Article

Tort Law and the American Economy

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It is common to hear claims that tort law is undermining the ability of America to grow economically. Tort liability imposes costs on businesses, who complain about its detrimental effects on investment and innovation. While many of these reports are anecdotal, or even false, there is growing evidence on the economic effect of tort law. Tort reform proposals are pressed, and often passed, on the basis of economic concerns. In this narrative, the law is unduly pro-plaintiff, which discourages business investment and innovation and needlessly raises the costs of products.¹

Despite these common claims of the economic harms of tort law, there is a remarkable paucity of actual study on the question. Only very limited research exists on the effects of tort law on state economies, and much of that research considers only particular tort reforms and not the overall state of a state’s law. Many factors will influence the economies of the various states, of which tort law is but one. However, if its economic effect were truly profound, one would expect to see some economic benefit, on some measure, for states with relatively pro-defendant tort law.

I examine the effects of tort law using indices created by two pro-defendant organizations, the United States Chamber of

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¹ Some contend that the stories about the effect of tort law are distorted and overblown. See generally WILLIAM HALTOM & MICHAEL MCCANN, DISTORTING THE LAW: POLITICS, MEDIA, AND THE LITIGATION CRISIS (2004) (presenting evidence that interest groups and the media have greatly exaggerated unrepresentative stories about tort law). However, just as anecdotal evidence cannot prove a claim, neither can demonstrating the inaccuracy of such anecdotal evidence disprove the claim.
Commerce and the Pacific Research Institute. While both groups believe that tort law hampers the economy, there is no reason to think these organizations should have a bias for or against particular states in their rating system, and their position on tort law makes their metrics ideal for an independent test of tort law’s effect.

This study considers those measures of state tort liability regimes and economic measures. I consider the often-used Chamber of Commerce measure of tort law (a perceptual measure) and the Pacific Research Institute’s measure of specific legal doctrines. The findings should significantly inform tort reform debates. The primary reason offered for such reform is the perceived adverse economic consequences of tort doctrines. A finding that tort law has such adverse effects would therefore be important. However, my research finds no such association between tort law and economic harm.

I. THE CONTROVERSY OVER TORT LAW

For decades now, a controversy has raged about tort law and its economic consequences. Defendants, especially businesses, complain of excessive, and often unfairly imposed, tort liability. The risks of tort liability allegedly include the unjustified transfer of wealth and the deterrence of valuable economic activity.

Some argue that “litigants often exploit the litigation process strategically for private gain at the expense of social welfare.” Philip K. Howard argues that the law is suffocating America. While occasional anecdotes about verdicts command public attention, the greater cost may be associated with the “complexity and expense of settling the vast majority of suits

2. There are also noneconomic concerns, such as distributional questions. See, e.g., Paul H. Rubin & Joanna M. Shepherd, The Demographics of Tort Reform, 4 REV. L. & ECON. 591, 593 (2008) (finding that tort reforms had a relatively more adverse effect on certain demographic groups, such as women, children, and the elderly). However, these concerns could be addressed through redistribution of greater wealth if tort reform did indeed produce more wealth.


that never go to trial, the chilling threat of suits over a widening range of issues, [and] the preparations needed to lessen the chances of being sued.”

This results in the deployment of “larg[e] armies of vigilant lawyers engaged in a kind of legal equivalent of [a] defensive cold war.” This obviously comes at a cost to the economy.

A. **ECONOMICS OF TORT LAW**

While tort litigation is commonly considered economically harmful, in theory it *should* be economically beneficial. The system is designed to force the internalization of costs imposed on others. A business would have less incentive to produce safe products if injured parties could not force the business to pay for their damages. This should cause more efficient product decisions, as businesses will not produce products whose harm (as measured in tort damages) exceeds their benefits. The economic costs associated with dangerous products may be considerable. Any failure to internalize these external costs would “violate the marginal conditions of optimal resource allocation and may become a major cause of inefficiencies.”

Tort law serves “social purposes,” most prominently the compensation of innocent victims and “deterring behavior that presents risks that exceed their social value.”

6. Pietro S. Nivola, *American Social Regulation Meets the Global Economy*, in *COMPARATIVE DISADVANTAGES? SOCIAL REGULATIONS AND THE GLOBAL ECONOMY* 16, 23 (Pietro S. Nivola ed., 1997). Less obvious costs, such as effects on morale, hours devoted to recordkeeping, and lack of innovation may add “tens of billions” of dollars to the true cost of tort liability in the United States. *Id.* at 34.

7. *Id.* at 23; see also *Id.* at 34 (complaining that “firms must devote substantial resources to warding off predators even when no complaint has been filed”).

8. *Id.* at 23.


11. Israel Gilead, *Tort Law and Internalization: The Gap Between Private Loss and Social Cost*, 17 INT’L REV. L. & ECON. 589, 589 (1997); see also Shapiro et al., *supra* note 10, at 777 (describing how the “tort system improves market efficiency by forcing the sellers of dangerous products to pay for costs that would otherwise be borne by other parties”).

12. Michael J. Saks, *Do We Really Know Anything About the Behavior of the Tort Litigation System—and Why Not?*, 140 U. PA. L. REV. 1149, 1150
Deterrence not only avoids negative accident costs but should also expand the number of economic transactions. People are relatively more reluctant to buy a product if it is more likely to harm them and if they have no recourse should such harm occur. Thus, in the “absence of standards, labels, and legal recourse against negligent producers, people might decline to purchase drugs, foods, and other consumer goods at prices that reflect their real economic value.” This would have the effect of decreasing economic activity and economic growth.

The expected economic benefits of tort law (beyond simply compensating deserving victims) stem largely from deterring the imposition of external costs on others for no compensation, such as by causing physical harm. The success of this deterrence is subject to empirical dispute. Some “studies of particular industries have found little evidence that American tort law consistently or significantly affects product design or safety.” However, some tort reforms in the area of medical malpractice apparently have resulted in an increase in medical misbehavior. Surveys of companies show a substantial number reporting that product liability law had induced them to improve the safety of their products. Unfortunately, numerous factors out-
side the tort liability system influence product safety, making it difficult to isolate the effect of the law.\textsuperscript{18}

At some level, the deterrence is simply logical economics. Those who must pay more for a given product (injuring others) will buy less of that product. The clearest evidence of this comes from the field of auto insurance. Some governments have eliminated traditional liability insurance in favor of no-fault systems in which compensation is unhinged from tortious behavior. A number of studies have found that this switch was accompanied by a statistically significant increase in auto accidents or fatalities.\textsuperscript{19} As injuring others became cheap, there were more injuries. Similar results have been found for the effect of dram shop laws.\textsuperscript{20} At least major tort law changes clearly show the expected deterrent value of tort liability.\textsuperscript{21}

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18. Much product safety comes from consumer preferences and firms’ reputations. Huber & Litan, supra note 3, at 22 (calling this the “principal impetus for developing and producing safe products”). Other factors include “moral principles discouraging people from needlessly inflicting risk and harm on others, the risk of hazardous behavior for the acting party’s own safety, market forces driving unsafe products out or internalizing job hazards in wage differentials, and the regulatory programs put in place by the government.” Ben C.J. van Velthoven, Empirics of Tort, in TORT LAW AND ECONOMICS 453, 454 (Michael Faure ed., 2009). An examination of these other factors in the context of automobile safety concluded that product liability was not strictly “necessary” to safety improvements, but that it was “often a sufficient or contributing cause of safety improvements.” Graham, supra note 9. In addition, various government agencies also regulate the safety of many products and prevent the sale of unsafe products. Nicholas A. Ashford & Robert F. Stone, Liability, Innovation, and Safety in the Chemical Industry, in THE LIABILITY MAZE: THE IMPACT OF LIABILITY LAW ON SAFETY AND INNOVATION, supra note 3, at 367, 370.


A recent study of malpractice liability may provide the most convincing evidence of tort costs and benefits. The authors of this study used the generosity of local juries as their measure of tort liability. They found that a 10% reduction in malpractice costs would reduce Medicare health care expenditures by at most 1.2%, but that a 10% increase in malpractice costs would reduce mortality by about 0.2%. Given the value of a life, the net effect of malpractice liability is probably positive. Moreover, the authors considered only mortality; assuming that a similar effect would apply to morbidity, the benefits of malpractice law would be still greater. This analysis was only one study, though, and limited to medical malpractice.

Indeed, there is an argument that there is not enough tort law in America and that economic inefficiency results from insufficient liability. A very small percentage of injured Americans file suit, even when another party may be responsible. Considerable research in the area of medical malpractice shows that most parties with legitimate cases took no legal action. An insufficient number of filed claims could also lead to an inadequate amount of deterrence, and some suggest the real “tort crisis” is that “too few victims claim.” In addition, when suits

21. For a good summary of the research on the deterrent effect of tort law, see van Velthoven, supra note 18.
23. Id. at 3.
24. Id. at 4.
25. Id.
are filed and won, the amount of damages may be unduly low. Thus, the economic problems with our tort system may be the opposite of those commonly claimed. The safety problems associated with chemicals may be ascribed to this insufficiency of litigation.

Theoretically, a good tort system should be economically beneficial. The conservative, pro-tort reform public interest organization, the Pacific Research Institute, explained:

An efficient tort system is an important part of a thriving free-enterprise economy. It ensures that firms have proper incentives to produce safe products in a safe environment, and that truly injured people are fully compensated. An efficient tort system results in greater trust among market participants, leading to more trading, and eventually a higher standard of living for individuals in the society. An efficient tort system benefits all.

A poor tort system, on the other hand, imposes excessive costs on society, not the least of which is foregone production of goods and services. There is growing evidence that U.S. tort costs are far greater than other countries’ costs and that much of the difference is due to excessive litigation and lawsuit abuse. All of us shoulder the burden of an excessively expensive and inefficient tort liability system through higher prices, lower wages, decreased returns on investment in capital and land, restricted access to health care, and less innovation.

Tort law is not per se harmful to the economy, but an inefficient tort system is. Therefore, the question is whether the American system is, as PRI claims, unduly pro-plaintiff and imposing excessive costs, or if it is more reasonable and efficient, producing net benefits to society. Originally, many thought that “judge-made rules tend to be efficiency-

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29. Most malpractice actions containing strong legal claims receive much less than full compensation of even their economic losses. KAGAN, supra note 15, at 140. A study of dangerous products found that tort compensation was less than the actual costs of those products. W. Kip Viscusi, Toward a Diminished Role for Tort Liability: Social Insurance, Government Regulation, and Contemporary Risks to Health and Safety, 6 YALE J. ON REG. 65, 95–97 (1989) (reporting that the amounts of judgments and settlements in product liability litigation was often less than the actual losses suffered by the victim). Compensation awarded in wrongful death actions is much less than the amount that economists have calculated as the reasonable value of a life. See Frank Cross & Charles Silver, In Texas, Life Is Cheap, 59 VAND. L. REV. 1875, 1916–23 (2006).

30. See Ashford & Stone, supra note 18, at 367 (finding the liability from torts well below the benchmark for optimal deterrence of harms).

promoting.” The basic theory is that the common law evolves through litigated cases, though many claims are settled. When a rule is inefficient, creating deadweight losses, there is a greater incentive to litigate to have it overturned. Given enough challenges, the inefficient rule will be changed, while efficient rules are less likely to be litigated. This process steers the common law in the direction of greater economic efficiency.

Some have even maintained that “[c]ommon law does not fit in a rent-seeking world.” The notion of common law efficiency has come under considerable criticism, however. Judges see only a small number of cases applying a rule, and the cases they see may well be unrepresentative. Barriers to efficiency include the stickiness of legal rules and the fact that rules of law are public goods in which we can expect litigants to under-invest. Given the path dependence of precedent, an inefficient rule may be amplified as it is increasingly litigated.

Public choice analysis, commonly applied to legislative analysis, can also be applied to judicial decision making, and may seriously undermine claims of economically efficient legal evolution. Repeat players, such as large companies, may manipulate their settlement practices so as to channel the law in a

35. See, e.g., John C. Goodman, An Economic Theory of the Evolution of the Common Law, 7 J. LEGAL STUD. 393, 393–94 (1978); Priest, supra note 33, at 75; Rubin, supra note 34.
36. Goodman, supra note 35, at 394; Priest, supra note 33, at 81; Rubin, supra note 34, at 61.
41. See Hirsch, supra note 39, at 428 (“[T]he doctrine of precedent stacks the adversarial deck against a party who seeks to revise a rule, whether or not the existing rule is efficient.”).
direction favorable to their future liability risks. The evolution of nuisance law to favor industrial polluters has been cited as an example of this effect. Such precedent purchasing through litigation would undermine an efficient common law of tort, presumably making the law unduly pro-defendant. The “haves” would tend to come out ahead in court battles. Insofar as this effect operates, it suggests that tort law is doing too little to internalize externalities.

Some have argued that plaintiffs’ lawyers engage in similar practices to expand tort liability law. Todd Zywicki argues that the “driving force behind many of the innovations in tort law in recent decades has been the plaintiffs’ bar, pushing for expansion of liability under the tort system as well as increasing complexity in the tort system.” Defense lawyers have no economic incentive to counteract this effect, because they too profit from additional litigation. Judges may be complicit in these efforts. This process has allegedly “made a mockery of the law and has eliminated a wide range of otherwise viable goods and services from the American marketplace.”

The empirical evidence supporting this claim is limited. One study examined the development of the abolition of privity doctrine for product liability and attributed it to rent-seeking


46. Zywicki, supra note 45, at 6–7. Richard Epstein has suggested that it is “in the interest of defendant firms to have a pro-plaintiff set of rules, which makes their own defensive efforts worthwhile for the manufacturers that hire them.” Richard A. Epstein, The Political Economy of Product Liability Reform, 78 AM. ECON. REV. 311, 313 (1988). Legal academics may also share culpability in this process. See Zywicki, supra note 45, at 19–22.


litigation by tort lawyers. Another found that states with more lawyers were quicker to abandon contributory negligence in favor of comparative negligence. Both studies have serious shortcomings, not least that the new pro-plaintiff documents seem more economically efficient. The research did not effectively distinguish between judicial and legislative adoption of doctrines, however, and study of additional doctrines did not confirm the results.

Additionally, even if the rules of tort law were efficient, the system could still fail in practice. The “performance of the liability system quickly becomes theoretically ambiguous if the system imposes transactions costs or erroneously assigns liability.” It may be that the costs of operating the tort law system are so great that they outweigh any practical economic benefits. Litigation costs themselves are great and may equal or even exceed the amount paid out to deserving plaintiffs. The high transaction costs may also distort payments. Defendants may choose to settle wholly illegitimate claims simply because the costs of litigation exceeded the settlement payments.

49. Rubin & Bailey, supra note 45.
51. See Frank B. Cross, The Role of Lawyers in Positive Theories of Doctrinal Evolution, 45 EMMORY L.J. 523, 574–75 (1996) (citing research to this effect).
52. Id. at 575–79.
53. See Huber & Litan, supra note 3 (noting that “[r]egardless of its net overall effects, the tort system may still be inefficient” because of the costs of administering it).
55. See Steven B. Hantler et al., Is the “Crisis” in the Civil Justice System Real or Imagined?, 38 LOY. L.A. L. REV. 1121, 1125 (2005) (reporting that plaintiffs were “receiving less than 50% of the money spent on litigation”); Joni Hersch & W. Kip Viscusi, Tort Liability Litigation Costs for Commercial Claims, 9 AM. L. & ECON. REV. 330, 330 (2007) (reporting that total transaction costs for each dollar received by claimants reach $0.83 in cases where a suit was filed with an attorney).
The transaction costs of tort litigation exceed those of alternative compensation schemes like workers’ compensation. On the other hand, the cheaper schemes generally do not attempt to distinguish between deserving and undeserving injured parties, sacrificing the efficiency advantages of tort law. The costs are associated primarily with this differentiation and may therefore be useful. Screening out bad claims is key to the law and its efficiency. Studying this effect, Charles Silver found no evidence that alternative dispute resolution systems were more efficient and concluded that the tort litigation system operated efficiently. In any event, the high administrative costs of the tort law system must be considered when assessing its economic effect.

Tort law may fail to efficiently apportion liability because each case is so unique. There is a contention that whether a tort plaintiff is compensated “in a product liability case depends on various matters of chance such as the relative skills of the attorneys on each side, the composition of the jury, and the timing of case resolution relative to the timing of information about injury causation coming to light.” Random variation in numerous surrounding facts could produce inefficient results even with an efficient set of legal standards. If so, the tort system could function inefficiently, much like a lottery, though some suggest this is unlikely. Consequently, one must

57. See 1 AM. LAW INST., REPORTERS’ STUDY: ENTERPRISE RESPONSIBILITY FOR PERSONAL INJURY 119 (1991) (suggesting that workers’ compensation administrative costs are only 15–20% of overall payouts, while the tort system’s costs are 50–55%).
59. See id. at 2106–07 (finding that without ADR, litigants in the existing tort system “are minimizing litigation costs on their own”).
61. See Huber & Litan, supra note 3, at 21 (claiming that “the uncertainty of the tort system is its greatest vice, magnifying risks of liability while disconnecting them from unduly risky conduct”).
62. See, e.g., Troyen A. Brennan & Philip K. Howard, Op-Ed., Heal the Law, Then Health Care, WASH. POST, Jan. 25, 2004, at B7 (commenting that “[t]he legal system today is a string of ad hoc decisions” and “[j]ustice . . . is basically random”).
63. See Hyman & Silver, supra note 27, at 1086–87 (characterizing the liability system as a market of “sophisticated, economically-oriented repeat players” who “have the knowledge and incentives to select efficient means to accomplish their respective ends” and noting that “[g]iven this backdrop, their behavior and the behavior of the system . . . should not be random”). The au-
consider both the substantive rules of tort law and procedural factors in evaluating the American tort liability system.

It is possible that, notwithstanding all these limitations on the efficiency of tort litigation, it could still be economically beneficial. Tort law can be a substitute for government regulation and international comparisons have found this to be the case.\textsuperscript{64} When compared with legislative solutions, “litigation may in fact be an efficient means of resolving social conflicts.”\textsuperscript{65} More pro-defendant tort law regimes could be associated with more aggressive regulatory regimes, and reliance on tort litigation may be economically beneficial.

B. TORC COSTS

As noted above, there is a widespread belief that the tort system imposes unfair costs on defendants, creating economic inefficiency and harming society at large. Some researchers have sought to measure these costs and quantify their magnitude.

Pacific Research Institute (PRI) recently alleged that excessive tort costs in the United States amount to $589 billion per year.\textsuperscript{66} This estimate, though, is simply a comparison of the estimated costs of torts in the United States with those of other advanced countries.\textsuperscript{67} This is an unreliable measure, because tort law plays different roles in different nations.\textsuperscript{68} In the United States, tort costs may be higher because the direct government regulatory system (with criminal enforcement) in this nation is smaller, with more reliance placed on civil justice

\textsuperscript{64} KAGAN, supra note 15, at 126–28.

\textsuperscript{65} Tonja Jacobi, The Role of Politics and Economics in Explaining Variation in Litigation Rates in the U.S. States, 38 J. LEGAL STUD. 205, 206 (2009).


\textsuperscript{67} See Baker, Kritzer & Vidmar, supra note 66, at 8.

\textsuperscript{68} See id.
through torts. 69 Robert Kagan has demonstrated this international effect, with an argument that America should rely more on regulation and less on tort litigation. 70 This may be true, but it means that the net costs of tort law cannot be measured across countries because they have different institutions devoted to achieving the accident-reducing goal of tort law and the data to make such a comparison does not exist.

Another study, by the Council of Economic Advisers under President George W. Bush, put the annual direct costs of the tort litigation system at $180 billion (1.8% of GDP), representing a functional tax of 2% on consumption, 3% on wages, or 5% on capital income. 71 This analysis made no a-


70. Id. at 126–55; see also Marc Galanter, Real World Torts: An Antidote to Anecdote, 55 Md. L. Rev. 1093, 1141 (1996) (emphasizing that unlike the other nations studied, "we do not have an administrative state with intensive governmental regulation of risks, nor do we have a comprehensive welfare state"). The lessened tort liability in other nations may be due to factors such as public entitlements or alternative compensation systems. WERNER PFENNINGSTORF & DONALD J. GIFFORD, A COMPARATIVE STUDY OF LIABILITY LAW AND COMPENSATION SCHEMES IN TEN COUNTRIES AND THE UNITED STATES 160 (1991); see also Baker, Kritzer & Vidmar, supra note 66, at 9 (observing that "[o]ther countries have stronger regulatory mechanisms that eliminate the need for some types of tort claims" or have "[s]ocial welfare systems [that] may reduce the need to rely upon tort claims for support and compensation after injury").

71. COUNCIL OF ECON. ADVISERS, WHO PAY FOR TORT LIABILITY CLAIMS? AN ECONOMIC ANALYSIS OF THE U.S. TORT LIABILITY SYSTEM 1 (2002). These estimates came from TILLINGHAST-TOWERS PERRIN, U.S. TORT COSTS: 2000, TRENDS AND FINDINGS ON THE COSTS OF THE U.S. TORT SYSTEM (2002). The Council of Economic Advisers recognizes that not all these costs are excessive but estimates that $136 billion of them are. COUNCIL OF ECON. ADVISERS, supra at 10. Although it was relied upon by President Bush’s Council of Economic Advisers, the reliability and accuracy of the Tillinghast estimates have been criticized. See, e.g., Baker, Kritzer & Vidmar, supra note 66, at 4 (suggesting that "regulators deliberately designed the reporting system to require the insurance industry to err on the high side" and that a third of the costs were based on malpractice and self-insured expenditures "for which there were no reliable, publicly available data"); Lawrence Chimerine & Ross Eisenbrey, The Frivolous Case for Tort Law Change: Opponents of the Legal System Exaggerate Its Costs, Ignore Its Benefits 2–3 (Econ. Policy Inst., Briefing Paper No. 157, 2005) (noting that the study disregarded benefits, exaggerated costs, showed no correlation with economic outcomes, included the insurance industry’s own administrative expenses, and included other flawed costs). Other research has concluded that the cost of insuring products liability is only about 0.2% of corporate revenues. CARL T. BOGUS, WHY LAWSUITS ARE GOOD FOR AMERICA: DISCIPLINED DEMOCRACY, BIG BUSINESS, AND THE COMMON LAW 219 (2001).
tempt to consider the countervailing economic benefits associated with tort litigation, however. Critics of the tort system often characterize the costs of litigation as a “tort tax.” The former board chairman of Home Depot complained that a “tort tax” cost every American $2400 per year. One writer opined in the Wall Street Journal that tort costs represented over 2% of the gross national product and would amount to $4.8 trillion over a ten year period. A later opinion piece updated this figure to estimate the cost of torts at over $865 billion per year.

There are some obvious flaws in these cost estimates for the tort system. In addition to failing to consider the benefits of tort litigation, such measures of cost make the economic mistake of conflating an economic transfer with an economic cost. This money expended on the tort system is not lost to society, but simply transferred to other parties (from defendants to plaintiffs, lawyers, and others who gain from the system). When a verdict transfers money to a plaintiff, that event is a cost to the defendant but not directly to society. Society has the same wealth, some of it is simply held in different hands. “Because the tort action results in a direct transfer payment, there is no deadweight loss in the economic analysis model . . . .”

Of course, some transfer payments may result in deadweight loss. If money is transferred from a person who would

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72. Chimerine & Eisenbrey, supra note 71.
73. See Peter W. Huber, Liability: The Legal Revolution and Its Consequences 3–5 (1988). Over twenty years ago, Peter Huber claimed the existence of such a tort tax was harming the United States’ commercial competitiveness. Id. at 228–30.
77. This distinction is often discussed in antitrust law, where economists typically do not regard the excess profits of a monopolist as an economic loss to society. See, e.g., Maurice E. Stucke, Should the Government Prosecute Monopolies?, 2009 U. ILL. L. REV. 497, 505 (observing that “antitrust economists are generally agnostic about these wealth transfers”); Oliver E. Williamson, Economies as an Antitrust Defense Revisited, 125 U. PA. L. REV. 699, 711 (1977) (suggesting that the “transformation of benefits from one form (consumers’ surplus) to another (profit) is treated as a wash under the conventional welfare economics model”).
use it more efficiently to one who would use it less efficiently, there is some deadweight loss. More relevant to tort law, if the law over-deters, it may prevent the introduction of useful products, which could produce a net loss to society.\textsuperscript{79} Of course, if the law under-deters, the social loss comes from insufficient tort liability and inefficient allocation of risk.\textsuperscript{80} The point is that one cannot simply use the amount of tort liability payments as a measure of the system’s economic costs. The true cost estimates come in the form of indirect effects on society, positive or negative.

One central indirect effect is on product innovation and development.\textsuperscript{81} Defenders of the tort system argue that it offers a great benefit by encouraging safer products, as business seeks to avoid the costs of liability associated with producing a less safe product.\textsuperscript{82} A model system would require manufacturers to internalize the external harms caused by their business. However, critics of the tort system contend that it actually discourages innovation and new products.\textsuperscript{83} While an optimal tort liability system should encourage efficient innovation, “unchecked and unbalanced tort law can limit the availability of necessary medical services, discourage innovation, lead to the removal of useful and safe products and devices from the marketplace, and increase costs to consumers.”\textsuperscript{84} Some suggest that “the broad and unpredictable sweep of U.S. liability law deters innovation.”\textsuperscript{85} There are numerous examples of various products, in-

\begin{itemize}
\item \textsuperscript{80} Cf. R. William Ide III, \textit{The Role of the Justice System in the Product Liability Debate}, in \textit{PRODUCT LIABILITY AND INNOVATION: MANAGING RISK IN AN UNCERTAIN ENVIRONMENT} 37, 43 (Janet R. Hunziker & Trevor O. Jones eds., 1994) (describing American’s product liability system as a competitive advantage in the global marketplace when “it provides a fair, open system in which consumers with legitimate claims can be protected while also shielding manufacturers against unwarranted claims”).
\item \textsuperscript{82} Ide, supra note 80, at 40–41.
\item \textsuperscript{83} La Fetra, supra note 79.
\item \textsuperscript{84} Victor E. Schwartz \textit{et al.}, \textit{Fostering Mutual Respect and Cooperation Between State Courts and State Legislatures: A Sound Alternative to a Tort Tug of War}, 103 W. VA. L. REV. 1, 2 (2000).
\item \textsuperscript{85} Huber & Litan, supra note 3.
\end{itemize}
cluding medical advances, that were not introduced because of liability fears.\footnote{See id. at 7.}

For the critics of our current system, even “the prospect of tort liability . . . inhibits innovation.”\footnote{La Fetra, supra note 79, at 646; see also Richard J. Mahoney & Stephen E. Littlejohn, Innovation on Trial: Punitive Damages Versus New Products, 246 SCI. 1395, 1395–96 (1989) (blaming the threat of punitive damages for discouraging new product innovation); Parchomovsky & Stein, supra note 81, at 286 (contending that tort law’s reliance on custom as a standard has the effect of discouraging innovation).} The theory is that liability is so costly and unpredictable that companies will shun new product development out of fear for future unforeseen liability. Michael Porter contends that our system of product liability “is so extreme and uncertain as to retard innovation.”\footnote{Michael E. Porter, The Competitive Advantage of Nations 649 (1990); see also Man C. Maloo & Benjamin A. Neil, Products Liability Exposure: The Sacrifice of American Innovation, 13 J. PROD. LIAB. 361, 362 (1981) (contending that “[t]he fear of products liability lawsuits, and a legal system which encourages their institution and permits huge damage awards, are having a chilling effect on technological innovation”); Dick Thornburgh, America’s Civil Justice Dilemma: The Prospects for Reform, 55 MD. L. REV. 1074, 1078 (1996) (arguing that “[t]he threat of liability has significantly inhibited the product development and innovation needed to provide improved services to consumers and to assure a leadership role . . . worldwide”).} Some products are occasionally cited in support of this contention, such as vaccines and small aircraft production.\footnote{E. Patrick McGuire, The Impact of Product Liability 17–18 (The Conference Bd., Research Reports No. 908, 1988).} A Conference Board survey has reported that some businesses have abandoned new products because of liability fears,\footnote{See Huber & Litan, supra note 3, at 8 (noting that survey respondents, “especially top-level corporate officials, can be quick to blame external forces for problems arising elsewhere”).} though some caution is warranted in interpreting survey results.\footnote{See, e.g., Mary L. Lyndon, Tort Law and Technology, 12 YALE J. ON REG. 137, 148–70 (1995) (arguing that the existing tort liability structure provides appropriate safety incentives for future innovation).} Yet others argue that the threat of tort liability has served its purpose in deterring unsafe product innovation.\footnote{See, e.g., Bruce E. Peterman, General Aviation Engineering in a Product Liability Environment, in PRODUCT LIABILITY AND INNOVATION: MANAGING RISK IN AN UNCERTAIN ENVIRONMENT, supra note 80, at 62, 62–67 (small aircraft); John P. Wilson, The Resolution of Legal Impediments to the Manufacture and Administration of an AIDS Vaccine, 34 SANTA CLARA L. REV. 495, 504 (1994) (vaccines).}

\footnote{See id. at 7.}

\footnote{La Fetra, supra note 79, at 646; see also Richard J. Mahoney & Stephen E. Littlejohn, Innovation on Trial: Punitive Damages Versus New Products, 246 SCI. 1395, 1395–96 (1989) (blaming the threat of punitive damages for discouraging new product innovation); Parchomovsky & Stein, supra note 81, at 286 (contending that tort law’s reliance on custom as a standard has the effect of discouraging innovation).}

\footnote{Michael E. Porter, The Competitive Advantage of Nations 649 (1990); see also Man C. Maloo & Benjamin A. Neil, Products Liability Exposure: The Sacrifice of American Innovation, 13 J. PROD. LIAB. 361, 362 (1981) (contending that “[t]he fear of products liability lawsuits, and a legal system which encourages their institution and permits huge damage awards, are having a chilling effect on technological innovation”); Dick Thornburgh, America’s Civil Justice Dilemma: The Prospects for Reform, 55 MD. L. REV. 1074, 1078 (1996) (arguing that “[t]he threat of liability has significantly inhibited the product development and innovation needed to provide improved services to consumers and to assure a leadership role . . . worldwide”).}


\footnote{See Huber & Litan, supra note 3, at 8 (noting that survey respondents, “especially top-level corporate officials, can be quick to blame external forces for problems arising elsewhere”).}

\footnote{See, e.g., Mary L. Lyndon, Tort Law and Technology, 12 YALE J. ON REG. 137, 148–70 (1995) (arguing that the existing tort liability structure provides appropriate safety incentives for future innovation).}
threat of tort liability producing valuable innovation.\textsuperscript{93} Viscusi and Moore have conducted analyses that generally show that at lower product liability costs, innovation is encouraged but that unusually high costs can deter valuable innovation.\textsuperscript{94} One study, though, compared tort costs as a percentage of GDP and overall research and development spending and found no correlation between the two.\textsuperscript{95}

Another commonly invoked cost of the tort system is international competitiveness.\textsuperscript{96} The unusually high liability costs of the American system purportedly make our products less able to compete with the output of other countries with less intrusive systems of tort law.\textsuperscript{97} The infamous Texaco/Pennzoil decision alone reportedly harmed our competitiveness by increasing the costs of doing business, inhibiting business transactions, and creating uncertainty.\textsuperscript{98}

A survey of senior executives found that a majority believed that “the U.S. civil justice system significantly hampers the ability of U.S. companies to compete with Japanese and European companies.”\textsuperscript{99} The Commerce Department has reported that “[f]ear of litigation is among the top issues listed by senior executives who manage internationally owned U.S. businesses.”\textsuperscript{100} Studies by Eurochambres and the Organization

\textsuperscript{95} Chimerine & Eisenbrey, supra note 71, at 10.
\textsuperscript{96} See, e.g., Ji Yao Shen et al., Challenges Facing U.S. Manufacturing and Strategies, 23 J. INDUS. TECH., Apr.–Oct. 2007, at 1, 5 (declaring that the American “tort system undermines the competitiveness of U.S. manufacturers”); Philip Shuchman, It Isn’t that the Tort Lawyers Are So Right, It’s Just that the Tort Reformers Are So Wrong, 49 RUTGERS L.J. 485, 504 (1997) (noting that “[m]any concerned groups, public and private, claim that U.S. product liability laws are a significant factor and sometimes the most important cause of what is perceived as a decline in the competitiveness of U.S. firms in the international market”).
\textsuperscript{97} See Thornburgh, supra note 88, at 1077–78.
\textsuperscript{99} The Verdict from the Corner Office, BUS. WK., Apr. 13, 1992, at 66, 66. However, another survey of risk managers of major American companies found that “the impact of the liability issue seems far more related to rhetoric than to reality.” NATHAN WEBER, PRODUCT LIABILITY: THE CORPORATE RESPONSE 2 (The Conference Bd., Research Reports No. 893, 1987).
for International Investment likewise found concern over tort liability among international investors, who cited it as a drawback to investing in the United States. However, the actual effects of tort litigation are uncertain, and there is little reliable evidence on this issue.

The costs of the alleged tort tax may also be exaggerated. One thorough study estimated that the average cost was “at most . . . as high as 2 percent of the cost of all products and services sold in the United States,” and the author found no material association between liability costs and exports among the seven industries studied. Similarly, the Commerce Department observed that foreign investment in this country surged at a time when tort costs as a percentage of GDP were at their peak. It appears that greater liability “might sharpen, rather than blunt, the competitive edge of U.S. producers,” as their products had an enhanced reputation for quality.

Moreover, to evaluate the costs of the tort tax internationally, one must consider the benefits of tort litigation. The net costs of any tort tax must also be reduced by actual taxes collected by other nations in their public compensation systems that replace tort law. Ultimately the research on the economic effect of the United States tort liability system is indeterminate, unless these effects are considered.

C. The Economics of Tort Law in Courts and The Legislature

The concern over the economic effects of tort law has found its way into some judicial decisions. Justice Ketchum of the West Virginia Supreme Court has argued that medical moni-

101. Id. at 5–6.
102. See id. at 10 (noting that “not enough evidence or research currently exists to determine the litigation environment’s actual effects” on foreign direct investment, so that “additional quantitative data is needed to guide policymakers”).
104. Id. at 143.
105. U.S. DEPT OF COMMERCE, supra note 100, at 11.
106. Nivola, supra note 6, at 36.
107. See PORTER, supra note 88 (noting that product liability “can benefit competitive advantage by acting like a sophisticated buyer to encourage the development of better products”). Porter believes, though, that the U.S. system fails to achieve this benefit because product liability litigation is excessive. Id.
toring claims could leave the state’s “economy in shambles.” This was simply an impressionistic evaluation, though, that did not use the research on the economic effects of tort law.

The research on economic effects has been invoked in some recent opinions. Courts have been loath to rely directly upon this research, considering this a “policy dispute[].” More frequently, courts have deferred to the legislature’s findings on the economic research. Thus, the Supreme Court of Ohio noted that the legislature reasonably used studies from the National Bureau of Economic Research, the Council of Economic Advisors, and Tillinghast-Towers Perrin, as well as a Harris poll and testimony from a state officer when finding that tort litigation represented “a challenge to the economy.”

This sort of economic research should be relevant to the state of tort law. Although it is not the only factor (matters of distributive justice may be considered), economic consequences surely are relevant to at least legislative action. Concerns over economic and other external effects have influenced the tort reform movement in state legislatures. Moreover, such pragmatic concerns may influence the judiciary, even if they are not expressly relied upon in opinions. Hence, the evaluation of economic effects may be legally salient.

II. RESEARCH ON TORT LAW AND THE ECONOMY

If the tort litigation climate in a given state significantly affects economic performance, then one would expect that the tort litigation climate should have an effect on business decisions. The business consultants at McKinsey & Co. have reported that “tort risks are second in importance in deciding where to establish operations.” The Chamber of Commerce reported that as many as 82 percent of survey respondents said

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that the legal climate was a factor in business location decisions. Such a significant factor should show up in economic outcome measurements.

Some research has already tested the effects of tort law on economic variables. Much of this research has involved particular areas of law (such as medical malpractice), individual doctrines (such as joint and several liability) or discrete economic measures (such as labor productivity). Unfortunately, there is little research on overall economic effects of the tort litigation environment. The research that exists is generally not rigorous. This Section begins by reviewing the leading empirical studies on economic effects of tort law.

A. STUDIES OF TORT REFORM

A movement to reform tort law, generally in a pro-defendant direction, began in the 1980s and continues to this day. Some have sought to assess the effects of tort law by examining the before and after effects of tort reform, typically with respect to the operation of the legal system. Thus, placing caps on noneconomic damages was associated with reduced litigation and reduced damage awards. A variety of reforms had the effect of reducing general liability losses. However, these studies do not directly measure the overall economic effects of tort reform.

Some have analyzed the general economic effects of tort reform, including medical malpractice and its effect on the

113. John N. Frank, Do Legal Costs Really Drive Up the Cost of Doing Business in North America? And Is This the Year That All Changes?, FORWARD ONLINE (May/June 2004), http://forward.msci.org/articles/0605tort.cfm (discussing HARRIS INTERACTIVE, 2005 U.S. CHAMBER OF COMMERCE STATE LIABILITY SYSTEMS RANKING STUDY 13 (2005)).


116. See Albert Yoon, Damage Caps and Civil Litigation: An Empirical Study of Medical Malpractice Litigation in the South, 3 AM. L. & ECON. REV. 199, 203 (2001) (finding that average recovery by plaintiffs decreased after medical malpractice damage caps were implemented).

medical profession or insurance.\textsuperscript{118} Other early research considered the effect of liability reforms on state labor productivity.\textsuperscript{119} The authors found a dramatic effect, with states that adopted tort reform having significantly greater increases in aggregate labor productivity.

The study’s simple definition of labor productivity (gross state product divided by employment) may be unreliable. Various other factors can influence labor productivity, including the composition of business for a particular state. The authors considered effects in different industry sectors, but the results were rather mixed—in some cases increased liability was associated with significant productivity increases, in others not.\textsuperscript{120} The authors controlled for political and interest group factors,\textsuperscript{121} but a vast number of possible third factors were not controlled for and may well explain the results. The authors acknowledged a possible endogeneity bias (that tort reform correlated with unobserved determinants of productivity) but had no means to test this effect.\textsuperscript{122} Moreover, while labor productivity is a very important economic factor, the study did not measure the externalities from liability reform and largely misses the economic benefits (i.e. deterrence) of tort liability.

Another study sought to measure the benefits of tort law through accident reduction, but hypothesized that excessive tort law could increase accidents by discouraging innovative and beneficial products.\textsuperscript{123} The authors measured the effects of tort reforms such as limits on punitive and noneconomic damages, provision for prejudgment interest, collateral source rules, and joint and several liability on states’ accidental, non-

\textsuperscript{118} \textit{See, e.g.}, Ronen Avraham et al., \textit{The Impact of Tort Reform on Employer-Sponsored Health Insurance Premiums}, J.L. ECON & Org. (forthcoming), \textit{available at} http://jleo.oxfordjournals.org/content/early/2010/12/30/jleo.ewq017.full.pdf (finding that certain tort reforms reduced insurance premiums slightly, by one to two percent).


\textsuperscript{120} \textit{Id.} at 126–29.

\textsuperscript{121} \textit{Id.} at 127.

\textsuperscript{122} \textit{Id.} at 133.

\textsuperscript{123} Paul H. Rubin & Joanna M. Shepherd, \textit{Tort Reform and Accidental Deaths}, 50 J.L. & ECON. 221, 235–36 (2007). This hypothesis is grounded in other research showing that there is an optimal level of tort law for innovation and that excess tort liability may reduce beneficial product safety innovation. Viscusi & Moore, \textit{supra} note 94.
motor vehicle death rates.\textsuperscript{124} They found that some tort reforms (such as damage caps) had the effect of reducing accident rates, though other reforms (reforms related to product liability and one type of collateral source reform, admit evidence) were associated with increases.\textsuperscript{125} Overall, states with tort reforms generally had greater decreases in accident rates than those without such reforms and the authors estimated that the net effect of tort reform was to save approximately 24,000 lives.\textsuperscript{126} While this study did not measure economic effects, it struck at the very economic purpose of tort law—to deter causing accidents.

One of the authors, though, subsequently reached different conclusions when examining malpractice laws. She found that caps on total damages and collateral source reforms were associated with an increase in deaths.\textsuperscript{127} In addition, the migration of doctors to reform states may have increased deaths in neighboring states, and the reforms disproportionately harmed women.\textsuperscript{128} Much like the general studies on the deterrent effect of tort law, the result of research on tort reform effects is ambiguous. While the authors sought to control for other determinants of death rates, they could consider only a few, and many uncontrolled third variables may have been the true explanation of the results.

As a general rule, studies of tort reform have significant limitations because they do not consider the baseline level of tort law that is being reformed. This may produce selection bias and endogeneity problems. Suppose that there is some optimally efficient state of tort law (say at 0.5). States with more pro-plaintiff tort law systems (say at 0.75) that adopt pro-defendant reforms should show economic benefits. However, a state with more pro-defendant baseline tort law (say at 0.25) that adopted similar pro-defendant reforms would not show these benefits, because it would be moving further away from the optimum. Thus, a study of reform without considering the baseline tort law reformed may produce distorted results.

Consider how a focus on tort reform legislation might yield misleading results in the tort context. It is plausible that more pro-plaintiff states, with inefficient baseline law, are more likely to adopt tort reforms. Because these states begin with a

\textsuperscript{124} Rubin & Shepard, supra note 123, at 229.
\textsuperscript{125} Id.
\textsuperscript{126} Id. at 235.
\textsuperscript{127} See Shepard, supra note 14, at 970.
\textsuperscript{128} Id.
baseline that is excessive, those reforms should tend to show positive effects. But the positive effect comes not from the content of the reforms themselves so much as from the shift in the underlying baseline. One could not necessarily expect other states, with a baseline tort law that is more pro-defendant, to gain positive results from further tort reforms. Similarly, the association between tort reform and reduced accidental deaths might be an artifact of the states that adopted tort reform being those where such action was beneficial.

This is evident from the study of the effect of tort reform measures on labor productivity. Reform that decreased liability had a very positive, statistically significant, effect on labor productivity in the finance, insurance, and real estate sector. However, the study found that reforms that increased liability also had a (slightly less) positive, statistically significant effect on labor productivity in this sector. While this might be attributable to mere random noise, it also might show an efficient selection effect—those states were moving their baseline law in the direction of optimality.

This possible selection effect bias is but one example of how studies of tort reform may be skewed. Research on costs shows that the states most likely to adopt medical malpractice tort reform are also those with managed care, so that the results may not simply be attributable to the tort reform but instead to a third factor, or a third factor combined with tort reform. Consequently, the baseline level of tort liability law must be examined.

While the studies of tort reform provide us with some information, the selection effect problems mean that they have significant limitations in describing the economic effects of tort law. It is the baseline overall status of tort law that must be evaluated economically. I move on to undertake such a test, using the Chamber of Commerce and PRI measures of interstate differences in tort law. The following section presents my analysis of these scales on various economic measures.

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129. Campbell et al., supra note 119, at 127.
130. Id.
131. Id.
B. THE ECONOMIC EFFECTS OF TORT LAW

As discussed above, some have studied the effect of tort law on economic variables, such as innovation.133 Other research on individual products found that lessened liability tends to reduce product prices.134 There is little rigorous evidence, though, on the overall economic effect of different tort liability standards.

Some existing research, though not peer reviewed, has gone beyond the tort reform context and sought to examine the effects of baseline tort standards, using the PRI and Chamber of Commerce measures. These studies will be discussed in more depth later in this paper. A PRI study found that states with better rankings on their measure of tort law had better state gross domestic product growth, labor earnings growth and tax revenue increases.135

Another study used the Chamber of Commerce index and found that higher rankings on that scale were associated with better state per capita economic growth.136 This brief study considered only state growth rates from 1995 to 1999.137 The research contained no control variables whatsoever to account for possible third factors and its results are therefore quite tentative.

This existing research is relatively crude and conducted by conservative or business groups devoted to reducing tort liability. A liberal, anti-tort reform group has conducted its own research and found no association between tort costs and factors such as innovation and productivity.138 This analysis was likewise crude, though, and may also have been infected by the bias of the researchers.

133. See Viscusi & Moore, supra note 94.
137. Id. at 5.
International evaluations are complicated by substantial differences among nations (other than tort litigation). The role of government in these countries differs, as do their cultures. Moreover, reliable international data on litigation is quite limited. Consequently, cross-national research offers less promise for assessing the economic effects of tort litigation.

The American states offer greater promise as a laboratory for a general study of the effects of tort law. While there are various cultural and other differences among the states, they are surely more similar than different nations and are part of a single market, with little restriction on interstate commerce. A great deal of data is available on the states for use in an empirical analysis. The most uncertain data is on the state of different tort liability systems, and I use both the Chamber and PRI measures in this analysis.

It has been argued that “[m]uch of what we think we know about the behavior of the tort litigation system is untrue, unknown, or unknowable.” Since this time, though, additional information has become available, such as the Chamber and PRI studies, which enable us to understand more. While I would not purport to have ascertained the final answers, this research may illuminate the effects of tort law on economic matters of interest.

III. THE MEASURES OF TORT LAW USED IN THIS STUDY

Quantitatively evaluating the effect of tort law on the economy requires some measure of the state of tort law. The United States provides the states as a laboratory—while our states share much tort law in common, they also have distinctive differences. History has seen some dramatic differences in state tort law (e.g., comparative vs. contributory negligence, strict product liability). Today, the differences in state tort law are not so great, but material differences remain, and they

139. See, e.g., Herbert M. Kritzer, Propensity to Sue in England and the United States of America: Blaming and Claiming in Tort Cases, 18 J.L. & Soc’y 400, 400 (1991) (suggesting that different litigation practices in these nations “reflect fundamental cultural perspectives”).

140. Saks, supra note 12, at 1149; see also F. Patrick Hubbard, The Nature and Impact of the “Tort Reform” Movement, 35 Hofstra L. Rev. 437, 476–77 (2006) (suggesting that “because of the limitations on the available data concerning the operation of the tort system and the effect of reforms, there is no way to be sure whether the tort system hinders innovation, competitiveness, or access to healthcare, whether it provides an improper level of incentives for safety, or whether tort reform will reduce any undesirable effects”).
have been considered significant. To conduct an empirical study of such differences requires some quantitative measure, and at least two are available and will now be summarized.

A. CHAMBER OF COMMERCE

In 2002, the United States Chamber of Commerce began publishing a survey evaluating state tort law systems, which has become the best-known rating system for tort law. The Chamber employed Harris Interactive to conduct telephone interviews of a “nationally representative sample of in-house general counsel, senior litigators and other senior attorneys who are knowledgeable about litigation matters at companies with annual revenues of at least $100 million.” Of the 957 respondents, only 6% were from insurance companies. The survey is not limited to tort litigation but also considers contract law.

The survey respondents were asked to give grades ranging from “A” to “F” on twelve topics. The issues rated for each state were:

- Having and enforcing meaningful venue requirements,
- Overall treatment of tort and contract litigation,
- Treatment of class action suits and mass consolidation suits,
- Punitive damages,
- Timeliness of summary judgment or dismissal,
- Discovery,
- Scientific and technical evidence,
- Non-economic damages,
- Judges’ impartiality,
- Judges’ competence,
- Juries’ predictability, and
- Juries’ fairness.

The respondents’ assessments are then cumulated to provide a mean grade for each category and the mean grades are averaged to provide an overall state grade.

142. Id. at 6.
143. Id.
144. Id.
145. Id.
146. Id. at 7.
The topics are not ideal for a study of tort law. While some seem largely focused on tort issues (punitive damages, non-economic damages), others are much broader (e.g., assessing the quality of judges across the board). In addition the “overall treatment” category would seem to take account of other categories, yet they are all added together and given equal weight for an overall score.\footnote{147}{Id.}

The Chamber of Commerce ratings of tort law have been criticized by Theodore Eisenberg.\footnote{148}{Id.} He complains that the Chamber’s survey reflects a biased sample, because it reflects only the views of those on the business side of litigation.\footnote{149}{Id. at 974–75.} He also identifies an apparent correlation between ratings and state population.\footnote{150}{Id. at 995–97.} Another potential bias arises from the fact that the survey’s respondents were provided with the results from preceding years.\footnote{151}{Id.} Eisenberg proceeds to demonstrate the apparent inaccuracy of the ratings on particular legal measures, such as punitive damages and class action treatment.\footnote{152}{Id. at 982–87.} The high intercorrelation of state assessments on different legal measures suggests to him that some underlying “latent” factor explains the relative ratings of the states.\footnote{153}{Id. at 977.} In response to these criticisms, a representative of the survey company explained that the goal of the research was to measure perception, not the actual state of the law, and the negative effects of tort liability may primarily be the result of perceptions.\footnote{154}{See GARY L. GITTINGS & JOHN W. BAGBY, MANAGING PRODUCT LIABILITY TO ACHIEVE HIGHWAY INNOVATIONS 4 (Nat’l Coop. Highway Research Program, Synthesis of Highway Practice No. 265, 1998) (suggesting that “[p]erception versus reality of product liability [is] a barrier to innovation”); Alan S. Miller & Lawrence R. Holzman, Products Liability and Associated Perceptions of Risk, 19 ANN. REV. ENERGY & ENVIRON. 347, 353 (1994) (noting that “current perceptions of products-liability risk ‘chills’ innovation in technological endeavors”).}

While the perception defense has some value, it undermines the true test of tort law, insofar as the rating may not reflect actual change in the laws. Alabama, for example, has seen
a significant change in its tort law regime, without a corresponding shift in Chamber of Commerce evaluations. This suggests that actual tort law rules do not drive perceptions as measured by the survey, which would undermine any argument for changing actual rules. However, it is also possible that it takes time for perceptions to change. Businesses may wait to see how new legal rules influence trial practice before changing their impression of a state’s tort environment.

The overall impact of Eisenberg’s criticisms is uncertain. There is no reason to think respondents are biased between states. Moreover, business perceptions of state law could be the more accurate reflection of the effect of tort law in a given state. Judges are very deferential to jury verdicts, and judges themselves may apply the law differently for ideological or other reasons. Finally, the existence of an underlying factor does not undermine the validity of the test—in fact, such a factor is precisely what we are talking about when we discuss the effects of tort law on the economy.

One study using the Chamber of Commerce measures provides some empirical evidence for its accuracy. The authors used the scale as a variable to predict automobile liability expenses. If there were no correlation between the Chamber’s score and reality, there should be no correlation between the score and liability expense. Yet the study found a significant association between the Chamber’s score and the two proxies used for automobile liability costs: premiums for automobile liability insurance per vehicle and automobile liability losses and loss adjustment expenses incurred per vehicle. The authors found that if the liability environments in all states were at the level of the Chamber’s top scoring state (Delaware), there would be a total savings of nearly $23 billion.

155. Eisenberg, supra note 148, at 994–95. Indeed, a review of rankings over the years since 2002 shows a high level of intertemporal consistency (Delaware was ranked first every year), though some states show significant variation. See HARRIS INTERACTIVE, supra note 141, at 96.
156. Daniel Kessler, Fault, Settlement, and Negligence Law, 26 RAND J. ECON. 296, 296 (1995). The study concluded that the “letter of the law may be less important in shaping individual’s behavior than scholars have supposed.” Id. at 309.
158. Id. at 21.
159. Id. at 14–18.
160. Id. at 19.
The results of this study give some assurance that the Chamber's measure captures something about the state's tort liability system, even if its measures for individual variables were considered unreliable. Others have expressed confidence in the Chamber's "ability to measure the quality of courts" as well.\footnote{E.g., Daniel Berkowitz & Karen Clay, The Effect of Judicial Independence on Courts: Evidence from the American States, 35 J. LEGAL STUD. 399, 413 (2006).} Perhaps the individual measures are not entirely accurate, but the overall measure may capture some latent feature of the state's judicial system that is either pro-plaintiff or pro-defendant. While this finding may limit the value of the scale for tort reform purposes, it can still be used for assessing the effect of the system on the economy. If the perceptions appeared to have a significant economic effect, independent of the content of the law itself, a state would certainly want to explore ways to change those perceptions.

B. PACIFIC RESEARCH INSTITUTE

A second index of different state tort liability systems was prepared by Pacific Research Institute (PRI).\footnote{McQuillan & Abramyan, supra note 31.} In contrast to the survey approach of the Chamber of Commerce, PRI attempted to measure the actual law of each state on twenty-eight separate measures, not merely perceptions of the law.\footnote{Id. at 3.} These measures include:\footnote{Id. at 24.}

- Existence of a cap on appeal bonds,
- Existence of caps on non-economic damages (excluding medical-malpractice lawsuits),
- Existence of caps on punitive damages (excluding medical-malpractice lawsuits),
- Caps on damage awards in medical-malpractice lawsuits
- Nature of class-action rules,
- Existence of attorney contingency-fee limits (excluding medical-malpractice lawsuits),
- Use of contributory, comparative, or modified-comparative standard for plaintiff's negligence,
- Nature of rules on joint and several liability,
- Nature of rules on early offers of settlement,
• Existence of an “Illinois Brick repealer” statute for antitrust litigation,165  
• Existence of attorney-retention sunshine rules for state litigation,  
• Reforms of collateral source rule, 
• Nature of jury service rules, 
• Existence of attorney-fee limits in medical malpractice cases, 
• Pre-trial screening or arbitration in medical malpractice cases, 
• Asbestos- and silica-liability rules, 
• Construction liability rules, 
• Existence of an FDA or FTC compliance defense, 
• Retailer and manufacturer product liability rules, 
• Exemptions for junk food or obesity claims, 
• Appointment or election of state supreme court justices, 
• Existence of a “harmful” attorney general, 
• Nature of venue rules, 
• Standards for expert witnesses, 
• Conditions for expert witnesses in medical-malpractice litigation, 
• Statute of limitations for medical-malpractice litigation, 
• Size of juries and majority requirements, and 
• Existence of a complex litigation court. 

This index is focused more specifically on torts than the Chamber of Commerce measure, but does include some measures related to statutory enforcement or litigation more broadly.166 The list of topics measured is quite extensive but some are rather narrow (e.g., availability of junk food lawsuits). The correlation among the different scores is quite low, in contrast to the Chamber survey.167

The choice of some variables in the PRI list is questionable. For example, PRI assumes that the existence of a separate court for complex litigation is pro-defendant, but this could be

166. MCQUILLAN & ABRAMYAN, supra note 31, at 24.
167. Id. at 40–45.
PRI also prefers appointment to the election of state supreme court judges, but the effect of this process is by no means certain. Presumably, these factors are based upon the perceptions of which legal variables are significant to business and in many cases the PRI variable was grounded in some research on the relevance of the particular variable to economic consequences.

PRI cumulates its legal scores into what it calls an input ranking of the overall state of a state’s tort law. The twenty-eight separate variables were ranked among the states, and an average ranking was produced for the input index, giving each variable equal weight. This is of course questionable, as the effect of each variable is not the same. The numeric scores were also treated as linear differentials, though this may be inaccurate. In addition, the numeric scaling of each particular variable was necessarily arbitrary, which is compounded by the

168. There is a theory that a specialized business court, characterized by PRI as a complex litigation court, would “attract top-notch judges, with expertise and sensitivity to business issues” or that such a court would “lead to more predictable, consistent and prudent” results. Ember Reichgott Junge, Business Courts: Efficient Justice or Two-Tiered Elitism?, 24 WM. MITCHELL L. REV. 315, 317 (1998). However, this has not been demonstrated by rigorous study, and the effect of such courts is “unproven.” Id. at 318. If these courts were preferable to companies, one might expect that they would diminish reliance on arbitration clauses, but this does not appear to be the case. See Christopher Drahozal, Business Courts and the Future of Litigation, 10 CARDOZO J. CONFLICT RESOL 491, 492 (2009).

169. See, e.g., Frank B. Cross, Thoughts on Goldilocks and Judicial Independence, 64 OHIO ST. L.J. 195, 196 (2003) (studying declarations of unconstitutionality and finding some effect of the merit plan selection system but not other forms of judicial selection); Victor Eugene Flango & Craig R. Ducat, What Difference Does Method of Judicial Selection Make?, 5 JUST. SYS. J. 25, 39 (1979) (finding little variation in judiciaries by selection method). There are various forms of appointment and elections (partisan or nonpartisan) among the states. The simple binary division may be misleading. And the conclusions favoring appointment can also be questioned. For example, merit plan selection methods (a form of appointment) have been linked to more appellate litigation. F. Andrew Hanssen, On the Politics of Judicial Selection: Lawyers and State Campaigns for the Merit Plan, 110 PUB. CHOICE 79, 80 (2002). Elections, conversely, may be used by business groups to turn tort law in a more pro-defendant direction, as occurred in Texas. See Anthony Champagne, Tort Reform and Judicial Selection, 38 LOY. L.A. L. REV. 1483, 1483–84 (2005) (discussing success in reversing pro-plaintiff Texas law).

170. MCQUILLAN & ABRAMYAN, supra note 31, at 23.

171. Id. at 40–45.

172. Id. at 39.

173. The rankings were between 1 and 50, but varied depending on the number of discernible gradations for the measure. Id. If the researchers could divide the states into three categories, they received numeric ratings of 1, 25.5,
cumulation of the numeric scores, but the overall figures may generally reflect the tort system of a state.

C. COMPARING THE SCALES

Both the Chamber of Commerce and PRI studies attempt to measure the characteristics of the states’ laws and the degree to which they favor plaintiffs, and are often taken as evidence of the relative state liability regimes. The Chamber and PRI scales, based respectively on perception and description of legal content, are also readily comparable. The association of states on the Chamber’s overall measure and the PRI’s input score scales is displayed in Figure 1. The metrics differ in that a lower score is better on the PRI scale but worse on the Chamber’s scale. If they correlated as expected, one would see a line slanting downward from the upper-left to the lower-right of the graph.

Figure 1
Comparative Tort Liability Scores

and 50. If they were divided into five categories, the states would be rated at 1, 13.25, 25.5, 37.75, and 50. See id. Of course, there was no attempt to determine if the difference between 1 and 13.25 was equivalent to the difference between 37.75 and 50. See id.

174. Id. at 1; HARRIS INTERACTIVE, supra note 141, at 6.
There is no obvious association between the two metrics. The reasonably large number of data points in the upper-right quadrant of the graph represents states that the Chamber of Commerce considers relatively good on tort law but PRI grades as relatively bad. Illinois, for example, ranks forty-sixth on the PRI scale (fifth-worst state), but ranks fifth-best on the Chamber of Commerce measure. Large disparities also exist for other states. The highest level of agreement is probably for Louisiana, which ties for the worst state on the Chamber measure and is the eighth-worst state according to PRI.

One possible explanation for the lack of association is the simple fact that they do not purport to measure the same thing. The Chamber measures perceptions, while PRI measures legal content. Moreover, they do not even measure the same legal dimensions. A few broad issues, including general legal quality, are measured in the Chamber study, while PRI measures numerous, often quite specific, legal doctrines.

Comparing the ratings for expert evidence between the two scales is informative. PRI measures the standard for admissibility of expert witnesses with a scale including use of the more rigorous Daubert standard. The Chamber measured perceptions of the state’s standards for scientific and technical evidence, which is vague but seems similar to the PRI standard. Figure 2 presents the state scores on the two measures. A true correlation should show a downwards slanting line.

175. See supra note 154 and accompanying text.
176. See supra note 163 and accompanying text.
177. See supra notes 144–47 and accompanying text.
178. See supra note 164 and accompanying text.
180. See supra note 145 and accompanying text.
Both scales purport to measure roughly the same thing. A regression of the two shows no significant association between the measures. Further exploration reveals that the one PRI variable that has the strongest expected statistically significant relationship with the Chamber’s overall measure was the election of state supreme court justices, not any of the specific doctrinal measures. The lack of correlation for the two measures is surely troubling.

Given the lack of association between the two measures of tort law, it may be that measured business perceptions do not reflect the substance of the state’s law. It seems reasonable to assume that if tort law is indeed important to business success the two would be highly correlated. Perhaps some states have done effective public relations work and fooled businesses about the nature of their tort system. Or perhaps one (or both) of the measures is simply inaccurate (such as suggested by Eisenberg’s evaluation of the Chamber of Commerce study). It is also possible that PRI’s measures of actual legal content missed the issues that businesses consider truly important as assessed by the Chamber’s survey of business perceptions. In this research,
I will use both measures to examine economic effects of tort law.181

IV. AN ANALYSIS OF ECONOMIC EFFECTS OF STATE TORT LAW

This Part presents my empirical assessment of the economic effects of tort law in the United States, using the Chamber and PRI measures. Evaluating the economic effect of tort law is difficult. For one thing, which variables most accurately demonstrate the effects of tort law on the economy is far from clear. One must also control for third variables that may prove the true determinant of state economic measures.

One additional problem with state law comparisons involves spillover effects. The laws of a given state will affect practices in other states. A national enterprise must consider the laws of all states in its manufacturing and production decisions. A plaintiff might arise from any state, and the opportunity for plaintiff forum shopping allows litigation to focus on the most pro-plaintiff jurisdiction. While in theory such an enterprise may forego participation in a given state, doing so necessarily involves sacrificing a great deal of business. Thus, differences in state law may not matter so much if, for example, each business must adapt to the content of the strictest state law. While this spillover effect does not entirely undermine interstate comparisons, it mutes their relative effects. State courts may even discriminate against out-of-state defendants.182 Practically speaking, this spillover effect means that any discovered differences are probably understatements of the true economic effects of tort law.

A. INDEPENDENT VARIABLES

The object of this study is to test the effect of tort law, which requires some measure of the state of tort law in a state. There is no one conclusive measure, so I will employ several, discussed below. I also control for various other factors that

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181. In its 2006 report, PRI suggested that the “two rankings are best viewed as complements.” MCQUILLAN & ABRAMYAN, supra note 135, at 53.

182. See, e.g., Eric Helland and Alexander Tabarrok, Exporting Tort Awards, 23 Reg., no. 2, 2000 at 21, 23–26 (finding that states tend to impose higher liability on out-of-state defendants). At least for elected state judiciaries, the “ability to transfer vast amounts of wealth from out-of-state corporations may be the crucial factor driving the tort law crisis.” Zywicki, supra note 45, at 15.
may be correlated with the dependent variables of interest and the tort law variables such as quality of states’ court systems, population, and urbanization. The available data is for one year (2008), so a standard OLS cross-sectional regression method is used in the study. The regression takes the form:

\[ Y = B + B_i I + B_n N + u \]

Where \( Y \) is the dependent variable of interest, \( B \) is the constant, \( I \) is the measure of tort law (Chamber or PRI), \( N \) represents all the additional control variables used in the equation, and \( u \) is a random disturbance term.

1. Tort Variables

The Chamber of Commerce’s overall measure and the PRI input measure are designed to capture the full scope of a state’s tort law and the degree to which it may be pro-plaintiff. They are obvious independent variables for use in this research. However, as discussed above, both scales are imperfect for this test. The Chamber measure is a test only of perceptions and has been questioned for its reliability.183 The PRI measure is of the actual legal rules of the state but it cannot address all the tort rules of the state. Some of the rules comprising the measure may not be the important ones, while other important rules may have been omitted. PRI did not select the measured rules randomly, though, and the chosen rules were those considered to be salient by “legal experts, university professors, and lawyers.”184

While neither the Chamber nor the PRI measures are perfect scales for the effects of tort law, they are the best available and provide reasonable measures. The Chamber’s measure of business perceptions should reflect how business assesses tort law, which influences business decision making. The PRI’s measure of actual tort doctrines is an even more direct measure of the composition of a state’s tort regime.

183. See Eisenberg, supra note 148, at 1001–02.
184. McQuillan & Abramyan, supra note 31, at 2. Accompanied by an “exhaustive search of the academic-journal literature,” as well as state tort-reform actions, PRI recognized that the variables were not exhaustive and suggested variables for some where it could not obtain data. Id. at 11.
2. Control Variables

There are also separate factors, other than tort liability, that must be considered as control variables. Many factors influence state economic welfare and it is a daunting task to isolate those. If these additional variables tend to correlate with the tort variables of interest in this study, they may create a spurious association. In this Section I identify several general control variables that might plausibly skew associations between tort liability and general economic measures.

One variable is the quality of the court system itself. Berkowitz and Clay have found that the states settled by civil law nations had lower quality courts and less independent judiciaries. To control for this possible effect, I create a binary variable for whether the state was civil law or common law in origin.

Another relevant external control variable is urbanization, the percent of a state’s population that lives in cities. Such proximate living is likely to produce more torts and more tort litigation. The greater litigation may have an effect on the content of tort law. One study found that urbanization was strongly correlated with “earlier adoptions of the tort innovations” studied, due to more opportunities to shape the law. Those in urban areas may be “particularly affected by the high costs of the tort system.” In addition, one would expect urbanization to be associated with our economic dependent variables, so it is used as a control variable.

186. See, e.g., Richard A. Posner, Explaining the Variance in the Number of Tort Suits Across U.S. States and Between the United States and England, 26 J. LEGAL STUD. 477, 480 (1997) (noting that suits are “more likely in an urban setting” because the “parties to accidents are more likely to be strangers” and because “lawyers are disproportionately concentrated in urban areas”); Han-Duck Lee et al., How Does Joint and Several Tort Reform Affect the Rate of Tort Filings? Evidence from the State Courts, 61 J. RISK & INS. 295, 303 (1994) (providing additional reasons why urbanization would be “positively correlated with the rate of tort filings”). There is a clear positive association of urbanization and the frequency of medical malpractice claims. Patricia Danzon, The Frequency and Severity of Medical Malpractice Claims, 27 J.L. & ECON. 115, 143 (1984).
Another control variable to consider is the role of other branches of state government. As noted above, tort law may have a smaller role in Europe simply because its function is assumed by legislative or executive branches. Consequently, what appears to be a more pro-defendant approach to tort law may be the result of a larger legislative or executive role in protecting accident victims. In the United States, however, pro-defendant tort law appears to correlate with other governmental economic freedom protections. If so, this association could distort analysis—the apparent economic effects of tort law might truly be those of other economic freedoms. To test this effect, I use a measure of government size for each state.

The state’s ideology may also be relevant to the results. One might expect that more liberal ideological states would have a more pro-plaintiff set of tort law rules and they may well have juries who are more sympathetic to plaintiffs. Yet such states would also be expected to have more anti-business regulatory policies as well. Suppose the research found that more pro-plaintiff tort law was associated with less economic growth. If pro-plaintiff states also had more business regulation, that effect might actually be due to the greater regulation, not the tort laws. Hence, a control for ideology is necessary. I use the percent of popular vote in each state won by President Obama in the most recent presidential election.

Yet another important variable is the state’s level of human capital. More educated populations are conducive to economic growth. This measure has been widely used in international research, where educational investments have been a major determinant of future economic growth. One study found that the growth in years of schooling in the United States explained about 25% of the nation’s growth of per capita income for much of the twentieth century. The “evidence is now quite strong of a close link between investments in human capi-

189. MCQUILLAN & ABRAMYAN, supra note 135, at 56.
190. The data for this measure comes from AMELA KARABEGOVIĆ & FRED MCMAHON, THE FRASER INSTITUTE, ECONOMIC FREEDOM OF NORTH AMERICA: 2008 ANNUAL REPORT (US EDITION) 64 tbl.3.5, 66 tbl.3.6 (2008).
Research has confirmed this effect on a state-by-state basis. There are various ways to assess relative human capital, but for this study, I use a measure of the percentage of a state’s population that has attained a Bachelor’s or more advanced degree.

Another control variable involves a state’s relative economic reliance on manufacturing. Industrial composition may influence growth rates, and different states are more or less dependent on manufacturing, as opposed to services. Similarly, undue reliance on any sector may affect growth rates as economies change.

A final variable of concern is the state’s social capital, a sociological concept that involves the interconnectedness of individual’s in a society. The concept obtained some notoriety with the publication of Richard Putnam’s Bowling Alone, which stressed the significance of social capital for a successful society and lamented its decline in this nation. There is also a “widespread consensus” that social capital can “promote economic progress.” The consensus is backed by international...
empirical research.\textsuperscript{202} Each of the following regressions will employ these control variables. While many other variables could affect state economic growth, the number of cases to be studied is necessarily limited to fifty, so parsimony in independent variables is required.

B. DEPENDENT VARIABLES

The next question involves the economic measures that should be used to test the effects of tort law. While the ultimate concern is overall economic welfare, such a broad measure is more subject to confounding outside variables, so I also analyze other categories. Ideally, the overall economic results should be bolstered by more specific economic measures, which would suggest the pathway through which the overall results occur.

I begin by examining the costs of several types of insurance against tort liability, which should identify the true costs of a tort system. I then consider the associations of tort law on overall economic success of the states and on particular economic variables (such as productivity and foreign direct investment). Finally, I evaluate effects on measures of entrepreneurship, where interstate tort differences should reveal their most profound effects.

1. Insurance Costs

Tort liability supposedly hurts the economy through unwarranted liability awards, forcing people and companies to bear undue costs, which cannot be put to more efficient ends, and perhaps to forego introducing valuable new products. Hence, if the expected harm is occurring, this should appear in the form of higher liability costs. There is no comprehensive measure of cumulative liability awards in a state and, even if there were, much of the cost would be found in private settlements.\textsuperscript{203} While there is no good measure for actual liability, a good proxy could be found in insurance costs. Studies have


\textsuperscript{203} See Huber & Litan, supra note 3, at 1 (observing that “most cases are settled, and the settlements, which are much more difficult to monitor and aggregate than verdicts, are far more numerous and consequential overall”).
found that certain tort reform measures decrease insurers’ liability losses.\textsuperscript{204}

The PRI report assessing the state of tort law also contains ecological data on insurance rates. The data comes from A.M. Best Company and purports to be “the gold standard because they are subject to audit and are reviewed by state insurance regulatory agencies.”\textsuperscript{205} Data is available on nine lines of insurance, plus categories of self-insurance. Losses were divided by gross state product to permit comparisons per capita. Because the measure is insurance losses, it includes payments in settlements as well as court awards.

Comparing insurance costs is not a perfect test for liability effects. In addition to the control variables discussed above, many other variables influence insurance costs. Each state has its own system of insurance regulation (and its own set of judicial decisions, typically contract law based) on the obligations of insurers. As a result, policy language may differ by state and this could have an effect on losses, separate from the tort liability system. There are also other measures for the insurance costs in states, including premium rates. These other measures, however, are more likely to be distorted by different state regulatory systems (which in some cases set premiums). Moreover, they may be affected by unrelated factors that influence insurance company profits.\textsuperscript{206}

Liability losses, though imperfect, may be the best available measure for tort costs. To the extent that the loss data is skewed, this fact is likely to obscure a statistically significant relationship and produce a false negative.\textsuperscript{207} Consequently, a statistically significant finding would be strong evidence. However, as with any statistical study, failing to reject a null hypothesis of no effect is not actually strong evidence of no causal effect.


\textsuperscript{205} McQuillan & Abramyan, supra note 31, at 13.

\textsuperscript{206} See, e.g., Chimerine & Eisenbrey, supra note 71, at 2 (contending that insurance premiums are affected by other variables such as investment success in the market, interest rates, and rising costs, such as for medical care).

PRI categorizes data on insurance costs by different segments, including automobile, farm owners, commercial general liability (CGL), other, homeowners, medical malpractice, product liability, personal and commercial self-insurance, as well as an overall insurance cost score. For this research, I will use as dependent variables the overall measure, the CGL insurance measure (a form of coverage that broadly includes torts of many types), and the product liability insurance costs. The effect of tort law on business should be especially apparent in the latter two categories.

I use a two-tailed test that accounts for the possibility that stricter tort law rules would be economically beneficial. Remember that a lower score is better on the PRI scale but worse on the Chamber’s scale. This means that, if tort law produces higher insurance costs, one would expect a negative sign for the Chamber measure but a positive sign for the PRI measure. The following three tables set out the results for my three dependent variable measures of insurance costs, beginning with the overall measure.

The above models are based on a linear relationship between the independent and the dependent variables. This is a plausible assumption for this model, more liability associated with more pro-plaintiff legal doctrine should produce higher insurance costs, even if those costs are economically efficient ones, which produce societal gain by deterring greater harm.

Table 1 displays the results for both the overall scale of the Chamber and the cumulative input measure of the PRI scale. The n for all the tables is 50, the number of states. The Chamber measure is higher for more pro-plaintiff law; the PRI number is lower for more pro-plaintiff law. If results are as hypothesized, the Chamber measure should have a negative sign, and the PRI’s a positive sign. Theory would also suggest that greater urbanization, government size, and liberal ideology should be associated with higher insurance costs. The table displays coefficients, with t-terms in parentheses and statistically significant associations in bold.

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208. I expect urbanization to produce more torts, causing more insurance liability. Greater government size also would be expected to increase insurance liability (though this might be counteracted by reduced tort liability). I presume that more liberal states are more likely to impose costs on business and thus show higher insurance costs.
Table 1
Effect of Tort Law on Overall Insurance Costs

<table>
<thead>
<tr>
<th></th>
<th>Chamber</th>
<th>PRI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chamber of Commerce</td>
<td>-9.107053</td>
<td>-0.2972</td>
</tr>
<tr>
<td>PRI</td>
<td></td>
<td>-1.5971</td>
</tr>
<tr>
<td>Civil Law</td>
<td>-1.0496</td>
<td>-1.5971</td>
</tr>
<tr>
<td>Human Capital</td>
<td>0.04239</td>
<td>-0.2949</td>
</tr>
<tr>
<td>Social Capital</td>
<td>1.7056</td>
<td>0.6354</td>
</tr>
<tr>
<td>Urbanization</td>
<td>0.1633</td>
<td>0.1852</td>
</tr>
<tr>
<td>Government Size</td>
<td>0.2914</td>
<td>-2.1926</td>
</tr>
<tr>
<td>Ideology</td>
<td>0.0424</td>
<td>0.1049</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>-0.3041</td>
<td>-0.3287</td>
</tr>
<tr>
<td>Constant</td>
<td><strong>44.0811</strong></td>
<td>36.7595</td>
</tr>
<tr>
<td>R-Squared</td>
<td>0.3887</td>
<td>0.0656</td>
</tr>
</tbody>
</table>

The results suggest that the Chamber of Commerce measure may correctly capture the state of tort law as it has a highly statistically significant association with overall insurance costs. The PRI results do not approach statistical significance, which is somewhat surprising because the insurance cost measure was PRI's own. The control variables are insignificant in all tests. Only the Chamber of Commerce measure appeared to be driving overall insurance costs. This finding must be viewed with some caution, though, because the Chamber provides a perceptual measure. Rather than the state of tort law driving insurance costs, it may be that the relative state insurance costs drove the perceptions of those the Chamber surveyed.

The overall insurance costs are a broad measure, and a test of the effect on CGL insurance costs, which are more closely tied to tort law, may be a better test. The following table reports the same regressions for this dependent variable.
None of our measures were statistically significant, though the Chamber of Commerce measure neared significance in its expected association with higher insurance costs (p = 0.088). The results provide only mild confirmation of the Chamber’s measure of tort liability law for this insurance cost. I conclude this Section with the same analysis, but for product liability insurance costs, which also might be associated with state liability standards.

Table 3
Effect of Tort Law on Product Liability Insurance Costs

<table>
<thead>
<tr>
<th>Chamber of Commerce</th>
<th>Chamber</th>
<th>6.3961</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PRI</td>
<td>0.5417</td>
</tr>
<tr>
<td>Civil Law</td>
<td>4.8687</td>
<td>5.7629</td>
</tr>
<tr>
<td>Social Capital</td>
<td>5.6963</td>
<td>6.2336</td>
</tr>
<tr>
<td>Human Capital</td>
<td>-0.7771</td>
<td>-0.6242</td>
</tr>
<tr>
<td>Urbanization</td>
<td>0.3729</td>
<td>0.3702</td>
</tr>
<tr>
<td>Government Size</td>
<td>-0.3114</td>
<td>1.6391</td>
</tr>
<tr>
<td>Ideology</td>
<td>-0.1121</td>
<td>-0.2541</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>-0.9136</td>
<td>-0.8619</td>
</tr>
<tr>
<td>Constant</td>
<td>15.3693</td>
<td>8.8852</td>
</tr>
<tr>
<td>R-Squared</td>
<td>0.2292</td>
<td>0.2311</td>
</tr>
</tbody>
</table>
There is no association with either of our tort law variables (or any other variable) and the direction of the correlation with the Chamber score is the opposite of that theorized. The only variable that approximates statistical significance is reliance on manufacturing, and it is negative (perhaps reflecting state protection of local industries). The lack of associations for product liability insurance may seem surprising, given the prominence with which product liability claims are commonly associated with criticisms of tort law. Product liability cases, though, are but a tiny fraction of overall tort litigation. A measure of overall tort law may not be a sound proxy for product liability law.

In general, it appears that more pro-defendant tort law as measured by the Chamber metric may be associated with lower costs for at least some forms of insurance, but this is not true for the PRI measure. Even the Chamber measure is not significantly associated with the types of insurance costs typically associated with tort litigation.

While these insurance costs are not our true dependent variable of concern, they are an important intervening variable. The alleged economic harm due to tort law is typically an assessment of its costs to business, which would show up in the insurance payment variable. If a measure of tort law is not associated with higher insurance costs, one would be skeptical that it is the true cause of any negative economic effects that might be identified. This is not necessarily the case, though. Suppose fear of liability suppresses business innovation and creation, which hurts the economy. The absence of innovation, in this hypothesis, could reduce the insurance costs associated with pro-plaintiff tort law but would still harm the economy.

However, higher insurance costs are not necessarily an economic negative. As discussed above, holding responsible parties liable can be an economically efficient policy, by compelling them to internalize the external costs they impose on others. While higher insurance expenditures would raise the cost of business, they would encourage better business practices, which cause less harm to others. It is conceivable that the greater deterrence could have the effect of reducing insurance costs, but this presumably would be more than offset by the lesser liability imposed in a more pro-defendant regime.209

209. Thus, if one imagines a very pro-defendant regime there could be an enormity of externalized harms, but very little in insurance-liability costs, because defendants would rarely be called upon to assume those costs.
A final caveat to the insurance cost measure involves the different composition of business among the states, which may have some randomness in its operation. Manufacturing is a control for this, but an imperfect one. Suppose that mining for coal is inherently risky and accompanied by higher insurance costs. Some states have coal deposits, while others do not. Of those states with coal deposits, such mining will surely be a greater or lesser proportion of their economies. This could skew the association.\textsuperscript{210}

Perhaps the greatest relevance of these findings goes to the validity of the Chamber and PRI measures. The PRI measure does not have the expected correlation. The Chamber measure does especially well, with very strong associations with overall and CGL liability costs, although not necessarily to the economy as a whole. The remainder of the Section evaluates the effect of the different systems on economic variables of concern.

2. Overall Economy

Although our central concern is the state of tort law on the overall economy, broad economic measures may provide the weakest test of the hypothesis of the effects of tort law. Countless factors affect the quality of a state’s economy, and they cannot all be controlled. Even if tort law were having an effect on the magnitude of a state’s economy, it may be impossible to isolate this effect in an empirical study, given all the external confounding factors. The failure to find a tort law effect would only mean that torts are not the predominant factor in affecting state economies, not that tort law has no effect.

This difficulty in finding a true association may be evidenced by international research on economies. A great deal of economic research has been devoted to identifying the factors associated with growth among nations, such as free trade, sound government institutions, and many other factors. While studies have found associations between such independent variables and economic growth, the results are not consistently statistically significant across studies using different methodologies or different sets of data.\textsuperscript{211} The difficulty in finding robust

\textsuperscript{210} Ideally, one would control for this effect, but given the limited \( n \) of the study (fifty states), it is impossible to introduce all the independent variables necessary to address the industry composition effect.

associations does not mean that factors such as government institutions or free trade do not influence economic growth (the null hypothesis), but simply means that various other random factors obscure the association. This problem should be smaller for studies of American states, which have many fewer differences than found among different countries, but the difficulty remains. The easy and common migration among states also means that historic differences should not seriously bias the research. However, the many factors that may influence economic conditions among the states may make it difficult to find an effect from tort law. To combat this, I employ numerous economic measures in my search for such an effect.

One would not necessarily expect the relationship of tort law and the economy to follow a linear relationship. Assume that there is some optimal tort regime, for economic efficiency purposes. If the optimal tort regime were more extreme than that of any state regime (whether pro-plaintiff or pro-defendant), the relationship between tort reform and economic performance should be linear. However, if the optimal state of the law fell somewhere within the varying state laws, one would expect the relationship to be quadratic; states with laws more pro-defendant than the optimal law would suffer economically, as would states with more pro-plaintiff laws. This prospect will be addressed below.

The first variable of interest is per capita state GDP. This measures the association between state tort liability and state economic wellbeing. Use of this test contains one major flaw. The tort variables are available only for 2008, while the state’s economy is the result of years of history. One might expect that the current court liability regimes may resemble the state’s his-

(ending that results are “very sensitive to minor errors in measurement and turn out to differ substantially depending on the income estimates being used”). An earlier published study found isolated robust effects on economic growth for the share of investment in GDP and international trade, though not for other variables. Ross Levine & David Renelt, A Sensitivity Analysis of Cross-Country Growth Regressions, 82 AM. ECON. REV. 942, 959 (1992). Researchers have “found it easy enough to arrive at significant results” simply because there are so many variables that can be manipulated in this research. Jessica Cohen & William Easterly, Introduction: Thinking Big Versus Thinking Small, in WHAT WORKS IN DEVELOPMENT? THINKING BIG AND THINKING SMALL 1, 3 (Jessica Cohen & William Easterly eds., 2009).

212. See W. Mark Crain & Katherine J. Lee, Economic Growth Regressions for the American States: A Sensitivity Analysis, 37 ECON. INQUIRY 242, 242 (1999) (observing that “while states differ in relevant dimensions, they are not so different as to make omitted variables an overwhelming source of error”).
toric practice, but this need not be the case. The results should therefore be interpreted with this caveat in mind.

Table 4 presents the results of our model for per capita state GDP, using the same regression equation as in the earlier analyses. If pro-plaintiff tort law were harming per capita GDP, we would see a negative association with the PRI score and a positive association with the Chamber score.

Table 4
Effect of Tort Law on Per Capita GDP

<table>
<thead>
<tr>
<th>Chamber of Commerce</th>
<th>PRI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chamber of Commerce</td>
<td>1020.034</td>
</tr>
<tr>
<td>PRI</td>
<td>230.1302</td>
</tr>
<tr>
<td>Civil Law</td>
<td>-19.0764</td>
</tr>
<tr>
<td>Social Capital</td>
<td>-2720.231</td>
</tr>
<tr>
<td>Human Capital</td>
<td>309.4836</td>
</tr>
<tr>
<td>Urbanization</td>
<td>-105.7771</td>
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<tr>
<td>Government Size</td>
<td>4520.696</td>
</tr>
<tr>
<td>Ideology</td>
<td>252.7209</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>-46.2566</td>
</tr>
<tr>
<td>Constant</td>
<td>-16.405.62</td>
</tr>
<tr>
<td>R-Squared</td>
<td>0.8218</td>
</tr>
</tbody>
</table>

Both measures of tort liability showed no statistical significance, and the PRI measure indicated that more pro-plaintiff law is associated with higher state per capita GDP. Not much can be concluded from this, though, because of the prospect of reverse causality. The strongest associations were with larger government and more Obama support with higher state GDP. Yet it seems more likely that richer states were more likely to vote for President Obama than that voting for President Obama in 2008 caused the state to be richer in 2008. The same is true for government size. The government size correlation may be that larger government is a superior good; one that makes up a larger portion of consumption as income rises. As people grow richer, they may be willing to pay more in taxes for more government. This also might be true for the PRI measure.

As states grow richer, they may accept more pro-plaintiff tort law. Yet the direction of the measure for the Chamber score was opposite (richer states had relatively more pro-defendant tort law). The social capital estimates are surprising but may simply suggest that poorer states are more likely to have this measure, rather than that social capital hurts the economy.

The effect of tort law might be more likely to appear in per capita GDP growth rates. The test of tort law on state per capita growth rates requires an additional independent control variable of the pre-existing state per capita GDP. Economists have demonstrated a process called convergence, under which poorer jurisdictions will grow faster than richer ones, as they can take advantage of technological advances developed by richer states and will often have lower costs for items such as labor. This is often called the Solow growth model and has been subjected to extensive review.214 The model has been applied to individual states in the United States and is applicable.215 Indeed, because of the high level of free trade among American states, convergence should be stronger domestically than internationally. Hence, prior state GDP is an essential control variable.

The next analysis considers the rate of per capita state GDP growth for the prior ten years (1998–2008). Ideally, one would test state tort law systems against future economic growth, but the data is not available for this; the tort system measures are only very recent. Considering the prior ten years should be valid if the tort law system did not change substantially during this time. While states are constantly adjusting their law, dramatic changes are probably not common. For the study, I employ the same model as above, with an added variable for per capita state GDP at the beginning of the period.

Table 5

Effect of Tort Law on Per Capita Income Growth

<table>
<thead>
<tr>
<th></th>
<th>Chamber</th>
<th>PRI</th>
</tr>
</thead>
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<tr>
<td>Chamber of Commerce</td>
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</tr>
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<td>PRI</td>
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<td>Civil Law</td>
<td>0.5680</td>
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<td>Social Capital</td>
<td>0.4307</td>
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<td>Human Capital</td>
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<td>State GDP</td>
<td>-0.0001</td>
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<td>Urbanization</td>
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<td>Government Size</td>
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</tr>
<tr>
<td>Ideology</td>
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<td>-0.0838</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>-0.4018</td>
<td>-0.3864</td>
</tr>
<tr>
<td>Constant</td>
<td>26.0584</td>
<td>-11.5629</td>
</tr>
<tr>
<td>R-Squared</td>
<td>0.4444</td>
<td>0.5519</td>
</tr>
</tbody>
</table>

There is a very strong association between more pro-defendant law on the PRI scale and lower per capita growth (higher PRI scores are pro-plaintiff). The PRI results provide evidence that tort law regimes influence the economy, but in the opposite direction suggested by tort reformers. This might suggest that more plaintiff-friendly tort law helps the economy. While counterintuitive, it is somewhat plausible, given the economic benefits associated with tort law, as discussed above.

The following figure illustrates the association of the two variables, with confidence intervals on a linear fitted model.
The effect of tort law, as measured by PRI, is quite dramatic. The expected growth rate for the decade for a state with the most pro-defendant law was only 5%, while the most pro-plaintiff regime was associated with an expected growth rate of nearly 20%.

This strong and sizable association appears to be powerful evidence for the positive effect of tort law, but it must be viewed with caution. Such associations may be epiphenomenal and due to some third factor not considered in the regression analysis. Although I employed the most prominent control variables, some other factor may have driven the results for this particular time period. The remainder of the analyses will search for the pathways of the effect of tort law, such as productivity, investment, and entrepreneurship.

V. PATHWAYS FOR TORT LAW TO AFFECT THE GENERAL ECONOMY

A. PRODUCTIVITY

One possible measure that could identify a tort liability regime effect is productivity. Productivity is essentially a test of
the efficiency of business operations. Thus, a Federal Reserve Bank analysis noted that when “gauging the health of the regional economy, arguably the two most important series to track are employment and output,” and “combined they form a measure of productivity that in the long run ultimately drives living standards.” Productivity is a commonly used proxy for measuring the effects of government regulations on the economy. Lower productivity means an inability to compete in the market. Thus, this represents a good measure of a state’s economic health.

Tort liability could hamper productivity in various ways. The payouts required in such cases could reduce investment that would benefit productivity. Liability might reduce “the rate of both new innovations and the implementation of existing innovations,” which could hamper productivity growth. Some research has shown that tort reform improved state productivity. In asbestos litigation, for example, statutorily avoiding the “vagaries of the tort system would enable capital markets to accurately assess the costs to individual businesses and insurers, which could reduce the cost of capital for these business and insurers, leading to increased productivity and investment.” It thus seems unlikely that stricter tort liability would increase productivity. There is some evidence, however, that tort law may increase innovation. Businesses are also plaintiffs, as well as defendants, so pro-plaintiff tort law might benefit them.

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219. See id. at 133.

220. Campbell et al., supra note 119.

221. See id. at 109.


223. See Barton, supra note 93, at 301.
The EPI study found no effect over time in the United States between tort costs and productivity growth, but it included no control variables, and many other factors could affect productivity.\textsuperscript{224} In addition, the productivity growth in this country could have been a result of companies shifting operations to more pro-defendant jurisdictions.

My next analysis compares relative state manufacturing productivity with their tort liability regimes, as measured by the Chamber and PRI. Productivity is measured as manufacturing value added per production hour worked, adjusted by industrial sector.\textsuperscript{225}

### Table 6
Effect of Tort Law on Manufacturing Productivity

<table>
<thead>
<tr>
<th>Chamber of Commerce</th>
<th>Chamber</th>
<th>PRI</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.5669</td>
<td></td>
<td>0.7418</td>
</tr>
<tr>
<td>PRI</td>
<td>0.4547</td>
<td>1.677</td>
</tr>
<tr>
<td>Civil Law</td>
<td>-1.5379</td>
<td>0.8363</td>
</tr>
<tr>
<td>Social Capital</td>
<td>-0.5651</td>
<td>-0.3582</td>
</tr>
<tr>
<td>Human Capital</td>
<td>0.3470</td>
<td>0.3412</td>
</tr>
<tr>
<td>Urbanization</td>
<td>-0.8076</td>
<td>1.8349</td>
</tr>
<tr>
<td>Government Size</td>
<td>0.4753</td>
<td>0.2815</td>
</tr>
<tr>
<td>Ideology</td>
<td>0.3831</td>
<td>0.4531</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>33.5530</td>
<td>24.2429</td>
</tr>
<tr>
<td>Constant</td>
<td>0.5977</td>
<td>0.6051</td>
</tr>
<tr>
<td>R-Squared</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Urbanization is apparently the primary determinant of manufacturing productivity, though higher Chamber scores were associated with higher productivity.

While the PRI score was not statistically significant, it neared this level (p, 0.10). This provided evidence that pro-plaintiff tort law was associated with higher manufacturing productivity with a significant coefficient, given the scale of this measure. Although not statistically significant, the effect of the Chamber measure was material (one unit higher Chamber


score represented about a five percent increase in manufacturing productivity).

B. FOREIGN DIRECT INVESTMENT

The next analysis involves foreign direct investment in the states. Various studies have suggested the value of foreign direct investment to international economic growth. More investment is economically valuable, and foreign investment is an outside inflow of money that does not require additional domestic savings (and hence reduced consumption). Economic evidence testifies to the importance of foreign investment for the growth of American states as well. One study found that foreign capital accounted for 3.7% of state output growth between 1995 and 1999 and over 16.7% of state manufacturing output growth.

A greater risk of tort liability could deter foreign investment. The United States Department of Commerce has suggested that international investors are concerned with the “comparatively high legal cost of doing business in the U.S. market” and the “unpredictable and unfamiliar nature of liability in the United States.” Surveys similarly suggest that investors heavily weigh the litigation environment in deciding where to locate. However, it is not necessarily the case that more pro-defendant tort law is more predictable or desirable. Perhaps foreign investors find pro-plaintiff law more predictable, and it may have attendant economic benefits.

The next regression focuses on the relative amount of foreign direct investment in the states. The theory is that foreign investors are more likely to do business in a state with a more favorable tort climate. Indeed, even if tort law were eco-


228. Id. at 263–65.

229. U.S. DEPT OF COMMERCE, supra note 100, at 5.

230. Id. at 7.

231. The measure for this variable is the percentage of each state's workforce employed by foreign companies. For the source of data for this variable, see ATKINSON & ANDÉS, supra note 225.
nomically efficient in a given state, a foreign company might prefer to operate in a state with a less restrictive, inefficient tort law (so long as it was more likely to be a defendant than a plaintiff). This test may therefore not be a reliable guide to the most efficient tort law, but it is a reasonable place to search for evidence of some economic effect from the state of such law.

I adopt the same method as for the preceding studies, and the results are displayed in the following table.

<table>
<thead>
<tr>
<th></th>
<th>Chamber</th>
<th>PRI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chamber of Commerce</td>
<td>0.7374</td>
<td>-0.0095</td>
</tr>
<tr>
<td>PRI</td>
<td>-0.4651</td>
<td>-0.4741</td>
</tr>
<tr>
<td>Civil Law</td>
<td>-0.9740</td>
<td>-0.8331</td>
</tr>
<tr>
<td>Social Capital</td>
<td>0.1043</td>
<td>0.1128</td>
</tr>
<tr>
<td>Human Capital</td>
<td>0.1705</td>
<td>0.2613</td>
</tr>
<tr>
<td>Urbanization</td>
<td>-0.0143</td>
<td>-0.0149</td>
</tr>
<tr>
<td>Government Size</td>
<td>0.0325</td>
<td>0.0321</td>
</tr>
<tr>
<td>Ideology</td>
<td>0.0759</td>
<td>0.0782</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>-5.1449</td>
<td>-3.1387</td>
</tr>
<tr>
<td>Constant</td>
<td>0.6162</td>
<td>0.5889</td>
</tr>
<tr>
<td>R-Squared</td>
<td>0.6162</td>
<td>0.5889</td>
</tr>
</tbody>
</table>

There is no evidence for an effect of state tort law on foreign direct investments. The Chamber and PRI scores are in the direction of foreign investors preferring pro-defendant state law but are not statistically significant, nor are they substantively material.

The measures of manufacturing productivity and foreign direct investment provide no clear evidence for the effect of tort law. There is some suggestion of a negative effect from the Chamber measure, though it is weak. The PRI measure actually suggests that pro-plaintiff state tort law could benefit its economy.

C. ENTREPRENEURSHIP

This Section considers the effect of state tort legal regimes on measures of state entrepreneurship. This may provide a more refined measure for the effect, as entrepreneurs may be especially susceptible to tort liability risk. Examination of small business may well be where the effects of state tort litiga-
tion are most likely to be found. A study conducted by National Economic Research Associates for the Chamber of Commerce has found that small businesses are especially vulnerable to litigation risk. The small business share of commercial tort liability costs was substantially in excess of its share of business revenues. The liability cost per $1000 revenues for businesses with revenue of less than $5 million could be twenty times greater than that for businesses with over $50 million in revenue.

Focusing on entrepreneurship could also capture the claimed anti-innovative effect of tort law in America. Through classical Schumpeterian creative destruction, entrepreneurship is the source of much innovation. Greater entrepreneurship is also associated with more innovation, which in turn is associated with higher economic growth. Studying effects of tort law on entrepreneurship thus may capture the innovation effect as well as economic growth effects of the liability system in a state. If pro-plaintiff tort law stimulates innovation, this might appear in the entrepreneurial measures.

Entrepreneurship also provides a better metric for isolating the differential effects of state tort liability laws. Large companies operate throughout the entire nation, and their practices may well be driven, or at least influenced, by the nation’s most restrictive tort regime. Certainly, large states with many more potential plaintiffs will have a disproportionate effect on interstate businesses’ calculations of whether to produce

233. Id. at 6.
234. Id. at 10.
235. See Barton, supra note 93, at 301–02 (contending that entrepreneurial activity receives the innovation benefits of tort liability).
236. See, e.g., Peter F. Drucker, INNOVATION AND ENTREPRENEURSHIP viii (1985) (referring to entrepreneurship as “the carrier of innovation”).
a product or how to manufacture it. Small entrepreneurs, by contrast, have less interstate exposure and should be more influenced by the tort law of the state in which they operate. Consequently, entrepreneurship may offer the best test of the economic effects of a state’s tort liability system.  

Entrepreneurship theoretically could be measured in various ways. One could consider the simple number of new enterprises registered by a state, but this will be distorted by other state law variables. For example, many entities choose to incorporate in Delaware, but this is presumably based upon the state’s substantive corporate law or its relative judicial quality. For my tests, I use data from the Kauffman Foundation, which has produced detailed state comparisons for several entrepreneurship measures. From this source, I consider the variables for initial public offerings (IPOs) as a share of worker earnings, total entrepreneurial activity (adjusted number of new businesses), and venture capital invested as a share of worker earnings. The first is a measure of highly successful entrepreneurship, the second a measure of overall entrepreneurship, and the third is an intermediate market measure of outside investors’ assessment of the climate for entrepreneurial success.

I first measure associations with intrastate IPOs. A very successful entrepreneurial business will wish to expand through the sale of shares to the public, which requires an IPO. To the degree that tort law influences a small business’s prospects for growth, this measure might capture its effects.

This is not a perfect measure, as it is distorted by the interests of entrepreneurs, which may not align with those of society as a whole. If entrepreneurs are more likely to be defendants than plaintiffs, they may even prefer an inefficiently pro-defendant state of tort law. Entrepreneurship is very important to economic growth, though, so it provides a good proxy for this important concern.

A TKINSON & ANDERSON, supra note 225.

For a more detailed description of these measures, see id. at 32–33, 50.
From these results, there appears to be no association between state tort liability regimes and the frequency of initial public offerings. The PRI rating is in the expected direction but nowhere near statistical significance. The Chamber rating is in the opposite direction (pro-defendant law associated with fewer IPOs) but not statistically significant.

The next assessment involves the Kauffman Foundation’s evaluation of the total entrepreneurial activity in a state. This uses the same model as above, with reports in the following table.
There is no identifiable association between entrepreneurial activity and either of our measures of tort law. The PRI test is closer to suggesting an adverse effect of tort law ($p = 0.23$), but still well away from statistical significance.

For yet another test of tort law's effect, I consider venture capital investing. Venture capitalists might well be more informed of and attuned to state tort law that affects the success of those starting up entrepreneurial ventures. The following table reports the results of this analysis.

**Table 10**
**Effect of Tort Law on Venture Capital**

<table>
<thead>
<tr>
<th></th>
<th>Chamber</th>
<th>PRI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chamber of Commerce</td>
<td>-0.3277</td>
<td>-0.0015</td>
</tr>
<tr>
<td>PRI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Civil Law</td>
<td>0.0280</td>
<td>0.0231</td>
</tr>
<tr>
<td>Social Capital</td>
<td>0.0671</td>
<td>0.0108</td>
</tr>
<tr>
<td>Human Capital</td>
<td><strong>0.0318</strong></td>
<td>0.0273</td>
</tr>
<tr>
<td>Urbanization</td>
<td>0.0055</td>
<td>0.0058</td>
</tr>
<tr>
<td>Government Size</td>
<td>0.0020</td>
<td>-0.0491</td>
</tr>
<tr>
<td>Ideology</td>
<td>-0.0001</td>
<td>0.0012</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>0.0001</td>
<td>-0.0012</td>
</tr>
<tr>
<td>Constant</td>
<td>0.6208</td>
<td>-0.6098</td>
</tr>
<tr>
<td>R-Squared</td>
<td>0.4456</td>
<td>0.3892</td>
</tr>
</tbody>
</table>

The PRI estimate is not close to statistical significance. The Chamber measure is actually near statistical significance ($p = 0.09$), but in the direction of more pro-plaintiff law being associated with more venture capital investment. None of the other variables adds much to the assessment, though human capital is associated with more such investment in the model using the Chamber scores. Although there was reason to believe that entrepreneurs could be particularly sensitive to the state of local tort law, the analyses found little hint of such an effect.

**IMPLICATIONS AND CONCLUSIONS**

Contrary to conventional wisdom, the evidence shows no negative economic effects from more pro-plaintiff tort law. While the Chamber measure showed no material association with the economic variables (although it was somewhat correlated with higher insurance costs), there is a surprising associ-
ation with the PRI variable measuring actual tort doctrines. More pro-plaintiff law is associated with higher economic growth. I ran separate regressions with individual doctrinal components of the measure, and they showed no such association but the cumulative score is quite dramatic. Perhaps state law is too pro-defendant.

As discussed above, it is theoretically plausible that more pro-plaintiff tort law could be economically beneficial. If so, one would expect more profound effects to be found where the law was most pro-defendant. This can be detected through a technique known as quantile regression.241 I tested this at three levels, the 25th percentile (more pro-defendant), the 50th percentile (median) and the 75th percentile (more pro-plaintiff), with the results reported in Table 11.

Table 11  
Quantile Regression of PRI Scale and Economic Growth

<table>
<thead>
<tr>
<th>Percentile</th>
<th>Coefficient</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>25th percentile</td>
<td>0.9128</td>
<td>0.0003</td>
</tr>
<tr>
<td>50th percentile</td>
<td>0.7263</td>
<td>0.0470</td>
</tr>
<tr>
<td>75th percentile</td>
<td>0.6778</td>
<td>0.1470</td>
</tr>
</tbody>
</table>

The results provide some support for the conclusion that pro-plaintiff law benefits the economy. At the level of states with more pro-defendant law, the results are highly significant, but for states with more pro-plaintiff law, statistical significance disappears. Moreover, the size of the coefficient steadily decreases as law becomes more pro-plaintiff. Even at the 75th percentile, though, there is still a positive association.

The analyses provide inconclusive findings on the effects of tort law on the economy. The findings on the association of PRI scores with state GDP growth are strong and significant, but there is reason to doubt them. The PRI scores did not associate with the output category of insurance costs, which would likely be the route through which tort law hampered economic growth.

However, it is possible that the positive economic effects of tort law might not appear as higher insurance costs if the anticipation of such higher insurance costs caused business to alter

241. For a discussion of quantile regression, see generally ROGER KOENKER, QUANTILE REGRESSION (2005).
their behavior to avoid such higher insurance costs. As with the international growth evidence, many significant associations will prove spurious and not robust to different time periods or control variables. Moreover, given the nature of statistical significance, some associations will appear by random chance variation rather than a true association.

There are also other possible problems with the PRI association. The correlation was between the state of tort law and growth for the prior ten years, which relies on a premise that tort law was stable over this time, which is not established. As with any correlation, there is a possible directionality problem—it may be that economic growth produces more pro-plaintiff tort law regimes, rather than the hypothesized effect. Perhaps economic growth makes judges more complacent and causes them to create more pro-plaintiff tort law doctrines.

It may be meaningful that the Chamber of Commerce scores showed no significant association with the economic variables, except for manufacturing productivity, for which more pro-plaintiff law was economically better. As the Chamber notes, business decisions are presumably grounded in perceptions of businesspersons. The perceptions measured by the Chamber do not track either the actual law measured by PRI or the hypothesized economic effects. The lack of association between the Chamber’s perception measure and the PRI’s actual measure also raises questions about the findings on the effect of PRI’s assessment of tort law on the economy. If businesspersons do not perceive the state of tort law accurately, it seems less likely that the true state of the law would have a substantial impact on business decisions.

The general insignificance of the control variables may also be reason to question the results. While I have employed the control variables most expected to be predictive of my dependent variables, some other unmeasured variable may be explaining the results. For this to be true, though, that unknown variable would have to be one that is very highly correlated with the PRI score.

Yet another possibility is that the economic costs of tort regimes may be largely exported to other states, which would obscure any association in a study of the states.

242. See supra Part V.B (discussing the effects of tort liability on foreign investment and international economic growth).
243. HARRIS INTERACTIVE, supra note 141, at 101.
244. I attempted to adjust for this with my measures for entrepreneurial
by the tort system of one state may be felt directly by businesses of another state, and lawyers may adapt to state law differences by forum shopping. If this were the case, the effects of state legal differences might not appear in state economies, even if the legal differences were having some economic effect. Such a result might counsel for national action, though this case also remains unproved.

Consequently, there are reasons to doubt the findings on the effect of the PRI measure and state economic growth. However, the association is an especially strong one, so it should not be cavalierly dismissed either. The quantile regression provides some additional support for the conclusion, suggesting that further investigation is warranted. Nor does this isolated association provide conclusive evidence that pro-plaintiff tort law benefits the economy, given the lack of significant results in other regressions. However, the finding is powerful evidence that tort law is at least not harming the states’ economies. With such a strong relationship between pro-plaintiff tort law and economic growth, it is difficult to imagine some unmeasured factor that could reverse such a relationship.

activity, on the presumption that these effects would have a greater intrastate effect, but this presumption may be incorrect.

245. See, e.g., Stephen B. Burbank, The Class Action Fairness Act of 2005 in Historical Context: A Preliminary View, 156 U. PA. L. REV. 1439, 1442 (2008) (noting that “plaintiffs’ lawyers react to changes that make litigation more difficult in one court system by moving their cases to other court systems, while defense counsel seek forum advantages for their clients by using the tools available to them to affect the site of litigation”).

246. This contrary result is sometimes known as a “backfire” effect and provides the strongest evidence of no positive effect. See David Weisburd et al., When Can We Conclude that Treatments or Programs “Don’t Work”? 587 ANNALS AM. ACAD. POL. & SOC. SCI. 31, 42 (2003).