fund, to compensate victims of certain types of medical malpractice. Victims who accept compensation from those funds are limited in their right to file lawsuits.

Alternative Dispute Resolution. Several states' laws provide for court-sponsored arbitration and mediation programs. Colorado, for example, recently enacted a statute that allows judges to refer litigants to alternative dispute resolution systems. That approach reduces costs by keeping cases out of the court system.

The Difficulties of Evaluating State-Level Tort Reforms

Researchers must contend with a number of issues when estimating the impact of tort reforms. They include these:

- **There are numerous differences in tort reform statutes.** The variety in states' approaches to tort reform makes evaluation difficult. While the general approach to tort reform has been similar among the states, there are important differences in the way those reforms have been implemented. For instance, although 18 states have enacted caps on noneconomic damages, those caps range from $250,000 to $750,000 and are applied to different types of torts and conditions.

- **Tort reforms are often enacted in groups.** Researchers are faced with the difficult task of reliably estimating the effects of individual reforms, a task made even harder by the high degree of correlation among different types of reforms. For example, a cap on punitive damages may have the same effect on damage awards as a requirement for a separate hearing for punitive damages. If those two provisions are enacted simultaneously, it will be difficult to determine whether an observed change in damage awards is caused by the cap, the procedural reform, or a combination of both factors.

- **It is difficult to determine the status of state laws.** To begin with, identifying those states that have undertaken tort reforms can be difficult. Many researchers rely on the records of the American Tort Reform Association, a national organization that has tracked state legislation since 1986, while others conduct their own survey of state laws. In addition, some researchers consider court decisions that change common law, whereas others, more strictly, consider only statutes enacted by a state's legislature. Furthermore, determining whether a statute offers substantive changes to existing practices in the courts is difficult. For example, a 1987 New Mexico statute codified a practice that was already adopted in 1982 by court decision.[24]

- **The implementation lag caused by constitutional appeals complicates analysis.** Uncertainty about whether legislation will be ultimately found to violate a state's constitution or how long those challenges will take mitigates the effect of tort reform legislation. For instance, insurance companies can be slow to change their premiums in response to a cap on damages if they think those measures will be struck down or take a long time to materialize.

- **There is a dearth of data on tort cases.** Few data are available that include details about tort cases brought in the various jurisdictions across the country. Only two studies have overcome that problem by using detailed data about individual insurance claims.

In addition to dealing with those data availability and quality issues, researchers must construct valid measures of the effects of tort reform. Generally, researchers compare the experience of states that have enacted reform statutes with the experience of states that have not (and compare states with themselves before and after the enactment of reforms). Implicit in that comparison is the assumption that the impact of reforms in nonreform states would be similar to that in states with reforms. But that assumption may not be warranted. The fact that some states enacted tort reform and others did not opens the possibility that the two groups of states were different to begin with and that tort reform would have different effects in each of the two groups.

To help account for differences among states, researchers statistically adjust for observed characteristics before making comparisons. However, some important factors that may help determine the outcome measure—the likelihood of reform and the state-level response to reform—may be unobservable or unknown. Failing to account for those unobserved factors can make comparisons across states (and time) misleading. If there are factors that do not vary over time—that is, they have "fixed effects"—then researchers may eliminate their influence by comparing the changes in, rather than the levels of, outcomes between reform and nonreform states.[25] However, even in those cases, there could be remaining bias in the measure of the impact of tort reform caused by unobserved (or uncontrolled) factors that are suspected of varying over time.

A Review of the Major Studies of State-Level Tort Reforms

The nine studies covered in detail in this review analyze the effects of state-level tort reforms on the number of court filings and the size of awards. They also look at the implications of tort outcomes on economic factors such

24. The New Mexico Court of Appeals eliminated joint-and-several liability by decision in *Bartlett v. New Mexico Welding Supply Inc.,* 646 P. 2d 579 (1982). In 1987, that decision was codified in N.M. Stat. Ann. §41-3A-1.

25. Researchers take the value of the outcome measure after reform and subtract from it the outcome measure before reform. Because the influence of the unobserved variables is assumed to be the same across time, those fixed effects are eliminated. The same procedure is done for states that did not enact the reform over the same time period to form the comparison group.

Table 1.

Major Studies of State-Level Tort Reforms Published Since 1993

	Viscusi and others (1993)	Browne, Lee, and Schmit (1994)	Born and Viscusi (1998)	Kessler and McClellan (1996, 2000, 2002)	Browne and Puelz (1999)	Yoon (2001)	Thorpe (2004)
Outcome Measures	Insurance premiums and loss ratios for general liability and medical malpractice	Number of tort cases filed	Insurance premiums and loss ratios for general liability and medical malpractice insurers	Medical expenditures, health outcomes, number of claims filed, and claims costs	Number of automobile tort cases filed; value of economic and noneconomic awards	Awards recovered by plaintiffs in medical malpractice cases	Insurance premiums and loss ratios for medical malpractice insurers at the state level
Reforms Studied	Joint-and-several liability; limits on liability; damage caps; other reforms	Joint-and-several liability	Damage caps; all other types of reform	"Direct" and "indirect" reforms (as classified by the authors) targeting medical malpractice as well as more general reforms	Joint-and-several liability; collateral-source rule; damage caps; limits on punitive damages; sanctions on frivolous suits or defenses; prejudgment interest; structured settlements	Caps on noneconomic damages; caps on punitive damages; limit on wrongful death suits	Joint-and-several liability; caps on attorneys' fees; collateral-source rule; damage caps
Period Studied	Mid- to late 1980s	1984 to 1989	1984 to 1991	Mid-1980s to late 1990s	Mid-1980s to early 1990s	1987 to 1999	1985 to 2001
Data Set Used	State-level premiums and losses from *Best's Review* and *Best's Aggregates and Averages*	Number of tort filings at the state level in 19 states; state characteristics from various sources	Premiums and loss ratios by state for each insurance company from the National Association of Insurance Commissioners	Hospital admission data for Medicare recipients; physician survey data; malpractice claims data	18,777 individual claims of automobile bodily injury disposed of in 1992 in 45 states	Individual malpractice claims against physicians in four states	State-level premiums and loss ratios from the National Association of Insurance Commissioners

Source: Congressional Budget Office based on the studies shown here (full citations can be found in the bibliography of this report).

Note: See Box 1 for definitions of the tort terms used in this table.

as liability insurance premiums, insurers' profitability, and the practice of defensive medicine (see Table 1).

Many of the studies conclude that tort reform can affect outcomes most closely related to the tort system in much the same way that advocates of changing the tort system would claim. Those studies find that reforms in general have decreased the number of lawsuits, reduced awards, and improved the profitability of insurance providers. (See Table 2 for a summary of the findings from those studies.) Moving further away from economic behaviors most directly influenced by torts, the literature is thin. For that reason, the conclusions should be interpreted with caution, especially insofar as they indicate how federal tort reform might be expected to affect the economy.

Effects of Tort Reform Legislation on Damage Claims and Lawsuits

Evidence from several of the studies suggests that different tort reform initiatives affect the number of lawsuits filed, the value of insurance claims, and the value of insurance payouts for damages. A 2001 study by Albert Yoon, for instance, found that the enactment of statutes to cap damages led to a significant reduction in the amount that plaintiffs recovered in medical malpractice lawsuits in Alabama relative to three neighboring states.[26]

Additionally, a 1999 study by Mark J. Browne and Robert Puelz found that caps on noneconomic damages preceded a reduction in claims for those damages and led to a large decrease in the number of subsequent court filings.[27] However, the same study found that those caps had no statistically significant effect on claims for economic damages and that, counter-intuitively, punitive damage restrictions led to an increase in court filings. The study also found that joint-and-several liability reforms led to an increase in claims for noneconomic damages but had no statistically significant effect on claims for economic damages. Furthermore, it found no evidence that joint-and-several liability or reforms to the collateral-source rule had any impact on the number of lawsuits filed; similarly, a 1994 study by Mark J. Browne and co-authors found only weak support for a reduction in the number of lawsuits filed after joint-and-several liability reform.

Mark J. Browne, Han-Duck Lee, and Joan T. Schmit (1994) concentrated on the effects of joint-and-several liability reform, the most frequent type of reform enacted during the mid- to late 1980s.[28] The authors used state-level data on the number of lawsuits filed from the National Center for State Courts and state economic and other characteristics from various sources for 19 states over the six-year period from 1984 through 1989. Their data suggest that only three of the states studied did not enact any joint-and-several liability reforms during that period. Of the 16 states that enacted reforms, three had total bans on joint-and-several liability in effect at some point.[29]

Controlling for economic and other factors that may influence state-level court filings, including other types of tort reforms, the authors found weak support for an overall reduction in the number of torts filed after the enactment of joint-and-several liability reform. In contrast, in the year preceding the effective date of reform, there was a statistically significant surge in court filings in states that restricted joint-and-several liability although not in states that abolished it.

The authors hypothesize several reasons why they found no significant effect after the reforms were instituted.[30] Although they allowed for a lag in the effect of joint-and-several liability reforms on court filings, the time period of the study did not enable the authors to detect effects that may have taken several years to emerge. In addition,

26. Albert Yoon, "Damage Caps and Civil Litigation: An Empirical Study of Medical Malpractice Litigation in the South," *American Law and Economics Review,* vol. 3, no. 2 (2001), pp. 199-227.

27. Browne and Puelz, "The Effect of Legal Rules on the Value of Economic and Non-Economic Damages and the Decision to File."

28. Mark J. Browne, Han-Duck Lee, and Joan T. Schmit, "How Does Joint and Several Tort Reform Affect the Rate of Tort Filings? Evidence from the State Courts," *Journal of Risk and Insurance,* vol. 61, no. 2 (1994), pp. 295-316.

29. Alaska enacted a "partial" reform in 1986 and then strengthened it to an outright ban by 1989. In contrast, Colorado went from a total ban in 1986 to a partial ban in 1987. Utah enacted a total ban in 1986.

30. Other reasons cited are that the laws may be too weak to significantly affect court filings; the reforms may diminish the deterrent effect of the tort system, leading to an increase in injuries and an offsetting rise in court filings; or, as a result of joint-and-several liability reform, injured parties may need to file several claims to be fully compensated rather than one against a wealthier defendant.

Table 2.

Findings from the Major Studies of State-Level Tort Reforms Published Since 1993

	Viscusi and others (1993)	Browne, Lee, and Schmit (1994)	Born and Viscusi (1998)
Applicability	General and medical malpractice	General	General and medical malpractice
Modifications to Joint-and-Several Liability	1986 reforms led to a large reduction in losses for general liability insurers; 1985-1986 reforms led to a large decrease in general liability premiums (only the 1985 reforms had an impact on medical malpractice premiums); no effect on loss ratios detected.	No impact on number of claims filed after reform but a significant surge in court filings before reform took effect.	Included in "other" reforms.
Repeal of the Collateral-Source Rule	No effect detected, but reform was combined with caps on contingent fees, modifications of statutes of limitations, and other reforms.	Not studied.	Included in "other" reforms.
Caps on Noneconomic Damages	Large decline in losses for both general and medical malpractice insurance. No effect detected for either premiums or loss ratios.	Not studied.	Led to increased profitability for insurers and a decrease in premiums.
Restrictions on Punitive Damages	Decline in premiums for general liability insurance. No other effect found.	Not studied.	Included in "other" reforms.
Other Reforms	General limits on liability awards or established immunities from prosecution seem to have reduced general liability premiums, but no other effect was found.		Led to an increase in insurers' profitability and a decline in premiums for medical malpractice liability. For general liability, little effect was found.
Comments	As a package, reforms enacted between 1985 and 1987 significantly reduced insurers' losses, with a less dramatic decline in premiums, which yielded an overall drop in loss ratios.		

Continued

Table 2.

Continued

Kessler and McClellan (1996, 2000, 2002)	Browne and Puelz (1999)	Yoon (2001)	Thorpe (2004)
Medical malpractice	Automobile bodily injury	Medical malpractice	Medical malpractice
Included as an "indirect" reform; see "comments."	Led to an increase in the dollar value of noneconomic claims; no statistically significant effect on the value of economic claims or the number of court cases filed.	Not studied.	Found no statistically significant effect.
Included as a "direct" reform; see "comments."	Decrease in the value of both economic and noneconomic claims; no effect on the number of court cases filed.	Not studied.	"Discretionary" collateral-source offsets (those considered at a judge's discretion) led to increased profitability (decreased loss ratios) for insurers. No significant difference in premiums found.
Included as a "direct" reform; see "comments."	Decline in the value of noneconomic claims; a significant reduction in the number of court cases filed. No effect on economic claims.	Led to a decrease in the amount that plaintiffs recovered (but this reform was combined with a cap on punitive damages and a limit on wrongful death claims).	Led to increased profitability (decreased loss ratios) and lower premiums earned for medical malpractice liability insurers.
Included as a "direct" reform; see "comments."	Decrease in the value of noneconomic claims, an increase in the value of economic claims, and an overall decline in the value of total claims; an increase in the number of claims filed.	Decrease in the amount that plaintiffs recovered (but this reform was combined with a cap on noneconomic damages and a limit on wrongful death claims).	
Among "other" reforms, abolishing mandatory prepayment interest was included as a "direct" reform. "Indirect" reforms included imposing mandatory periodic payments, establishing patient-compensation funds, and capping contingent fees. States that enacted tort reforms had lower Medicare spending for hospitalization of elderly patients with heart disease and heart attacks, with no significant increase in adverse health outcomes. Those states also had lower malpractice claims. "Direct" reforms helped to lower some of the costs of claims, whereas "indirect" reforms actually increased several measures of claims costs.	The presence of sanctions on frivolous suits or defenses, prejudgment interest, and stuctured settlements led to a decrease in the value of both economic and noneconomic claims and to a drop in the number of court cases filed.	A limit on wrongful death claims combined with caps on noneconomic and punitive damages led to a decrease in the amount that plaintiffs recovered.	

Source: Congressional Budget Office based on the studies shown here (full citations can be found in the bibliography of this report).

Note: See Box 1 for definitions of the tort terms used in this table.

because the number of joint-and-several liability claims is only a small portion of total claims, the effect of those reforms on total court filings would naturally be modest.

Mark J. Browne and Robert Puelz (1999) investigated the success of tort reform legislation in reducing the number of tort cases filed in court and the value of claims for economic and noneconomic damages. Their study analyzed a data set comprising 18,777 individual automobile bodily injury claims that were either paid or closed in 45 states.[31] For each accident, the data include the amount the victim claimed for economic and noneconomic damages and whether the claimant also filed a lawsuit. Those data allowed the authors to use regression analysis to investigate how tort reforms affect damage claims as well as the decision to pursue a lawsuit. The analysis controlled for a number of other factors, including the presence of no-fault insurance rules and whether the claimant retained an attorney.[32]

Browne and Puelz postulated that tort reforms that lower potential awards make it unprofitable for plaintiffs to pursue a legal remedy in some cases. They focused on seven reforms enacted during the 1980s and early 1990s: joint-and-several liability reform, changes to the collateral-source rule, caps on noneconomic damages, limits on punitive damages, sanctions on frivolous suits or defenses, modified rules on prejudgment interest, and provisions for structured settlements.[33] For each claim, the authors identified whether the case would be subject to a legal reform if it occurred after the date of the reform, as provided by the American Tort Reform Association. In that way, the study identified changes in tort law occurring within a given state (before and after reform) and across states (comparing reform states to nonreform ones).

The authors estimated that relaxation of the joint-and-several liability rule led, on average, to a 34 percent increase in the amount of noneconomic claims, with no statistically significant effect on economic claims.[34] That result suggests that the plaintiffs inflated the size of their claims in an attempt to offset the lower expected damages implied by the reform. The authors also found that caps on noneconomic damages were associated with a 19 percent decline in the average value of noneconomic claims, with no statistical association with the average economic claim. Thus, reducing potential tort awards seems to have lowered plaintiffs' expectations (or limited their choices), regardless of whether they retained an attorney. Furthermore, reform of the collateral-source rule was associated with a decrease of 14.4 percent and 15.3 percent in the value of noneconomic and economic claims, respectively.

Browne and Puelz also found that punitive damage caps led to an increase of 9.5 percent in the value of economic damage claims (regardless of whether they were insurable) and a small but statistically significant 0.8 percent increase in the value of noneconomic claims. However, when punitive damages were not insurable, noneconomic damage claims actually dropped by 29 percent. The increase in economic claims implies that victims tend to offset the punitive limits by inflating economic damages, although that implication does not seem to hold for noneconomic claims. The authors do not explain the large reduction in noneconomic claims when punitive damages are not insurable; however, because punitive damages are rare in automobile injuries, the increase in economic damages may offset the reduction in the value of punitive damages.

For the minor reforms the authors studied, they found that any combination of frivolous suits or defenses, modified rules on prejudgment interest, or provisions for structured settlements reduced noneconomic damages by 4.8 percent and economic damages by 5.9 percent.

In terms of the probability that a lawsuit will be filed, the study reported that joint-and-several liability reform and

31. Based on a 1992 survey (conducted by the Insurance Research Council) of 61 insurers, representing 70 percent of all premiums paid for private passenger automobile insurance in the United States.

32. At the state level, the authors controlled for the type of no-fault laws, degree of urbanization, unemployment rate, and whether the state allowed punitive damages to be insurable. At the individual-claim level, the authors controlled for the presence of a plaintiff's attorney, the severity of the injury (as assessed by the claims adjuster), the length of time between the filing and the settlement of the claim, the age and sex of the plaintiff, and the degree of fault attributed to the driver (from a police report or witness interview).

33. In their analysis, Browne and Puelz combined sanctions on frivolous suits or defenses, modified rules on prejudgment interest, and provisions for structured settlements as minor reforms.

34. They estimated that joint-and-several liability reform increased total claims (economic and noneconomic) by 21 percent.

reform of the collateral-source rule had no significant impact. Caps on noneconomic damages, in contrast, decreased the average probability that a case will be brought from 4 percent to 1.4 percent. Any combination of restrictions on the minor reforms mentioned above was also found to decrease the likelihood that an individual would file a lawsuit. Caps on punitive damages had the opposite effect: the study's results indicated that those caps increased the likelihood that a claim would be filed—from 2.7 percent to 4 percent. That rise could be explained by the possibility that larger punitive damages would tend to encourage an insurance company to make a more generous first offer. And as discussed earlier, the authors found that increases in economic damages would tend to offset the effect of the punitive damage caps.

A major strength of the Browne and Puelz study is its large number of observations, which enable the authors to separately estimate the impact of each major type of reform while controlling for a number of state- and individual case-level factors, including the no-fault status of the states.[35] Conversely, the study is limited in that it focused only on injuries caused by motor vehicle accidents. The response of plaintiffs in other types of torts, such as medical malpractice and product liability, could differ markedly from the response of auto accident victims.[36]

35. No-fault states are expected to have fewer lawsuits filed than traditional tort liability states and higher average damage awards at trial. In 23 states (and the District of Columbia and Puerto Rico), the ability or incentive to file an automobile-related tort liability case is restricted by some variation of no-fault rules. A no-fault system, in which drivers are required to carry first-party insurance that compensates them for certain losses regardless of fault, is intended to take small claims out of the courts. Only under certain conditions can drivers in no-fault states sue for severe injuries. Of the 25 jurisdictions with no-fault rules, only 14 have mandatory no-fault systems. In contrast, three states give drivers a choice of selecting a no-fault insurance policy. Ten other states and the District of Columbia let drivers carry first-party insurance but do not restrict those drivers in filing a lawsuit. See The Insurance Information Institute, *The I.I.I. Fact Book, 2003* (New York: Insurance Information Institute, 2003), p. 49.

36. Relative to other types of torts, those involving an automobile occur more frequently and involve smaller losses. In addition, the preponderance of first-party insurance coverage (resulting from no-fault insurance laws, which are controlled for in this analysis) may affect the decision to pursue a tort action.

Albert Yoon (2001) studied the effect of the enactment and repeal of damage caps in Alabama from 1987 to 1999 on the amounts that plaintiffs recovered in medical malpractice litigation. The Alabama legislature enacted three laws in mid-1987 to cap damages: a $400,000 cap on noneconomic damages, a $250,000 cap on punitive damages, and a $1 million cap for wrongful death claims. However, the Alabama Supreme Court found each law unconstitutional—beginning in 1991 with the cap on noneconomic damages, then 1993 for the cap on punitive damages, and lastly in 1995 for the limit on wrongful death claims.

The author compared the amounts plaintiffs recovered in individual cases filed against physicians insured by a single large malpractice insurer in Alabama to those of a control group consisting of plaintiffs filing claims with that same insurer in the neighboring states of Arkansas, Mississippi, and Tennessee, none of which had laws capping damages during the period. That comparison was done over several time segments, corresponding to either the enactment or the repeal of the caps. The states in the control group were chosen because of their geographic proximity to Alabama and their relatively similar demographic characteristics. In addition, the author statistically controlled for the particular cause of action for each claim (for example, surgery malpractice, a blood transfusion, and so forth).

Yoon found that the amount that plaintiffs recovered fell by $23,000 in the period following the enactment of damage caps in Alabama relative to the control states. Following the repeal of all of the damage cap measures, the amount that plaintiffs recovered increased by $48,000 relative to the levels in the control states, more than double the estimated impact of enactment. However, two unusually high payouts in the post-repeal period accounted for that asymmetry: after omitting those cases, the decrease after repeal was found to be about $20,000, an amount in line with the increase after enactment.

Effects of Tort Reform Legislation on the Liability Insurance Market

A number of studies using insurance data suggest that some tort reforms led to reductions in several measures of insurance costs. Those studies also indicate that state-level reforms had a significant positive effect on the profitability of insurers (measured by losses and loss ratios)

and probably led to decreases in premiums.[37] Although the statistical evidence on the effectiveness of particular reforms was scant, a few studies showed that imposing damage caps—especially caps on noneconomic damages—and requiring collateral offsets reduced some medical malpractice costs. Furthermore, one study provided evidence suggesting that modifications to joint-and-several liability and punitive damage caps led to reductions in losses and premiums during the mid-1980s. That study also suggested that broad restrictions on liability helped reduce premiums. Studies attempting to isolate other types of reforms found no significant effects.

Insurance premiums for medical malpractice, product liability, environmental liability, and general liability coverage increased significantly during the mid-1970s and again in the mid-1980s, accompanied by a temporary reduction in the availability of insurance.[38] In both periods, many states enacted tort reforms to limit the perceived expansion in liability risk faced by businesses. The basic assumption was that insurers would face less underwriting uncertainty in states that had enacted reforms, which would translate into lower insurance premiums, higher profitability for insurers, and a greater willingness to underwrite risky lines of business.

The common measure used in the literature, insurance loss ratios, does not allow researchers to separately look at the cost of coverage and the amount of coverage purchased. If liability reforms worked as intended, they would lead to reductions in both the magnitude and occurrence of damage awards and would have an immediate impact on insurance losses. Any decrease in insurance prices would occur with a lag because insurers would have to obtain approval from state regulators before changing rates. In the long run, diminishing loss ratios would exert downward pressure on premiums and lead to an equilibrium loss ratio in which insurers earned a normal return on investment. Therefore, if the loss ratios were excessive before reforms took effect, then, as the results of the studies below suggest, reform would lead first to insurance companies' returning to profitability before they instituted any reduction in the price of insurance.

The Office of Technology Assessment (1993) reviewed six empirical studies of the impact of various reforms on medical malpractice costs in the mid-1970s and mid-1980s.[39] Five of those studies used data from companies that sold medical malpractice insurance; one used a survey of self-employed physicians that contained their experience with medical malpractice claims from 1976 to 1981.

The Office of Technology Assessment (OTA) concluded that caps on damage awards and mandatory collateral-source offsets showed a consistent negative impact on one or more of the measures of malpractice costs. In particular, three of the studies found that some types of damage caps reduced payments per paid claim, although the only study that examined the effect of damage caps on the frequency of claims found no significant impact.[40] Two of the studies found that mandatory collateral-source offsets greatly reduced claims payments, again with no impact

37. A loss is the amount an insurance company pays on a claim. Loss ratios are determined by dividing the losses incurred on policies written in a given year by the amount of premiums collected in that same year. The ratios include the costs of adjusting claims.

38. There was a reduction in the supply of funds used to underwrite riskier insurance lines.

39. Although those studies are included here for informational purposes, they are not reflected in Tables 1 and 2 because they had methodological shortcomings. See Office of Technology Assessment, *Impact of Legal Reforms on Medical Malpractice Costs* (September 1993). Medical malpractice costs were measured using one of the following indicators: the frequency of claims, the payments per claim, and insurance premiums or losses. The studies reviewed were: E.K. Adams and S. Zuckerman, "Variation in the Growth and Incidence of Medical Malpractice Claims," *Journal of Health Politics, Policy, and Law,* vol. 9, no. 3 (Fall 1984), pp. 475-488; D.K. Barker, "The Effects of Tort Reform on Medical Malpractice Insurance Markets: An Empirical Analysis," *Journal of Health Politics, Policy, and Law,* vol. 17, no. 1 (Spring 1992), pp. 143-161; G. Blackmon and R. Zeckhauser, "State Tort Reform Legislation: Assessing Our Control of Risks," in Peter H. Schuck, ed., *Tort Law and the Public Interest* (New York: W.W. Norton & Co., 1991), pp. 272-309; P.M. Danzon, "The Frequency and Severity of Medical Malpractice Claims, New Evidence," *Law and Contemporary Problems,* vol. 49, no. 2 (Spring 1986), pp. 57-84; F.A. Sloan, P.M. Mergenhagen, and R.R. Bovbjerg, "Effects of Tort Reforms on the Value of Closed Medical Malpractice Claims: A Microanalysis," *Journal of Health Politics, Policy, and Law,* vol. 14, no. 4 (Winter 1989), pp. 663-689; and S. Zuckerman, R.R. Bovbjerg, and F. Sloan, "Effects of Tort Reforms and Other Factors on Medical Malpractice Insurance Premiums," *Inquiry,* vol. 27, no. 2 (Summer 1990), pp. 167-182.

40. See Danzon (1986); Sloan, Mergenhagen, and Bovbjerg (1989); and Zuckerman, Bovbjerg, and Sloan (1990).

on claims frequency.[41] Finally, among the studies reviewed, the OTA found mixed results for various other reforms.

W. Kip Viscusi and Others (1993) separately analyzed the impact of reforms enacted in 1985, 1986, and 1987, controlling for the influence of the liability structure present before 1985 and for the role of insurance rate regulation.[42] The study considered the impact of modifications to joint-and-several liability, caps on noneconomic and punitive awards, general limits on liability (such as establishing immunities from prosecution), and a group of "other reforms" on losses, premiums, and loss ratios over the 1985 to 1988 period for both general liability and medical malpractice liability.

The study found that reforms enacted in 1986 and 1987 had, on the whole, a significant effect in reducing general liability losses over the period. Their results suggest that the 1986 reforms reduced losses by 10.1 percent, on average, and the 1987 reforms lowered losses by 4.6 percent. The 1986 and 1987 reforms also had a large effect on general liability premiums (although the impact was slightly less than the impact on losses), reducing premium levels by 9.1 percent and 4.3 percent, respectively. Although the reforms enacted in 1985 and 1986 lowered loss ratios, the 1987 reforms had no statistically significant effect on that measure.

The analysis also examined the effects of individual tort reform measures. In the case of modifications to joint-and-several liability, they separately estimated the effect of reforms enacted in 1985, 1986, and 1987. They found a substantial impact in only those 16 states that enacted the reform in 1986—the results implied a reduction of 6.9 percent in losses between 1985 and 1988. They found no effect from the joint-and-several liability reforms enacted in 1985 or 1987.[43] According to the authors' analysis, only about half of the states that enacted reforms between 1985 and 1987 experienced any significant effect on losses. In addition, it is not clear that this effect is distinct from those earlier attributed to the entire group of reforms enacted in 1986 (the analysis controls for other reforms enacted over the entire period, but not by year). In the case of caps on noneconomic damages, the authors found that such caps led to an 8 percent reduction in losses between 1985 and 1988. Furthermore, the authors suggest that premiums were negatively affected by modifications to joint-and-several liability, limits on punitive damages, and limits on liability in both 1985 and 1986.

Losses or loss ratios for medical malpractice were not significantly affected by the reforms, the authors found, except for limits on noneconomic damages, which reduced losses by about 14.7 percent. However, the 1985 and 1986 reforms overall led to average reductions of 17.3 percent and 13.4 percent in medical malpractice premiums, respectively.

Patricia Born and W. Kip Viscusi (1998) investigated the effect of state-level tort reforms enacted in the 1985-1987 period, both overall and separately for medical malpractice and general liability insurance lines.[44] Their data, from the National Association of Insurance Commissioners (NAIC), showed the premiums earned and losses by each insurance company in each state from 1984 to 1991, allowing the authors to measure the effects several years after the reforms occurred. In all, the data contained more than 8,000 observations for medical malpractice and 67,000 observations for general liability insurers.

The study tested whether the mid-1980s tort reforms had their intended effect by measuring insurers' loss experience following the reforms.[45] They restricted their analysis to whether a damage cap was imposed or whether some other type of reform was enacted. Overall, they

41. See Zuckerman, Bovbjerg, and Sloan (1990); and Danzon (1986). After including discretionary offsets in the measure, Danzon found a significant reduction in claims frequency.

42. W. Kip Viscusi and others, "The Effect of 1980s Tort Reform Legislation on General Liability and Medical Malpractice Insurance," *Journal of Risk and Uncertainty,* vol. 6 (1993), pp. 165-186.

43. There was some overlap between states enacting reforms over the three years: the authors list Colorado as modifying joint-and-several liability in all three years; Connecticut and Missouri were listed for 1986 and 1987

44. Patricia H. Born and W. Kip Viscusi, "The Distribution of the Insurance Market Effects of Tort Liability Reforms," *Brookings Papers on Economic Activity: Microeconomics* (1998), pp. 55-100.

45. To the extent that insurers were unprofitable before the reforms, analysts may have expected to see a larger impact on profitability than on premiums, as some insurers would return to profitability before they would reduce their premiums. The methodology used in the analysis allowed the authors to measure losses before and after the reforms in states that enacted reforms and also allowed them to compare the changes in losses between those states that enacted reforms and those that did not.

found that damage caps and other reforms reduced insurance companies' costs and the premiums they charged, which at the same time increased profitability. The analysis also found that the least profitable insurers—those with the highest loss ratios—experienced the greatest improvement in their profitability after the enactment of reforms. In addition, the authors noted that both large and small firms benefited equally from tort reforms. Those findings were consistent across the medical malpractice and general liability insurance sectors for damage caps. For general liability insurance, however, the presence of other reforms generally did not have any significant effect, although in a few of the models the most unprofitable firms tended to perform even worse after those reforms were enacted.

Kenneth Thorpe (2004) used NAIC data to study state-level trends in insurance premiums earned and loss ratios experienced by insurers for 1985 to 2001.[46] The author compared the trends for those states that capped noneconomic damages, modified joint-and-several liability, capped attorneys' fees, or changed collateral-source rules with those that did not. In addition, he controlled for a number of state characteristics, including the degree of competition in the state's insurance market and the number of practicing physicians.

In line with the other studies examined in this section, Thorpe's study found that insurers in states that adopted caps on noneconomic damage awards experienced lower loss ratios while earning lower premiums than insurers in other states. In particular, loss ratios were 11.7 percent lower and overall premiums were 17.1 percent lower in states that capped noneconomic damages. The author also found that those states that allowed "discretionary" collateral-source offsets (those considered at a judge's discretion) experienced a 13.3 percent lower loss ratio compared with other states but did not experience any significant difference in premiums. Thorpe found that no other tort reform was associated with lower premiums or loss ratios.[47]

46. Kenneth E. Thorpe, "The Medical Malpractice 'Crisis': Recent Trends and the Impact of State Tort Reforms," *Health Affairs*—Web Exclusive (January 21, 2004), available at http://content.healthaffairs.org/cgi/reprint/hlthaff.w4.20v1.pdf.

Effects of Tort Reform Legislation on Medical Malpractice and Defensive Medicine

The risk of a medical malpractice lawsuit gives health care providers incentives to take precaution against medical errors.[48] Whether or not those tort incentives are optimal depends on a number of factors. Many analysts argue that medical malpractice is not clearly defined and tends to be inaccurately judged—that is, malpractice lawsuits do not properly reflect providers' actions and too many weak lawsuits are brought. One study of medical malpractice torts found that only 1.5 percent of people classified as likely victims of medical error sued.[49] Although providers are by and large insured against medical malpractice, a lawsuit brings other penalties: the embarrassment of being sued, loss of reputation, and time and stress involved in resolving the case.

The risk of a lawsuit may also lead providers to act too cautiously by performing excessive tests and procedures that have minimal medical benefit. That practice of "defensive medicine" is done strictly to avoid poorly assigned liability by demonstrating that the provider took all possible actions—even beyond what would be considered appropriate.[50] If defensive medicine is practiced, reforms of the medical malpractice system that better align actions with consequences or reduce the number of weak lawsuits could improve efficiency.

47. In an earlier unpublished paper, Thorpe found that punitive damage caps were associated with lower premiums earned and that caps on contingent fees were associated with lower loss ratios. He also found that noneconomic damage caps, punitive damage caps, and caps on contingent fees were associated with lower claims payments by insurers. Those findings, however, were based on data from 1993 to 2001. They were presented at a conference titled "Medical Malpractice in Crisis: Health Care Policy Options," held by the Council on Health Care Economics and Policy in Washington, D.C., on March 3, 2003.

48. See Congressional Budget Office, *Limiting Tort Liability for Medical Malpractice*, Economic and Budget Issue Brief (January 8, 2004).

49. A. Russell Localio and others, "Relation Between Malpractice Claims and Adverse Events Due to Negligence," *New England Journal of Medicine,* vol. 325, no. 4 (July 25, 1991), pp. 245-251.

50. The OTA formulated a working definition of defensive medicine as "the ordering of tests, procedures, and visits, or avoidance of certain procedures or patients, due to concern about malpractice liability risk." See Office of Technology Assessment, "Defensive Medicine and Medical Malpractice," OTA-H-602 (July 1994).

Daniel P. Kessler and Mark B. McClellan (1996 and 2002) focused on detecting the practice of defensive medicine and measuring the effects of tort reform related to medical malpractice.[51] They found that Medicare inpatient hospital spending for patients with acute myocardial infarction or ischemic heart disease was reduced in states that enacted certain tort reforms, with no significant increase in adverse health care outcomes. That finding suggests the existence of defensive medicine. However, as reported in its cost estimate for H.R.5, the Congressional Budget Office (CBO) has found no evidence that tort reforms reduced medical spending when it applied the same methods used by Kessler and McClellan to a broader set of ailments. CBO did, however, find support for a reduction in medical malpractice premiums.[52]

Kessler and McClellan matched the admission records of all elderly Medicare patients who were hospitalized with a heart attack or heart disease in 1984, 1987, or 1990 with the patients' demographic information. They focused on the elderly because heart disease leading to adverse outcomes is relatively common in that population. That robust data set allowed detailed analysis of the initial treatment and two health outcomes—rehospitalizations and mortality rates.

That study categorized tort reforms as either direct reforms or indirect reforms. Direct reforms included changes in laws that specify statutory limits on or reductions in malpractice awards (caps on damages, reform of the collateral-source rule, abolition of punitive damages, and abolition of mandatory prejudgment interest). Indirect reforms included changes that the authors believed affect awards but only indirectly: reforms that impose mandatory periodic payments, caps on attorneys' fees, joint-and-several liability reform, and patient-compensation funds.

The authors found that the adoption of direct reforms led to a 6 percent drop in hospital expenditures for heart attack patients and a 9 percent decline for heart disease patients, with no significant change in mortality rates or cardiac complications. However, after controlling for the impact of managed care organizations, their estimates fell to 4 percent for both types of diseases. Those effects occurred three to five years after enactment of the reforms. The authors speculated that it may take additional time for the complete impact of the reform to be felt. However, indirect reforms were not associated with any significant change in either expenditures or outcomes, except for some significant short-term increases in expenditures. On the basis of their calculations, the authors suggested that if direct reforms were implemented throughout the United States, expenditures on cardiac disease would fall by more than $450 million annually for the first two years and by $600 million annually three to five years after adoption, with no significant decline in health outcomes.

Daniel P. Kessler and Mark B. McClellan (2000) attempt to explain the mechanism by which tort reform would lead to the differences in outcomes found in their earlier work. In so doing, they estimated the impact of tort reform on a number of measures of "malpractice pressure": the frequency of malpractice claims; the likelihood of a prolonged duration of claims resolution; administrative and legal expenses incurred in defending against a claim; and the amount of any settlement or award to the plaintiff.[53] They supplemented their earlier data with physician-level malpractice claims data from 19 states covering the 1984-1994 period and a nationwide survey of physicians covering the 1987-1997 period. As in their earlier work, the authors controlled for differences across states that do not vary over time, 14 categories of physician specialties, and states' political and regulatory environments.

Using survey data on the United States as a whole, the authors found that physicians in states that enacted either direct or indirect reforms experienced lower trends in malpractice claims rates than physicians in states that did not enact reforms. Physicians in direct-reform states experienced a 1.4 percentage-point decrease in claims rates,

51. Daniel P. Kessler and Mark B. McClellan, "Do Doctors Practice Defensive Medicine?" *Quarterly Journal of Economics,* vol. 111, no. 2 (May 1996), pp. 353-390; and Kessler and McClellan, "Malpractice Law and Health Care Reform: Optimal Liability Policy in an Era of Managed Care," *Journal of Public Economics,* vol. 84, no. 2 (2002), pp. 175-197.

52. Congressional Budget Office, Cost Estimate for H.R. 5, the Help Efficient, Accessible, Low-cost, Timely Healthcare (HEALTH) Act of 2003 (March 10, 2003).

53. Daniel P. Kessler and Mark B. McClellan, "How Liability Law Affects Medical Productivity," Working Paper No. 7533 (Cambridge, Mass.: National Bureau of Economic Research, February 2000), available at www.nber.org/papers/w7533.

while those in indirect-reform states had a 1.1 percentage-point decrease, compared with a 7.4 percent claims rate for the population as a whole. However, using the claims data from the 19 states, the authors found no statistically significant effect on claims rates.

Among measures of the resolution of medical malpractice claims in the 19 states for which data were available, the authors found mixed results. Those reforms grouped as direct reduced the number of claims paid, the number of claims incurring legal expenses, and the time it took to resolve claims. However, the reforms had no statistically significant effect on the value of claims or legal expenses. Among those states enacting reforms grouped as indirect, the authors found a statistically significant increase in most of their liability measures. In particular, they found that indirect reforms increased the number of claims paid, the number of claims incurring legal expenses, and the value of the legal expenses. However, they found no statistically significant impact on the value of the claims paid or how long it took to resolve claims.

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