Do Class Actions Deter Wrongdoing?

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Executive Summary

- There is little doubt that class action lawsuits generate specific deterrence. We know this because when class action lawsuits are resolved they often include a court order obligating the defendant to change its behavior.

- There should also be little doubt that class action lawsuits generate general deterrence. The theory of general deterrence is just as strong today as it was when it was introduced by the law-and-economics movement 50 years go. All you have to assume is that corporations act rationally in response to financial incentives.

- The notion that general deterrence fails because of agency costs is unduly pessimistic about the ability to overcome these costs by contract, and, in any event, the same notion would also call into question the disciplining force of market feedback loops—yet skeptics of general deterrence do not seem to think market feedback loops fail, too.

- The notion that general deterrence fails because corporations cannot anticipate class action lawsuits is belied by the testimony from and resources devoted by corporations to doing just that.

- The notion that general deterrence is only a theory and has no empirical support is false. There are many studies demonstrating general deterrence, including several studies of class action lawsuits. The class action studies cover different time periods and different types of lawsuits, but they all find the same thing: class actions deter misconduct.

Introduction

The class action is usually said to serve three principal purposes: litigation efficiency, compensation of victims, and deterrence of wrongdoing. Of the three, the one that is often thought most important is the last: deterrence. Yet, in recent years, class action critics have questioned whether class actions serve this purpose at all.

In this white paper, I consider the theory and evidence that class actions deter misconduct. As I will show, the theory behind the deterrence benefits of class actions remains just as strong today as it was when it was introduced 50 years ago by the "classical" law and economics movement. Moreover, although there is not a great deal of empirical evidence to support the theory for class actions, there is some, it is uncontroverted, and it is consistent with reams and reams of empirical evidence in favor of deterrence for individual lawsuits. In short, we have every reason to believe the class action deters misconduct.

Specific Versus General Deterrence

Let me begin by making an important distinction that is sometimes overlooked in the discussion about class actions and deterrence. There are two types of deterrence, and it is hard to deny that class actions *do* accomplish one of them.

One type of deterrence is known as "specific deterrence." Specific deterrence refers to how an *actual* wrongdoer responds to an *actual* lawsuit against it: does that wrongdoer stop the misbehavior after it gets caught? General deterrence, by contrast, refers to how *potential* wrongdoers respond to a *potential* lawsuit: do potential wrongdoers decide not to commit misconduct to begin with because they are afraid of lawsuits against them?

There is little doubt that class action lawsuits generate specific deterrence. How do we know this? We know this because when class action lawsuits are resolved they often include a court order obligating the defendant to change its behavior. Almost all class actions that are not dismissed are settled, and, when I examined every single one of them in U.S. federal court over a two-year period, I found that, almost one quarter of the time, the settlement included a provision requiring the defendant to change its behavior in some way. [2] In some types of class action lawsuits, I found behavior-modification provisions as often as 75% of the time.[3] But even when there was no behavior modification provision, this does not mean the class action did not cause specific deterrence: sometimes defendants drop offending practices on their own after they get sued.

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Some critics complain that the behavior-modification provisions in class action settlements are cosmetic and do not impose real restrictions on corporations.[4] This is a difficult complaint to evaluate without digging into the merits of each and every one of the hundreds of class action settlements that are approved every year. Although I have examined these settlements for my research, I was in no position to assess the merits of each case. But I have served as an expert witness in dozens of class action cases where I did dig into the merits, with many of these cases having ended in settlements that included behavior-modification provisions, and the provisions in my cases were not toothless. For example, in several settlements in MDL 2072 against banks for reordering their customers' debit card transactions from chronological order to an order that maximized the number of overdraft fees the bank could charge them, the settlements included provisions forbidding the banks from reordering their customers' transactions in the future; there is little doubt that their customers will pay fewer overdraft fees as a result.[5] Another example is the recent antitrust settlement against the Blue Cross Blue Shield health insurance companies in MDL 2406. Not only did the class of health care subscribers recover $2.67 billion from the settlement, but the companies agreed on several specific behavior modification provisions designed to allow more competition with one another across state lines; there is little doubt that subscribers will pay less in the future because of increased competition.

I also know that class action critics have not identified very many toothless provisions when they have had the chance to do so. Of the thousands upon thousands of class action settlements over the past few years, I could find only a small handful alleged to include cosmetic behavior modifications outside one exceptional area of litigation.[6] In my view, critics have thus far not given us much reason to question the efficacy of specific deterrence in class actions.

But I will not discuss specific deterrence further here. In my mind, the more interesting debate in class action circles is about general deterrence.

The theory of general deterrence

In the very first semester of the very first year in every law school in America, students have been taught for the last 50 years that the threat of a lawsuit deters misbehavior, largely due to theories propounded by the famous "Chicago School" of law and economics. By now, most of us in the academy accept the theory of general deterrence without question.

It is easy to see why the theory is so powerful. All we must do is assume people are rational. A rational person does not want to get sued. Lawsuits cost money. You must pay lawyers, and, if you lose, you have to pay the plaintiff. This means that lawsuits are a great way to stop people from misbehaving when we don't want them to: all you must do is set the damages awarded in a lawsuit equal to an amount related to the harm the misbehavior inflicts on the injured party. If the misbehavior benefits the corporation less than the harm it inflicts on others, then the corporation will rationally choose not to engage in the misconduct. Indeed, the only time the corporation will rationally choose to engage in the misconduct is when the benefits outweigh the harm, but that's ok: we want people to do things that generate more benefits than costs if we can make the injured party whole in the process. This is what we call "internalization of costs." The rational-actor model of cost internalization is at the core of "classical" law and economics.

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It is true that lawsuits are not the only way we can deter misbehavior. Relying on word of mouth in the marketplace can also be effective. If a company mistreats its customers, employees, or shareholders, then the customers, employees, and shareholders can tell others to go elsewhere. But it should be noted that lawsuits *enhance* market feedback loops: lawsuits publicize wrongdoing to consumers, employees, and shareholders in a way that word of mouth does not on its own. Indeed, a few empirical studies have found that the risk of reputational harm from litigation is an even more effective deterrent than the monetary penalties companies face from losing the lawsuits themselves![7]

Many scholars today do not fully accept classical law and economics because they think the underlying model of human behavior is inaccurate: people, it turns out, are not very rational. There are now countless studies and even popular books showing how all of us make the same types of mistakes repeatedly when we try to process information; we do not simply add up the costs and compare them to the benefits before we act. These so-called "behavioral" economists seek to update the classical rational-actor model with findings from these studies. The behavioral findings are admittedly powerful, but none of them suggest that the usual defendants in class actions— corporations—are predictably irrational in the same way the rest of us are.[8]

So why do critics think that the theory of general-deterrence-through-lawsuits is wrong when the lawsuits are class action lawsuits? There are two reasons.

The first reason is "principal-agent costs": the corporations (and, ultimately, the shareholders) pay the bills, but the corporate executives make the decisions, and sometimes the twain shall not meet.[9] But this is a problem only if corporations do not try very hard to align the interests of corporate officers and the corporation. Much of the concern with principal-agent costs comes from the fact that corporate officers may have left the corporation by the time the bills for their decisions come due. But companies can delay or rescind their compensation in such circumstances to equalize the corporate and officer time horizons, for example with vesting stock options. Indeed, most companies already do this.

Indeed, one sign that principal-agent costs are weak reasons to doubt the theory of deterrence for class actions is what the implications are *beyond* class actions. The exact same principal-agent problems that critics say make corporate executives unresponsive to class action lawsuits would make them unresponsive to every other type of lawsuit as well; are critics saying the *entire* theory of general deterrence is wrong? Indeed, not only does this criticism suggest that the theory of deterrence is wrong, but it also suggests that the theory of market feedback loops is wrong as well. If we cannot make corporate executives respond to the threat of lawsuits, then why would we think we can make them respond to the threat of consumer, employee, or shareholder boycotts? That is, if class action lawsuits can't deter corporate misconduct because of agency costs then nothing else that costs the corporation money can either. Thus, if we contend that class action lawsuits are failures, then we must admit that other lawsuits and the market feedback loops are, too. But no one wants to admit all that.

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This brings me to the second reason some critics say class actions don't generate deterrence: corporations cannot avoid the misconduct that leads to class actions because corporations cannot predict which of their activities will lead to class actions.[10] Class actions, they say, target behavior at random; no corporate executive can guess why he will be sued. But, if you can't predict beforehand why you will be sued, then you can't change your behavior to avoid the lawsuit.

There is no doubt that there is uncertainty in our system of justice. Some of this uncertainty is a good thing: we don't want rigid rules in place that box companies in and prevent them from innovating; we'd rather let companies do what they want to do and make them pay the costs later if they harm people. Uncertainty means flexibility.

But uncertainty also means that it is sometimes hard to predict what will happen when a company does something new. But hard to predict does not mean impossible. If there is a 50-50 chance a company might lose a lawsuit, then the corporate executives do not just throw up their hands and say, "we don't know what will happen so let's not worry about it." They do what any other rational person would do: they discount the amount of money they would pay out if they lose the lawsuit by the 50% chance, they might *not* lose the lawsuit.

But this assumes the company knows it might be sued to begin with. What if it is impossible for the company to know which of its business decisions might get it into trouble? Is it supposed to assume every decision might lead to a lawsuit? How does the company figure out what the damages would be in the lawsuit if it can't even figure out what it might be sued for to begin with?

These are all hard questions, but corporations long ago found a solution to them: they hire lawyers. Yes, they hire dozens or even hundreds of them, pay them big salaries, and ask them to do something called "risk assessment." And it is not only in-house lawyers that do this: companies rely on outside counsel to do it as well. For example, my old law firm sent around this apropos missive a few years ago: "Mitigating Consumer Fraud Class Action Litigation Risk: Top Ten Methods for 2015."

Of course, all these lawyers are expensive, and it may be that deterrence through litigation comes with greater transaction costs than deterrence through other means. Moreover, I am sure sometimes even all these lawyers are completely hopeless at seeing what the future might hold. In some physical injury cases where the harm caused by a company's products does not manifest itself for decades after the company sold the product, it may be impossible for a company to anticipate that it might be sued. Who knows what law and even science will look like 20 years from now? On the other hand, there are almost no class action lawsuits of this sort anymore; physical injury cases must be brought individually today. Thus, to the extent the 20-years-later problem is a problem, it is not a problem with our class action system.

But you do not have to take my word that corporations can anticipate class action lawsuits. A legal scholar at Suffolk Law School, Linda Simard asked the corporate executives directly.[11] She sent a questionnaire to the general counsel at every company in the Fortune 500, asking them about the

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class action lawsuits they had faced, and whether they had any ability to predict the lawsuits at the time their corporations made the business decisions giving rise to the class actions. They responded that their ability to predict the class actions they had faced varied based on what kind of lawsuits they were. For some class actions, over 90% of the time they said they had “moderate” or “high” ability predict that they would be sued. But even for the wiliest class actions of all—those resting on a completely “novel” legal theory—still 25% of the corporate lawyers said they had a “moderate” or “high” ability to predict they were coming. Our system is hardly random if even the *new* legal theories can be anticipated 25% of the time.

Of course, this survey also shows that even though some corporate lawyers knew they might be sued in a class action lawsuit, their companies did not always decide to refrain from the behavior; they sometimes went ahead and harmed people anyway. You might be asking yourself: how are class actions deterring anything if corporations are committing misconduct even when they know they might be sued? One answer is that even if the deterrence is imperfect (e.g., maybe damages are set too low by the substantive law), it is better than nothing. But another answer goes back to the cost-benefit analysis I described earlier: we do not always want to stop corporations from harming people because sometimes the benefits to society outweigh the harms. What we do want, however, is for corporations to know they will pay for the harms before they decide to act so they only act when the benefits outweigh the harms. Class actions help corporations know that.

We law professors have not been misleading our students for the past 50 years: the theory of general deterrence is sound. We still have every reason to think that lawsuits—including class action lawsuits—deter corporate misconduct.

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The data on general deterrence

Thus far, my defense of general deterrence has been theoretical. It is a strong theory, as even many class action critics admit[12]—this, again, is why every law school teaches it to every incoming class of students every single year—but it is still a theory. Naturally, the critics of class actions have picked up on this fact. Thus, the last argument critics raise about deterrence is this one: the theory may be good, but you have no evidence that it works in practice. Until we have some evidence, they suggest, we cannot assume class actions generate any deterrence. As Professor Linda Mullenix at the University of Texas puts it:

> [T]he deterrence theory suffers from a lack of empirical evidence and is based on conjectured hypotheses about corporate behavior. [S]ocial scientists have not been able to empirically measure . . . the deterrent effect of class litigation . . . Thus, judicial, and scholarly arguments relating to the deterrent effect of class litigation are largely theoretical, conclusory pronouncements.[13]

I don’t like this argument very much. We have a strong theory that class action lawsuits generate deterrence. The critics do not have a strong theory that they do not. If anyone should have the burden of coming up with some evidence, it should be the people without a theory, not the people with a theory.

But, in fact, there is indeed evidence that general deterrence works. There now are several studies of the theory. They span different time periods and involve different types of class actions, and they all say the same thing: class actions deter misconduct.

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These are just the class action studies. There are far more studies showing that other types of lawsuits deter misconduct. These other studies are not uncontroverted like the class action studies, but there are many, many more studies finding that lawsuits generate deterrence than finding that they don't. These other studies are important because, as I noted above, some of the argument's critics raise about the theory of deterrence are not specific to class action lawsuits: if the evidence shows corporate executives respond to the threat of individual lawsuits, then there is reason to think they respond to the threat of class action lawsuits, too. I will discuss these other studies after I discuss the class action studies:

But before I do, one note about these studies: many of them do not measure misconduct directly. That is because it is often impossible to measure misconduct directly. For example, it is impossible to observe whether companies are secretly conspiring with one another to fix prices—they do it in secret. Thus, most of the studies below measure deterrence by looking at proxies for misconduct rather than misconduct itself—for example, for price fixing, the studies look at whether prices go up or down. It's not perfect, but it is the best science can do right now. In other words, the best science can do right now suggests that lawsuits deter misconduct.

In 1981, several economists set out to examine whether increasing the threat of an antitrust enforcement action by the federal government deterred companies from price fixing.[14] The economists examined the white bread industry. They looked at the "markup" (the price above the price of the ingredients) on a loaf of white bread in various places in the United States between 1965 and 1976; the markup was their proxy for potential price fixing. They compared these markups to the enforcement budget of the U.S. Department of Justice's Antitrust Division over time. They hypothesized that the more money the federal government devoted to enforcement, the greater the threat of an enforcement action against price fixers; thus, if federal enforcement deterred price fixing, the markups would be smaller when the federal government's enforcement budget was bigger.

That's not what they found. The federal government's enforcement budget had no effect on price markups until 1972; only then did a bigger budget lead to lower prices. Why? The economists concluded that only after 1972 did companies face the threat of private antitrust class action lawsuits (only in 1966 was the modern money damages class action created) and *it was the private lawsuits that the companies were afraid of!* They found that "settlements in class actions for price fixing in the bread industry were almost 10 times greater than government-imposed fines," and that "the deterrent effect of DOJ's enforcement efforts came not from the threat of publicly imposed fines or imprisonment, but from the likelihood of an award of private treble damages"[15] In other words: "class actions represent the effective penalty in price-fixing cases."[16]

There have been several more recent studies, all of them concerning securities fraud class actions, and, with one exception, all of them likewise finding that, the greater the threat of a class action lawsuit, the less corporate misconduct.

Two of these studies examined what happened when a U.S. Supreme Court decision in 2010 insulated some foreign companies from American securities fraud class action lawsuits. The securities fraud laws make it illegal for companies to misrepresent or hide relevant information from shareholders. When the threat of class action lawsuits went away, did the companies disclose less information to their shareholders than they had before? Both studies found that the answer was a resounding "yes": the threat of a class action lawsuit had induced the companies to be more forthcoming to their shareholders.[17]

A third study examined disclosures to shareholders over a larger set of companies and over a longer time period, 1996 to 2010.[18] The authors attempted to compare disclosure made by companies at a higher risk of facing securities fraud class actions to those at a lower risk; the authors identified which companies faced higher risks with a model that depended on the size of the company, the company's industry (e.g, was it a software company or a biotechnology company), and a host of other variables. They found that companies at higher risk of being sued disclosed more information to shareholders, updated their disclosures more often, and rendered those disclosures in more readable language than companies at lower risk! They also examined whether this "disclosure gap" narrowed after 2005 when the Securities and Exchange Commission started requiring all companies—whether they were at high or low risk of being sued—to disclose all the same information on the forms they file every year with the federal government. The authors found that the gap did indeed narrow when the companies no longer had any choice but to make the disclosures. This means that, when the companies did have a choice, it was the threat of a securities fraud class action that made them do it.

A fourth study looked at what influenced corporate decisions to misrepresent their earnings to shareholders in the years 1997 through 2008. Did the fact that a company got sued in a securities fraud class action for earnings manipulation discourage *other companies* in that same industry or geographic region from manipulating their own earnings? Here again, after controlling for numerous other variables, the authors concluded that the answer was "yes": class actions deter misbehavior.[19]

Against these five class action studies, I have found only one study that points in the opposite direction. Three scholars examined whether American corporations disclose more information to shareholders than Canadian corporations do.[20] Because American securities fraud laws are more robust, that is what the deterrence theory would suggest. But they found precisely the opposite: more disclosure in Canada. I do not put as much stock in this study as I do the others because it is very hard to do cross-country empirical studies; it is impossible to control for all the ways in which different countries differ from one another. And this study is directly contradicted by the several American-only studies, above, that show more liability leads to more disclosure. Nonetheless, for sake of completeness, I include this study here. But, as I said, it is the *only* contrary study I have found.

What about studies of other lawsuits? These studies are even more numerous. For decades and decades, scholars have studied the data on deterrence, and, for decades and decades, the studies have generally corroborated what the class action studies show: the threat of a lawsuit deters misconduct.

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The studies outside the class action realm are too numerous to discuss comprehensively here. And not all of them deal with misconduct by corporations. But I will summarize them to give you a taste of what they say:

- *Tort liability and safety research*: scholars have found that the industries that face more tort liability spend more money researching safety measures for their products.[21]

- *Workers' compensation and workplace injuries*: scholars have found that, when the benefits employers would have to pay out for workplace injuries increased, fewer workplace deaths followed.[22]

- *Bartender liability and alcohol-related traffic deaths*: scholars have found that, when liability was imposed on bartenders for inebriated driving by their patrons, fewer alcohol-related traffic deaths followed.[23]

- *Medical malpractice liability and negligence, deaths, and defensive medicine*: scholars have found that, when liability for medical malpractice decreases, doctors and hospitals spend less time and money on patients,[24] and more medical negligence and deaths follow.[25]

- *Tort reform and traffic accidents*: scholars have found that, when liability for traffic accidents decreases, more traffic accidents follow.[26]

As I said, these studies are not uncontroverted, and I tried to cite opposing studies in the above footnotes.[27] But the important point is that the lion's share of studies *supports* the theory of general deterrence.

Conclusion

The primary justification for the class action lawsuit in the United States today is the deterrent effect it has on corporate misbehavior. In recent years, however, some critics have begun to question even this justification. Some critics question the theory of general deterrence and others have said the theory lacks empirical evidence. But, as I have explained, the theory of deterrence is still sound. Moreover, there is in fact empirical evidence to support it, both for class actions as well as other lawsuits. As a result, I believe scholars and policymakers can still safely rely on deterrence as reason to retain class actions.

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[1] Milton R. Underwood Chair in Free Enterprise and Professor of Law, Vanderbilt Law School.

[2] See Brian T. Fitzpatrick, *An Empirical Study of Class Action Settlements and Their Fee Awards,* Journal of Empirical Legal Studies 811, 824 (2010).

[3] See id.

[4] See, e.g., Erin L. Sheley and Theodore H. Frank, *Prospective Injunctive Relief and Class Settlements*, 39 Harvard Journal of Law and Public Policy 769, 779-80 (2012).

[5] Some have argued that even settlements like these are toothless because banks just create new fees to make up for the lost revenue from the old ones. This argument is much like the one that says that consumers do not ultimately benefit from tort damages because companies simply increase prices to cover liability judgments and pass those increases on to the same consumers. But these arguments ignore the market-allocation benefit of cost internalization: if companies pass every litigation loss onto consumers, the companies committing the most misconduct will have the highest prices and eventually lose market share to those who commit less misconduct. See e.g., David Rosenberg, *Individual Justice and Collectivizing Risk-Based Claims in Mass-Exposure Cases*, 71 N.Y.U. Law Review 210, 230-32 (1996).

[6] The only list of any sort I could find was in Sheley & Frank, supra. They identified less than 10 cases outside of merger litigation. In merger litigation, there is solid evidence that most behavior modification provisions—usually a promise to disclose more information to shareholders about the merger—don't do much. See Jill E. Fisch, Sean J. Griffith and Steven Davidoff Solomon, *Confronting the Peppercorn Settlement in Merger Litigation: An Empirical Analysis and a Proposal for Reform*, 93 Texas Law Review 557, 557-58 (2015). Although merger settlements have indeed been numerous in recent years, they are a very special—and very narrow—slice of our class action system. Moreover, now that it has become known the disclosures mandated by the settlements are not meaningful, judges have begun rejecting the settlements. See Sean J. Griffith, *Private Ordering Post-*Trulia*: Why No Pay Provisions Can Fix the Deal Tax and Forum Selection Provisions Can't* in The Corporate Contract in Changing Times 292-93 (Steven Davidoff Solomon & Randall Thomas, eds.) (University of Chicago Press 2019).

[7] See, e.g., Brent Fisse & John Braithwaite, The Impact of Publicity on Corporate Offenders 243 (Albany, NY, State University of New York Press, 1983); Joni Hersch, *Equal Employment Opportunity Law and Firm Profitability*, 26:1 Journal of Human Resources 152 (1991); Jonathan M. Karpoff & John R. Lott, Jr., *The Reputational Penalty Firms Bear from Committing Criminal Fraud*, 36:2 Journal of Law and Economics 784 (1993); Paul S. Koku, *An analysis and the effects of class-action lawsuits,* 59 Journal of Business Research 508 (2006); Jonathan M. Karpoff, et al., *The Cost to Firms of Cooking the Books*, 43 Journal of Financial and Quantitative Analysis 581-612 (2008); John D. Graham, *Product Liability and Motor Vehicle Safety,* in The Liability Maze: The Impact of Liability Law on Safety and Innovation 181-182 (Peter W. Huber & Robert E. Litan, eds., Washington D.C., Brookings Institution, 2010).

[8] See, e.g., Stefano DellaVigna, *Psychology and Economics: Evidence from the Field*, 47 Journal of Economic Literature 315, 361 (2009) ("Unlike individual consumers, firms can specialize, hire consultants, and obtain feedback from large data sets and capital markets. Firms are also subject to competition. Compared to consumers, therefore, firms are less likely to be affected by biases . . . and we expect them to be close to profit maximization."). It is true that there has been some research that indicates that firms are sometimes not perfectly rational actors. *See* Ulrike Malmendier & Geoffrey Tate, *CEO Overconfidence and Corporate Investment*, 60 Journal of Finance 2661, 2665-73 (2005). However, there are three good reasons to think that firms behave more rationally than individuals. First, firm decision making tends to be done by groups, and group decision making tends to be more rational than individual decision making. See Tamar Kugler et al., *Are Groups more Rational than Individuals? A Review of Interactive Decision Making in Groups*, 3 Wiley Interdisciplinary Review: Cognitive Science 471, 471 (2012). Second, much of the literature identifying irrational corporate behavior does so by finding circumstances in which certain firms deviate from the rational behavior of other firms—suggesting the default is rational behavior, punctuated by occasional failures. See Malmendier & Tate, supra. Third, and perhaps most importantly, research indicates firms are consistent about pursuing their rational self-interest, unlike individuals who are often more concerned with non-rational considerations. Phanish Puranam et al., *Modelling Bounded Rationality in Organizations: Progress and Prospects*, 9 Academy of Management Annals 337, 392 (2015).

[9] See, e.g., John C. Coffee Jr., *Reforming the Security Class Action*: *On Deterrence and Its Implementation*, 106 Columbia Law Review 1534, 1553-63 (2006).

[10] *See, e.g.*, Walter K. Olson, The Litigation Explosion: What Happened When America Unleashed the Lawsuit 176-77 (1992); U.S. Chamber of Commerce, Letter to Consumer Financial Protection Bureau 53 (Dec. 11, 2013), available at http://blogs.reuters.com/alison-frankel/files/2013/12/mayerbrown-chamberletter.pdf.

[11] Linda Sandstrom Simard, *A View From Within the Fortune 500: an Empirical Study of Negative Value Class Actions and Deterrence*, 47 Indiana Law Review 739 (2014).

[12] See, e.g., Sheley and Frank, supra, at 827 ("[I]t seems intuitive that the prospect of litigation might deter potential defendants from misconduct.").

[13] Linda S. Mullenix, *Ending Class Actions as We Know Them: Rethinking the American Class Action*, 64 Emory Law Journal 401, 420 (2014).

[14] Michael Kent Block, Fredrick Carl Nold, and Joseph Gregory Sidak, *The Deterrent Effect of Antitrust Enforcement*, 89 Journal of Political Economy 429 (1981).

[15] Id. at 440–41.

[16] Id. at 443.

[17] James P. Naughton et al., "Private Litigation Costs and Voluntary Disclosure: Evidence from the Morrison Ruling"(Working paper, last updated February 2017), https://ssrn.com/abstract=2432371; Anywhere Sikochi, "The Effect of Shareholder Litigation Risk on the Information Environment" (Working paper, Harvard Business School, last updated September 4, 2016), http://www.hbs.edu/faculty/Publication%20Files/17-048_413e9658-649c-4904-8d49-6779f11910ac.pdf.

[18] Karen K. Nelson and A. C. Pritchard, *Carrot or Stick? The Shift from Vocabulary to Mandatory Disclosure of Risk Factors*, 13 Journal of Empirical Legal Studies 266 (2016).

[19] Simi Kedia, Kevin Koh, & Shivaram Rajgopal, *Evidence on Contagion in Earnings Management*, 90 Accounting. Review 2337 (2015).
[20] Stephen Baginski et al., *The Effect of Legal Environment on Voluntary Disclosure: Evidence from Management Earnings Forecasts Issued in U.S. and Canadian Markets*, 77 The Accounting Review 25 (2002).
[21] Viscusi and Moore found that industries with higher tort liability loss ratios spent more on product-related research and development, and concluded that "tort liability does . . . have safety incentive effect." "An Industrial Profile of the Links Between Product Liability and Innovation" in *The Liability Maze*, 114. However, Viscusi and Moore establish in other scholarship that this effect may taper off or become negative if liability grows too large. Viscusi and Moore "Product Liability, Research and Development, and Innovation," *Journal of Political Economy* 101, no. 1 (February 1993): 161–184. Furthermore, Viscusi's scholarship also casts doubt on the effectiveness of punitive damages, finding that they do not affect the incidence of chemical accidents, chemical releases, accident fatalities, or increase insurance premiums. "The Social Costs of Punitive Damages against Corporations in Environmental and Safety Tort," *Georgetown Law Journal* 87, no. 2 (November 1998), 296–98.
[22] See Moore and Viscusi, *Compensation Mechanisms for Job Risks: Wages, Workers' Compensation, and Product Liability* (Princeton, NJ: Princeton University Press, 1990), 133; James R. Chelius, "Liability for Industrial Accidents: A Comparison of Negligence and Strict Liability Systems," *Journal of Legal Studies* 5, no. 2 (June 1976), 303–06.
[23] See Sloan et al., *Drinkers, Drivers, and Bartenders: Balancing Private Choices and Public Accountability* (Chicago: University of Chicago, 2000).
[24] A number of scholars have found similar results supporting this conclusion. Daniel Kessler and Mark McClellan's research finds that medical malpractice reforms reduce hospital expenditures. "Do Doctors Practice Defensive Medicine?" *Quarterly Journal of Economics* 111, no. 2 (May 1996), 353. Patricia M. Danzon has outlined the evidence indicating that liability induces physicians to spend more time per patient visit. "Liability for Medical Malpractice," *Journal of Economic Perspectives* 5, no. 3 (1991): 62. Similarly, Donald N. Dewees, et al. has outlined the evidence showing greater malpractice insurance premiums are associated with more diagnostic testing. *Exploring the Domain of Accident Law Taking the Facts Seriously* (New York: Oxford University Press, 1996), 104–5. However, there is scholarship that points the opposite direction. Danzon reviews the evidence that medical malpractice liability is negatively correlated with frequency of lab tests. "Liability for Medical Malpractice,"62. Michael Frakes recites conflicting studies on whether malpractice liability is associated with more c-sections. , "Defensive Medicine and Obstetric Practices," *Journal of Empirical Legal Studies* 9 (2012), 457–62.
[25] As with the previous footnote, a number of scholars have found results that support this conclusion, but this view is not unanimous. Zenon Zabinski and Bernard S. Black find that medical malpractice tort reforms increase the incidence of adverse outcomes other than death. "The Deterrent Effect of Tort Law: Evidence from Medical Malpractice Reform", (Working paper, Northwestern University, last updated February 15, 2015), https://ssrn.com/abstract=2161362. Michelle Mello and Troyen Brennan present evidence that liability for medical malpractice reduced negligence rates. "Medical Malpractice and the Tort System: What Do We Know and What (If Anything) Should We Do About It?" *Texas Law Review* 80 (2002), 1598.
Joanna M. Shephard found that medical malpractice tort reforms increased deaths. "Tort Reforms' Winners and Losers: The Competing Effect of Care and Activity Levels," *UCLA Law Review* 55 (2008): 905. Paul C. Weiler et al. concluded that "the more malpractice suits that are brought . . . the fewer the number of negligent medical injuries," despite the fact that "this result did not reach the conventional level of statistical significance," *A Measure of Malpractice: Medical Injury, Malpractice Litigation, and Patient Compensation* 129 (Cambridge, MA: Harvard University Press, 1993), 129. However, as in the previous footnote, there is scholarship that points in the other direction. Kessler and McClellan found that malpractice tort reforms did not reduce mortality or medical complications. "Do Doctors Practice Defensive Medicine?," 353. And Frakes and Anupam B. Jena find that malpractice tort reforms do not affect birth outcomes. "Does Medical Malpractice Law Improve Health Care Quality," *Journal of Public Economics* 143 (2016), 142–158.
[26] Paul H. Rubin and Joanna M. Shepherd find that collateral source reforms increase vehicle accident deaths. "Tort Reform and Accidental Deaths," *Journal of Law and Economics* 50, no. 2 (2007), 221. Michelle J. White finds that drivers take less care in comparative fault systems than in contributory negligence systems. "An Empirical Test of the Comparative and Contributory Negligence Rules in Accident Law," *RAND Journal of Economics* 20, no. 3 (1989), 325–29. Michael L. Smith found that "[t]ests in the early studies produced mixed results, but later studies typically find that adoption of no-fault rules to replace common law tort liability leads to an increase in automobile accident fatality rates." "Deterrence and Origin of Legal System: Evidence from 1950–1999," *American Law and Economic Review* 7 (2005), 352. But see Rubin and Shephard's finding that other tort reforms than collateral source reforms decreased vehicle accident deaths. "Tort Reform and Accidental Deaths," 221. See also W. Jonathan Cardi, et al,'s outline of conflicting studies on whether no-fault automobile accident compensation systems reduce or increase fatalities. "Does Tort Law Deter Individuals?: A Behavioral Science Study," *Journal of Empirical Studies* 9 (2012), 573–74, n. 31.
[27]See also Robert A. Kagan's overview of the topic in *Adversarial Legalism: The American Way of Law* (Cambridge, MA: Harvard University Press, 2001), 141–44. Some studies do not examine real-world data, but, rather, simulations, where survey takers are asked hypothetical questions about how they would respond to potential liability in certain situations. These studies have found mixed evidence of deterrence. See, for example, Cardi et al's finding that potential tort liability did not affect decisions to engage in potentially tortious behavior even though the threat of criminal sanctions did. "Does Tort Law Deter Individuals?: A Behavioral Science Study," (2012), 567. Theodore Eisenberg and Christoph Engel found that damages liability deterred in public good experiments. "Assuring Civil Damages Adequately Deter: A Public Good Experiment," *Journal of Empirical Legal Studies* 11 (April 2014), 301.