# The Economics of Civil Procedure

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## Abstract

The economic analysis of procedure reduces most issues to direct costs and error costs. Direct costs are ordinary litigation costs. Error costs are the reduction in deterrence and the increase in chilling that result from inaccurate adjudication. The goal of procedure is the minimization of the sum of direct and error costs. This framework has been applied to many procedural issues, and this survey focuses on three: dispositive motions (motions to dismiss and summary judgment), discovery, and jurisdiction. Economic analysis has yielded significant insights in these areas, but important questions remain for future researchers. Because theory is often indeterminate, this survey discusses empirical as well as theoretical work, although, unfortunately, empirical work has focused on direct costs and has largely neglected error costs.

## THE ECONOMIC APPROACH TO PROCEDURE

The key insight of the economic analysis of procedure is that optimal procedure requires minimization of the sum of direct costs and error costs (Posner 1973). Direct costs are attorney fees and other litigation expenses, and error costs are inefficient behaviors resulting from inaccurate adjudication. Whereas other approaches to procedure consider a welter of incommensurable values, such as fairness, cost, accuracy, speed, dignity, and participation (Fed. Rules Civ. Proced. 2014, 1; Mashaw 1976, Michelman 1973), the economic approach can analyze most procedural issues with just two terms—direct costs and error costs. In addition, those two terms can, at least in principle, be measured empirically and expressed in money or as components of a social welfare function. Whereas a benefit of economic analysis is that it provides an overarching framework for trade-offs among many traditional factors—such as cost, accuracy, and speed—a potential criticism is that it tends to ignore other values, such as dignity and participation.

To understand direct costs and error costs, first consider a perfect legal system. Such a system would cost nothing and implement substantive law with 100% accuracy. Obviously, such an ideal system is impossible. All legal systems deviate from the ideal by consuming real resources, principally the time of skilled workers, such as lawyers and judges. Those costs, often called litigation costs, are direct costs. In addition, no legal system is perfectly accurate. Errors cause the legal system to fall short of achieving the goals of the substantive law. For example, economic analysis argues that the purpose of tort law is the minimization of the sum of precaution, accident, and administrative costs. When the legal system makes errors in tort cases (for example, failing to impose liability on negligent actors), the result is likely to be suboptimal expenditures on precautions and an excessive number of accidents. Similarly, errors in contractual adjudication are likely to result in inefficient effort by contracting parties who anticipate that the legal system will not sanction inadequate effort. Accidents caused by failure to take efficient precautions and the deviation from efficient contractual effort are error costs, and, in principle, they can be measured in monetary or social welfare terms.

Error costs can result from three types of mistakes: false negatives, false positives, and the miscalculation of damages. False negatives are the failure to impose liability when it is appropriate and, as has already been discussed, they reduce deterrence. False positives are the imposition of liability when none is appropriate. If false positives were truly random, they would have little negative effect. Instead, they would be roughly equivalent to a head tax, which would have little or no effect on primary behavior and thus little effect on welfare. However, to the extent that certain activities—such as running a railroad or manufacturing consumer goods—make it more likely that the person conducting those activities will be sued and that liability will be mistakenly imposed, false positives act as a tax on those activities and may cause reductions in beneficial activities. Kaplow & Shavell (1994) call the reduction in beneficial activity from false positives chilling costs. Another kind of error would be mistakes in the calculation of damages (Kaplow & Shavell 1996). If such mistakes were purely random and average liability were correct, then mistakes about damages would have little effect on behavior and thus contribute little if at all to error costs. However, to the extent that damages are systematically too low or too high, they could cause either underdeterrence or chilling.

The analysis of error costs is relatively straightforward in legal fields such as tort, contract, property, environmental law, and antitrust, where the goals of the law can be easily expressed in economic terms. The analysis is more difficult in other areas, such as antidiscrimination law or privacy, where economic analysis is less clear or more controversial. Nevertheless, to the extent that discrimination and invasion of privacy can be conceived of as harms and those harms can be

monetized or expressed in a social welfare function, the economic analysis of procedure in terms of direct costs and error costs is applicable.

The sections that follow survey the economic analysis of a few important procedural topics where economic analysis has yielded genuine insights, but that are ripe for additional research: dispositive motions, discovery, and jurisdiction. In addition, these topics are less well covered in other surveys. See Sanchirico (2012) for a collection of surveys by multiple authors of economic analysis of many aspects of procedure, albeit one that does not discuss motions or jurisdiction. See also Bone (2003) for a book-length treatment of the economics of procedure that covers motions, discovery, and other topics, but not jurisdiction. Particular attention is paid in this survey to empirical analysis, because theoretical work almost always suggests that the efficient rule depends on circumstances.



## DISPOSITIVE MOTIONS

Although the economic analysis of litigation often assumes that cases either settle or go to trial, many cases are resolved by motions to dismiss or summary judgment. In fact, in federal court, approximately 13% of all cases end in such dispositive motions, whereas trials occur in less than 4% of cases (Eisenberg & Lanvers 2009, p. 128). Motions to dismiss for failure to state a claim, called 12(b)(6) motions in federal court, are made soon after a case is filed and are granted if the plaintiff's complaint is insufficient. That is, the judge looks only at the plaintiff's allegations (not the evidence) and dismisses the case if the allegations are legally insufficient. Summary judgment motions are typically filed when discovery (see section on Discovery, below) has been completed, but before trial takes place. A judge is supposed to grant a summary judgment motion only if there is "no genuine dispute as to any material fact" [Fed. Rules Civ. Proced. 2014, 56(a)]. Although both plaintiff and defendant can move for summary judgment, this article generally assumes that the defendant is the party requesting summary judgment, because it is much more common for defendants to do so.

Dispositive motions present a relatively clear trade-off between direct costs and error costs. By terminating cases early, they reduce direct costs, such as the cost of discovery and trial. Whether they increase error costs depends on the standards used. If motions are granted only when the probability that the plaintiff will prevail at trial is zero or very low, then motions increase error costs by little or nothing. The standards for motions to dismiss and summary judgment could be interpreted, at least until recently, as assuring that such motions would be granted only when they would not increase error costs. Until 2007, motions to dismiss were granted when "it appear[ed] beyond doubt that the plaintiff can prove no set of facts in support of his claim which would entitle him to relief" (*Conley v. Gibson* 1957, pp. 45–46). That typically meant that federal judges granted motions to dismiss only when the validity of the complaint depended on an erroneous interpretation of the law. Similarly, even today, summary judgment is not supposed to be granted unless the parties have had full opportunity to gather relevant facts and then only if "no reasonable jury" could decide in favor of the party opposing summary judgment (*Anderson v. Liberty Lobby* 1986, p. 251).

However, Supreme Court decisions in the 1980s and 2000s suggest that motions are now sometimes granted when the plaintiff might have a meritorious case, and thus that error costs may be significant. Of course, even if the error costs induced by making these motions easier to grant are significant, they might still be justified by decreases in direct costs.

In three cases in 1986, often called the trilogy, the Supreme Court made it easier for parties, especially defendants, to get summary judgment (*Anderson v. Liberty Lobby*, *Celotex v. Catrett*,

*Matsushita v. Zenith*). Although these cases left the "no genuine dispute" and "no reasonable jury" standards intact, they altered the evidentiary burdens and more generally indicated that summary judgment is not "a disfavored procedural shortcut" (*Celotex v. Catrett* 1986, p. 327). In doing so, these cases are often interpreted as encouraging federal judges to grant summary judgment when the plaintiff's case is weak, even if it is still possible that a "reasonable jury" might decide for the plaintiff.

In cases decided in 2007 and 2009, the US Supreme Court dramatically changed the rules relating to motions to dismiss. Until then, federal courts were supposed to allow notice pleading. Under notice pleading, the plaintiff's complaint need only give the defendant some idea of what the case is about, and, as noted above, judges were not supposed to dismiss the case "unless it appears beyond doubt that the plaintiff can prove no set of facts in support of his claim which would entitle him to relief" (*Conley v. Gibson* 1957, pp. 45–46). In *Bell Atlantic v. Twombly* (2007) and *Ashcroft v. Iqbal* (2009), the Supreme Court gave federal judges the power to dismiss cases when the plaintiff's allegations are "conclusory" or "implausible." It is apparent that this standard will result in the dismissal of some meritorious cases, and thus that error costs will go up. The court was explicit that dismissal of some meritorious suits is justified by the avoidance of high discovery costs in cases in which the plaintiff might prevail but is unlikely to do so. That is, the court thought that tightening the pleading standards was justified by its sense that direct costs would go down by more than error costs would go up. The recent change in pleading standards has sparked both theoretical and empirical research on motions, and that research is the focus of this section. Summary judgment has been the subject of much less economic research, and it is discussed briefly at the end of this section.

## Empirical Work on *Twombly* and *Iqbal*

The Federal Judicial Center (FJC) found that motions to dismiss were filed in a greater percentage of cases after *Twombly* and *Iqbal* were decided (4.0% in 2005–2006 versus 6.2% in 2009–2010) (Cecil et al. 2011a, p. 9). Surprisingly, the increase was smallest in civil rights cases, which critics had thought would be most affected. Although the overall percentage of motions to dismiss granted went up from 66% to 75%, the effect was statistically significant only for cases involving financial instruments. Because *Twombly* and *Iqbal* were decided during the financial crisis of 2007–2008 and the global recession of 2008–2012, the increase in the grant rate for financial instrument cases was probably the result of macroeconomic conditions, not changes in the pleading standard. In addition, the increase in the grant rate was exclusively in dismissals with leave to amend. The percentage of cases dismissed without leave to amend actually went down from 45% to 40% (Cecil et al. 2011a, p. 14). Subsequent analysis (Cecil et al. 2011b, p. 4) followed cases that were dismissed with leave to amend to see whether amendments were actually filed and whether the amended complaints were also dismissed. It again found a statistically significant increase in dismissals only for cases involving financial instruments. For other sorts of cases, the percentage increase in successful motions to dismiss was only 2.5% and not statistically significant.

The FJC study suggested that *Twombly* and *Iqbal* had little effect on actual litigation. One possible explanation is that plaintiffs tended to plead much more than was required by notice pleading even before *Twombly* and *Iqbal*. There were many reasons for plaintiffs to do so. A complaint that was replete with facts was more likely to convince the defendant that the case was strong and encourage favorable settlement offers. More detailed pleadings could also convince the judge that the case was meritorious and thus make it more likely that the judge would rule favorably on discovery motions and other issues. Also, even before *Twombly* and *Iqbal*, many plaintiffs thought

that judges might dismiss conclusory or implausible complaints. In addition, cases in which the plaintiff did not have sufficient evidence to meet the higher pleading standard were probably rare even before *Twombly* and *Iqbal*, because rational plaintiffs and plaintiffs' lawyers would not have found it worthwhile to bring such risky cases (Hubbard 2016).

Gelbach (2012), however, argues that the FJC study misses the impact of *Twombly* and *Iqbal*, because it fails to take into account selection effects. *Twombly* and *Iqbal* changed not just how judges decided motions to dismiss but also which cases plaintiffs filed, which cases defendants made motions to dismiss in, and which cases were settled. Given these selection effects, if the same complaints and motions to dismiss had been filed before and after *Twombly* and *Iqbal*, the rate at which motions to dismiss were granted might have gone up considerably. The fact that the percentage of motions to dismiss granted did not go up could reflect the fact that plaintiffs filed stronger cases, that defendants filed motion to dismiss in cases that were unlikely to have been dismissed under notice pleading, and that parties settled cases that would otherwise have been dismissed. Through an ingenious empirical strategy, Gelbach (2012) estimates that at least 15.4% of employment discrimination cases, 18.1% of civil rights cases, and 21.5% of other nonfinancial cases in which a motion to dismiss was brought were adversely affected by *Twombly* and *Iqbal*. That is, in roughly 20% or more of cases subject to a motion to dismiss, the case was dismissed even though it would have gotten to discovery or would have settled had the Supreme Court not decided *Twombly* and *Iqbal*.

Hubbard (2016), however, notes that, even if Gelbach is correct, very few cases were negatively affected by *Twombly* and *Iqbal*, because motions to dismiss are filed in only approximately 5% of cases. Thus, Gelbach can only show that approximately 1% of all federal cases—5% of 15.4%, 18.1%, or 21.5%—were negatively affected. Nevertheless, because Gelbach's article provides only a lower bound on the effect of *Twombly* and *Iqbal*, it is possible that more than 1% of cases were negatively affected.

Hubbard (2013) uses standard settlement models to make predictions that are robust to selection effects and concludes that *Twombly* and *Iqbal* had no measurable effect. Under both the Priest & Klein (1984) divergent-expectations model and Bebchuk's (1984) asymmetric information model, Hubbard argues that stricter pleading standards should result in a greater number of dismissals, even though the motion-to-dismiss grant rate might not change. That is, Hubbard distinguishes between the dismissal rate (motions to dismiss granted divided by cases filed) and the motion-to-dismiss grant rate (motions to dismiss granted divided by motions to dismiss filed). The numerator in both rates is the same, but the denominator is different. Hubbard argues that selection effects mean that a change in pleading standards may have no effect on the motion-to-dismiss grant rate, but that it will still have an effect on the dismissal rate. Hubbard then uses a clever empirical strategy to ensure that the comparison of cases decided pre- and post-*Twombly* is not affected by plaintiffs responding to *Twombly* by filing only stronger cases: He looks only at cases filed before *Twombly* and compares those that had motions to dismiss decided before and after *Twombly*. Because all cases examined were filed before *Twombly*, and because *Twombly* was unexpected, the cases compared are similar in nearly every way except the motion-to-dismiss standard applied. As in the FJC studies, Hubbard finds that the motion-to-dismiss grant rate was unaffected, a fact that could be explained either by selection or by the hypothesis that *Twombly* had no effect. More importantly, Hubbard finds that the dismissal rate also remained unchanged, a fact that, according to Hubbard's analysis, points unambiguously to *Twombly* having no effect, even taking selection into account. Because data were not available at the time he wrote, Hubbard did not examine the effect of *Iqbal*. *Iqbal* may have been more influential than *Twombly*, because *Twombly* was sometimes interpreted to apply only to antitrust

and other complex cases, whereas *Iqbal* unambiguously applies to all federal cases. Hubbard is currently analyzing the effect of *Iqbal*, and preliminary results suggest that it too had no measurable effect.

Subsequent research has taken issue with the methods and conclusions of Cecil, Hubbard, and Gelbach. Eisenberg & Clermont (2014) use yearly data from the Administrative Office of the US Courts to calculate the "defendant pretrial judgment rate minus the plaintiff [pretrial judgment] rate" and argue that there was a large increase after *Twombly* and a smaller increase after *Iqbal*. However, Eisenberg & Clermont do not formally control for selection. Interestingly, they found that the largest effects were for pro se cases, which they argue may be particularly revealing about the real effect of *Twombly* and *Iqbal*, because, unlike sophisticated parties and lawyers, pro se litigants were unlikely to quickly adjust their filings to reflect the new legal regime. An alternative interpretation is that pro se litigants were less likely, prior to *Twombly* and *Iqbal*, to have pled with the factual detail that sophisticated lawyers realized was strategically advantageous, though not legally required. So *Iqbal* and *Twombly* may have actually affected pro se litigants much more than others. Reinert (2015) hand coded thousands of cases from PACER, excluding cases dismissed on grounds unrelated to *Twombly* and *Iqbal* (e.g., statutes of limitations or preemption), and found that there was a substantial increase in dismissals, especially for individual plaintiffs. Reinert also argues that *Twombly* and *Iqbal* have not succeeded in their primary goal, the dismissal of weaker cases so that litigant and judicial resources can be devoted only to stronger cases, because outcomes in the nondismissed cases do not reveal any improvement. Engstrom (2013) provides a useful summary and critique of the empirical research in this area. Cecil (2012) and Gelbach (2014a and 2015) defend their respective methodologies. Gelbach (2016) argues that one cannot use existing summary judgment data to determine whether *Twombly* and *Iqbal* have caused judges to more effectively screen out meritless cases.

Curry & Ward (2013) approach the pleading issues in a clever and novel way. If *Twombly* and *Iqbal* made it easier for defendants to get cases dismissed, one would expect more defendants to remove cases from state to federal court, especially when cases were filed in states that retained the notice-pleading standard. Curry & Ward found that "there was no systematic increase in the rate of removal after *Twombly* and *Iqbal*, and the effect was not more pronounced in notice-pleading states compared to fact-pleading states" (p. 829).

The work discussed so far naturally focuses on federal cases, because *Twombly* and *Iqbal*, although decisions of the US Supreme Court, are binding only on federal courts. Michalski & Wood (2015) exploit the fact that, although not required to do so, some state courts also raised their pleading standards. They look at a broad array of dependent variables, including filings, complaint length, number of claims, number of amended complaints, and motions to dismiss filed. Like Cecil et al. (2011a,b) and Hubbard (2013), they find no evidence that raising pleading standards had a significant effect.

The studies discussed so far, although sophisticated, do not really address the key economic questions. Do *Twombly* and *Iqbal* reduce direct costs? Do they increase error costs? Is the reduction in direct costs greater or less than the increase in error costs (Eisenberg & Clermont 2014)? Most researchers reasonably assume that *Twombly* and *Iqbal* reduce direct costs by preventing expensive discovery in some cases. It would be helpful to quantify those cost savings. More importantly, none of the studies look at the effect of the change in pleading standards on error costs. All of these studies look solely at litigation outcomes. As Campos et al. (2015) point out, changes in pleading standards may affect ex ante behavior. Individuals and corporations, anticipating that a larger number of meritorious suits will be dismissed at the pleading stage, may make less effort to comply with the law. The failure of empirical studies to detect effects of changes in the pleading standard may thus reflect two offsetting factors. First, as a result of lower compliance efforts,

the average case filed may be stronger, which, all other things equal, would suggest a lower dismissal rate. Second, stricter pleading standards would suggest, all other things being equal, higher dismissal rates. If these two effects were of similar magnitude, there would be no effect on the dismissal rate, even though higher pleading standards would have led to more law-breaking. Although Hubbard's (2013) methodology controls for this possibility, because it looks only at cases filed before *Twombly*, other studies cannot exclude this possibility.

## Theoretical Work on Motions

Posner (1973, p. 437) was generally favorable to the notice-pleading regime that prevailed in federal courts at the time he wrote. He thought that notice pleading reduced error costs by "reduc[ing] the number of meritorious cases dismissed because of a lawyer's oversight." Other law and economics scholars ignored pleading until the Supreme Court decided *Twombly* in 2007.

Shortly after *Twombly* was decided, Hylton (2008) explored the connection between pleading and summary judgment standards. He took the divergent expectations model of suit and settlement and added both effects on ex ante behavior and multiple stages. An implication of his model is that when summary judgment standards are rigorous, as they were in antitrust, then pleading standards should be similarly rigorous. This conclusion supported the Supreme Court's decision in *Twombly*, which heightened the pleading standard and applied the new standard to an antitrust case.

Issacharoff & Miller (2013) suggest a middle road between notice pleading and the more recent plausibility standard required by *Twombly* and *Iqbal*. If the defendant files a motion to dismiss, and the plaintiff asserts that she cannot respond without facts in the defendant's possession, then the judge should allow limited discovery solely to permit the plaintiff to gather the facts needed to meet the plausibility standard. If, after that discovery, the plaintiff is unable to amend her complaint to meet the plausibility pleading standard, then the plaintiff must reimburse the defendant for reasonable costs incurred in making the motion and responding to the pleading-related discovery. However, if the plaintiff is able to gather information allowing her to amend her complaint to meet the plausibility pleading standard, then the defendant must reimburse the plaintiff for her costs relating to the motion to dismiss and pleading-related discovery. Issacharoff & Miller argue that their proposal would reduce the number of meritorious cases dismissed and reduce costs by harnessing the litigants' private information. If a defendant knew that the plaintiff would discover information allowing her to successfully amend her complaint, the defendant would not make a motion to dismiss. Similarly, if the plaintiff were not sufficiently confident about the merits of her case, she would not seek discovery and might not even file suit in the first place. For a similar proposal involving limited presuit discovery and fee shifting, see Chapter 5 of Dodson (2013).

Kaplow (2013) provides a more general analysis. He asks three principal questions: How many litigation stages should there be? How should stages be sequenced? And what standard should be applied at each stage? The optimal number of stages depends on a trade-off between the general benefits of splitting issues, pointed out by Landes (1993), and the cost synergies of deciding issues together. If there were no synergies, it would generally be better to decide issues in sequential stages, because if it turned out that an issue necessary for one side could be decided against that party, the case could be terminated and all other expenditure eliminated. However, issues are often so closely related that it is cheaper to resolve two at the same time rather than separately. The optimal number of stages therefore trades off the possible savings from terminating a case quickly and the savings from resolving issues together. If issues are separated, it makes sense to consider those with "a higher diagnosticity/cost ratio" first (Kaplow 2013, pp. 1225–28). That is, issues that can be resolved cheaply and that provide much information about the ultimate merits of the case should be decided first.

Kaplow's recommendation that issues should often be decided sequentially lends support to the civil law approach to procedure, in which the judge has discretion to consider issues in multiple hearings. Such a system is in tension with the American idea that juries should decide disputed issues, because juries typically sit for a single concentrated trial, and it is not practical to expect them to attend multiple hearings spread out over several months. However, even American civil justice allows for partial summary judgment, which has some aspects of the multiple-hearing approach of civil law countries. Considering issues with high diagnosticity/cost ratios first also supports the current American practice of encouraging early motions to dismiss for failure to state a claim. Such motions are relatively cheap, because they involve only analysis of the pleadings rather than collection and evaluation of evidence. In addition, especially in the pre-*Twombly* era, they were highly diagnostic, because they were granted only when the law indicated that the plaintiff had no valid cause of action.

Reilly (2015) suggests a reform of patent litigation in the spirit of Kaplow's analysis. Judges would initially allow discovery relating only to patent validity and infringement, and they would decide those issues before allowing discovery relating to remedies. This division of the case would enhance efficiency: Patent validity and infringement require relatively little discovery, whereas a holding of invalidity or noninfringement would obviate the need for resolution of remedial issues, which are much more costly to resolve, because they are more discovery intensive. Invalidity and infringement thus have high diagnosticity-to-cost ratios, so it makes sense to resolve them first. There is also relatively little overlap between discovery relating to validity and infringement (which involves mostly easily accessible documents and limited expert discovery) and discovery relating to remedial issues (which relies more heavily on depositions and extensive document searches). So, if the case goes to the second phase, division into two stages would have added relatively little cost.

As to the standard that should be applied in deciding whether a case should be terminated at each stage, Kaplow's analysis depends on the gains in deterrence from gathering more information, the increases in chilling costs (deterrence of beneficial acts), and the cost of continuing. Kaplow suggests that his analysis is not inconsistent with the court's decisions in *Twombly* and *Iqbal*, because those decisions rejected notice pleading (which put almost no weight on chilling costs or the costs of continuing) and because the court adopted a contextual, consequential approach that took into account both costs and chilling.

Shavell (2014) asks an even more fundamental question: Why have motions at all rather than leaving it to the judge to request information and make decisions as she thinks best? That is, a basic characteristic of motions is that the parties request that a particular issue be decided at a particular time. In contrast, civil law systems rely much less on party initiative and instead give the judge control over which issues to consider. Shavell argues that, in a world in which litigants are much better informed about the case than the judge, motions save costs, because litigants can be incentivized—see Issacharoff & Miller (2013)—to make motions only when their private information suggests that they will be worthwhile. In contrast, an uninformed judge is likely to waste resources pursuing issues that are unlikely to be informative. Note, however, that this argument assumes that the party with the incentive to bring the motion has the relevant information. If information is known only by the party that would be harmed by the motion, or if neither party has the information, relying on motions would result in suboptimal decision making. In this respect, Shavell's conclusions implicitly assume thorough discovery, by which the party with an incentive to bring the motion can acquire the information necessary to make the motion. In legal systems, such as those in most civil law countries, where parties do not have the right to extensive discovery, reliance on motions may not be efficient.

## Summary Judgment

There has been remarkably little economic analysis of summary judgment. This is especially surprising because summary judgment is much more common than motions to dismiss for failure to state a claim (Eisenberg & Lanvers 2009, p. 128). Posner (1973, p. 435) said almost nothing about summary judgment other than that it is one of "many familiar procedure devices [that] appear to be designed, in part at least, to reduce the expense of litigation." Issacharoff & Loewenstein (1990) analyze the effects of the trilogy of Supreme Court cases decided in 1986 that made it easier for courts to grant summary judgment. Issacharoff & Loewenstein (p. 109) conclude that these decisions may, surprisingly, increase litigation costs by reducing settlement. In addition, they express concern that the trilogy may inhibit the filing of meritorious suits and result in a "wealth transfer from plaintiffs to defendants." Kaplow (2013) discusses summary judgment as part of his more general treatment of multistage adjudication and concludes that the Supreme Court's trilogy is sufficiently open-ended to allow consideration of the factors that he thinks should influence resolution of such motions (deterrence, chilling, and litigation costs).

Using Administrative Office of the US Courts data from six districts and six years between 1975 and 2000, Cecil et al. (2007) conclude that the 1986 summary judgment trilogy had little effect on outcomes, because increases in summary judgment rates largely preceded the landmark Supreme Court decisions. Using more comprehensive yearly data from the same source and their preferred measure—the defendant pretrial judgment rate minus the plaintiff pretrial judgment rate—Eisenberg & Clermont (2014) argue that the trilogy accelerated the preexisting prodefendant trend. Gelbach (2014b) critiques other summary judgment studies for failing to take into account the way the parties adjusted their behavior to the trilogy—plaintiffs changing which cases they file, defendants changing the criteria for selecting which cases they will file summary judgment motions in, and both parties adjusting their settlement demands. Using data from 2005, Gelbach (2014b) analyzes the extent to which judge characteristics—sex, race, ethnicity, and appointing president—affect the probability that a litigant will file a motion for summary judgment. The patterns observed, however, suggest that both plaintiffs and defendants responded strategically to the trilogy, because the results comport neither with naïve predictions (that litigants, primarily defendants, would file fewer summary judgment motions in cases assigned to judges with characteristics associated with liberalism) nor with slightly more sophisticated models that take into account strategic behavior by defendants (but not plaintiffs).

# DISCOVERY

Discovery is a distinctive feature of American litigation. Since the early twentieth century, a litigant in an American court has had the power to force his opponent to reveal information before trial. A litigant can request documents, pose specific questions (interrogatories), inspect land and other things in the opponent's possession, and even require a party to subject himself to a physical or mental examination by a doctor chosen by the requesting party. In addition, lawyers can depose (interview under oath) persons who might have information about the disputes. Most of this discovery activity is done without the participation, supervision, or even particularized permission of the judge. In general, judges are involved only when a party fails to comply with a discovery request and the requesting party seeks judicial assistance.

The principal alternative to American-style discovery is the civil law system, of which German procedure provides a paradigmatic and much-studied alternative (Langbein 1985, Murray & Stürner 2004). Under the German system, there is no distinction between discovery and trial, and the judge, rather than the parties, conducts the fact finding across as many hearings as the

case requires. The judge can request documents and interview witnesses, but the parties have no right to do so. In general, German judges are less aggressive in investigating civil cases than American lawyers. In part, this reflects the fact that judges have limited time. It also reflects greater cultural sensitivity to privacy concerns and the idea that private litigation is not generally the appropriate means by which to ferret out hidden wrongdoing. American-style discovery has been very controversial. Defenders laud its ability to compel the disclosure of information and thus increase accuracy and deterrence. Opponents decry its high cost and potential for abuse.

Over the past forty years, scholars have developed sophisticated models of discovery and conducted extensive empirical research. Unfortunately, it is still far from clear whether American-style discovery is worthwhile. Models of discovery make so many simplifying assumptions that they may not shed light on the core issues, and their conclusions vary widely depending on their assumptions. Empirical work on discovery has made progress in quantifying the costs of discovery but has provided no estimate of its benefits. Without data on both costs and benefits, it is hard to know whether discovery is worthwhile, not to mention how and whether it should be reformed.



## Theoretical Work on Discovery

The economic analysis of discovery, as with the economic analysis of procedure more generally, starts with Posner (1972, Chapter 24; 1973). Posner argues that discovery generally increases accuracy and promotes settlement. Discovery increases accuracy and thus decreases error costs in two ways. First, without discovery, a party might refuse to share information so that it can surprise the other side at trial and thus gain a tactical advantage. Discovery, by forcing the pretrial sharing of information that each side would present at trial, enables each side to prepare better and thus to ensure that the factfinder (judge or jury) makes a decision based on the best arguments each side could present. Second, without discovery, a party would often be able to prevent the factfinder from knowing adverse information that was solely in its possession. By forcing parties to disclose evidence that would not otherwise have been presented at trial, discovery helps the factfinder to make decisions based on more complete information.

Posner (1972, Chapter 24; 1973) used the divergent-expectations model of settlement that he, Landes, and Gould had developed to predict that discovery would generally encourage settlement. Under the divergent expectations model, parties settle when the difference in their estimates of the expected value of the suit is smaller than the litigation costs they could save by settling. As a result, the primary impediment to settlement is mutual optimism, the fact that the plaintiff might have an unrealistically high estimate of the value of the suit and/or that the defendant might have an unrealistically low estimate of its likely liability. By making the information that would be presented at trial common knowledge, discovery usually lessens the difference in the parties' estimates of the expected value of the suit and thus increases settlement.

Like much of the later literature, Posner's work is interested in whether discovery increases settlement. Nevertheless, this focus on settlement is puzzling, because increasing settlement is not valuable in itself. It can be valuable because it reduces litigation costs. However, discovery itself is expensive. As a result, even if discovery increases settlement, it almost certainly increases total litigation costs. Thus, even if discovery encourages settlement, its social value must rest primarily on its ability to increase accuracy and thus reduce error costs.

Starting in the late 1980s, scholars developed increasingly sophisticated models of discovery. Unfortunately, although these models have highlighted important issues, they have not significantly enhanced our understanding of discovery for two reasons. First, conclusions differ radically depending on modeling assumptions, such as which side has private information and whether the plaintiff or defendant makes the settlement offer(s). Second, and perhaps more importantly, with

the exception of those of Hay (1994) and Schrag (1999), all of the models assume that discovery does not affect the probability that the plaintiff prevails at trial. That means that the models ignore two of the most important effects of discovery. First, they ignore the fact that discovery forces parties to reveal adverse information that would otherwise have remained unknown to the factfinder. Because this type of information has a potentially large positive effect on accuracy and thus on ex ante incentives, the fact that models of discovery ignore it is deeply problematic. Second, the assumption that discovery does not change the plaintiff's probability of prevailing means that these models do not take into account the fact that sharing information before trial gives the opposing party time to prepare a response to it. By not taking into account this effect, models of discovery tend to overstate the extent of voluntary disclosure and thus to understate the effect (and potential benefit) of discovery.

The first models of discovery were those of Sobel (1989) and Shavell (1989). Sobel models litigation as a problem of double-sided asymmetric information in which parties play a signaling game. He assumes that discovery would require the defendant to reveal information to the plaintiff (but not vice versa) (pp. 141, 149, 155–56). In this model, discovery generally leads to a higher probability of settlement and to higher plaintiff recoveries (pp. 147, 154, 157). Sobel also uses his model to argue that parties will not voluntarily reveal their information (pp. 146, 153), so information exchange, if beneficial, must be legally mandated. One might have thought that the classic unraveling result would obtain and those with information favorable to themselves would disclose voluntarily. Nevertheless, Sobel shows that, when disclosing information is expensive, unraveling may not occur (pp. 153–54).

Shavell (1989) uses a screening model in which the plaintiff is fully informed and the defendant knows only the distribution of plaintiff types. In this model, if plaintiffs can reveal their types, all but the weakest plaintiffs do so voluntarily, and all cases settle. Discovery does not increase the settlement rate (because all cases settle anyway), but it does increase the accuracy of settlements, because it allows defendants to distinguish among weak plaintiffs (p. 189). Shavell also discusses a model in which some plaintiffs cannot reveal their types, because the information will not be available until trial. Under this model, discovery can increase the settlement rate. Nevertheless, this modified model is unrealistic, because parties can always settle once information becomes available, even if there is no discovery and even if information becomes available at or shortly before trial.

Cooter & Rubinfeld (1994) work with the divergent expectations model of settlement, rather than the newer asymmetric information models favored by Shavell and Sobel. Using this model they show that, to the extent that discovery reveals information adverse to the disclosing party, discovery can reduce settlement by making the side that benefits from the information more optimistic about its likely success at trial. Nevertheless, discovery might still be good, because it increases the accuracy of settlements and thus provides better incentives for efficient ex ante behavior. In a short section, the authors discuss the possibility that discovery might also enhance the accuracy of trials by eliminating surprises, but they do not model or analyze this important aspect of discovery in depth (p. 446). Cooter & Rubinfeld (1995) extend their analysis to the mandatory disclosure (sharing of key information without a specific request by the opposing party) required by the 1993 Amendments to the Federal Rules of Civil Procedure and predict that this reform will decrease settlement and increase the number of suits filed (pp. 85, 88).

Hay (1994) explores the way discovery forces the revelation of information that would otherwise remain hidden. Unlike other modelers of discovery, he is interested exclusively in the effect of discovery on ex ante behavior and completely ignores settlement in his formal analysis. He also does not explore the strategic interaction between the parties. He does, however, show that the social value of discovery depends both on the cost of discovery and on the extent to which agents

are close to the margin between behaving efficiently or not. Hay thus links his analysis of discovery to Shavell's (1997) work on the divergence between social and private incentives in litigation by showing that it is possible that parties might do either too much discovery or too little, because the private benefit of discovery is the extent to which it affects a party's probability of prevailing at trial, whereas the public benefit relates to the way discovery provides incentives for more efficient ex ante behavior. Because the private benefit may be larger or smaller than the public benefit, private incentives to conduct discovery may be excessive or insufficient. For further application of Shavell's "fundamental divergence" to discovery, see Gelbach & Kobayashi's (2015) analysis of rules requiring "proportionality."

Schrag (1999) explores the implications of a very interesting model in which discovery affects trial outcomes. Unlike Hay (1994), he explicitly models the strategic interaction between the litigants and explores the effect of discovery on settlement. In his model, discovery discourages settlement. For example, if the plaintiff made an offer before discovery that was low enough that one might think negligent (but not careful) defendants would accept it, it would not be rational for all negligent defendants to accept the offer, because if all negligent defendants accepted the offer, the plaintiff would assume that those who did not accept the offer were not negligent and thus would conduct little discovery. Rational negligent defendants would therefore reject the settlement offer so they could pool with nonnegligent defendants, be subjected to less discovery, and thus incur lower liability if the case went to trial. As a result, it is not rational for the plaintiff to make an offer that all negligent defendants would accept, so the parties incur the expense of discovery and trial. In this model, unlike in Hay's (1994), unregulated discovery always leads to excessive discovery. As a result, "managerial judges" can both reduce costs and preserve deterrence by limiting the amount of discovery both sides conduct.

There are several other models of discovery. Mnookin & Wilson (1998) take a mechanism design approach and show that, under certain conditions, the amount of discovery might be efficient. Farmer & Pecorino (2005) explore the effects of costly discovery on both the screening and signaling models and find that parties voluntarily disclose in the signaling model but not in the screening model. Farmer & Pecorino (2013) show that endogenizing litigation effort (spending) can lead to unexpected results, such as weak parties voluntarily disclosing and uninformed parties refusing costless discovery. Nevertheless, for reasons discussed above, the models in these papers shed limited light on the real world of litigation, because they assume that discovery has no effect on trial outcomes.[1] They therefore ignore the way discovery prevents trial surprises and forces parties to reveal information that would otherwise remain hidden. It would be helpful if theorists continued the work of Hay (1994) and Schrag (1999) and explored the implications of discovery that provides new information to the factfinder.

## Empirical and Experimental Research on Discovery

Most empirical work on discovery involves surveys. Surprisingly little research measures the effect of particular discovery reforms or practices using regression analysis or other techniques to identify causation. Most surveys suggest that discovery usually works reasonably well, although there may be a subset of particularly complex cases where discovery costs are very high and abusive behavior is more common.

[1] Farmer & Pecorino (2013) found that information disclosed voluntarily or through mandatory discovery has no direct effect on trial outcomes, but it does have an indirect effect by influencing how much each party spends on litigation.

The most informative research on discovery may be that of Huang (2009), which analyzes the introduction of discovery in Taiwan in 2000. The 2000 reform required early disclosure of information a party would use at trial ("the plenary oral-argument session"). The reform did not, however, give parties the ability to uncover adverse information through depositions and only modestly increased their ability to request documents (pp. 251–53). For unexplained reasons, in the four years before discovery was introduced, settlement rates fell by approximately 7%. In the six years after discovery was introduced, the downward trend reversed and settlement rates increased by approximately 3%. The author concludes that the introduction of discovery increased the settlement rate.

Wayne Brazil (1980a,b) surveyed 180 Chicago-area litigators. He found that discovery seems to work much better in small cases than in large ones. For example, 31% of those working on small cases (median case size of $25,000 or less) had "clearly positive" views of discovery, whereas only 7% of those who handled large cases (median case size of $1,000,000 or more) had clearly positive views. Conversely, only 23% of small case lawyers had clearly negative views of discovery, compared with 43% of large case lawyers (Brazil 1980a, p. 803). Lawyers dealing with small and large cases had similarly divergent views on the effectiveness of discovery in forcing disclosure of adverse information. Small case lawyers thought that opposing counsel settled cases without knowing "something arguably consequential" approximately one quarter of the time, whereas approximately half of large case lawyer expressed that belief (1980a, p. 811). Figures for tried cases were lower, but still very different for small and large cases (1980a, p. 814). The cost of discovery was also more of a concern for large case lawyers than for small case lawyers (1980b, p. 234). Interestingly, most lawyers, including 82% of large case lawyers, favored "greater judicial involvement in discovery" (1980a, p. 865). Lawyers criticized judges for being too passive and for being too reluctant to sanction misbehavior (1980a, p. 866).

In 1997, the FJC, at the request of the Advisory Committee on Civil Rules, conducted a survey of attorneys in 1,000 closed cases (Willging et al. 1998). It found that discovery generally worked well and at reasonable cost. For example, both the median and mean ratios of discovery expenses to total litigation costs were 50%, and median discovery expenses were only 3% of the amount at stake (pp. 548–49). Most attorneys thought costs were "about right" and that discovery produced "about the right amount of information needed for a fair resolution" of the case (pp. 551–52). Attorneys opined that only 13% of discovery expenses were "incurred unnecessarily because of problems in discovery" (p. 556). Of course, without more information about the benefits of discovery, it is unclear whether discovery costs are too high. In addition, lawyers, who benefit from the increased spending on discovery, are not in a good position to decide whether the level of expenditure is appropriate.

In 2009, the FJC conducted another, similar survey (Lee & Willging 2009). Surprisingly, discovery costs seemed to have gone down over the preceding twelve years. For example, median discovery expenses were now only 27% of total litigation costs (p. 39) and 1.6% of stakes for plaintiffs (although still approximately 3% for defendants). These results are remarkable, because between 1997 and 2009 electronic discovery had become much more common. Many people had complained that discovery of email and other electronically stored information was much more expensive, in large part because there was so much more of it. Nevertheless, the FJC found that electronic discovery accounted for only 5–10% of discovery expenses. Of course, the fact that electronic discovery does not seem to be problematic generally does not exclude the possibility that it may be extremely burdensome in some cases.

Further research by the RAND Institute for Civil Justice has focused on electronic discovery (Pace & Zakaras 2012). They found that locating and gathering electronically stored information

was relatively cheap and that the major cost was review for relevance, responsiveness, and privilege (p. xiv), which had to be done whether documents were stored electronically or kept in paper form. Pace & Zakaras (2012, pp. xvii–xviii) also suggested that human review of documents was highly inconsistent and speculated that automating document review through predictive coding could both reduce costs and increase accuracy. In addition, preservation of data and protection from automated deletion were unexpectedly costly (p. xx). Hubbard (2015) also emphasized the importance of preservation costs.

Although the FJC survey suggests that discovery works reasonably well, other surveys present a much less rosy picture. A 2009 survey by the American Bar Association found that 82% of lawyers thought that discovery was too expensive and more than half believed that "discovery is commonly abused" (Am. Bar Assoc. 2009, p. 2). Similarly, a survey of elite lawyers, fellows of the American College of Trial Lawyers (ACTL), found that less than half (44%) thought that "current discovery mechanisms work well" (ACTL-IAALS 2008, p. A-4). As a result, their final report recommended sweeping restrictions on discovery, most importantly, that after initial disclosures and "limited additional discovery," further discovery should not be permitted without party agreement or a judicial finding of "good cause and proportionality" (ACTL-IAALS 2009, p. 9). The more negative assessment in this report may reflect Brazil's (1980b) observation that discovery seems to work better in small cases than in large cases. Because the lawyers surveyed in the ACTL–Institute for the Advancement of the American Legal System (IAALS) report were more likely to handle large cases, it is not surprising that their assessment was more negative.

There is surprisingly little empirical work evaluating particular changes to discovery rules. In 1998, the RAND Institute for Civil Justice conducted an evaluation of discovery management under the Civil Justice Reform Act (Kakalik et al. 1998). Like the work of the FJC, it did not corroborate anecdotal evidence of "widespread abuse of discovery" (p. xv). Discovery accounted for between a quarter and a third of attorney time in litigated cases (p. xx). Although complex cases required lawyers to devote more time to discovery, the percentage of lawyer time consumed by discovery was not significantly different in larger cases (p. xx). Early judicial case management significantly reduced time to disposition but also increased the number of hours lawyers had to work on the case, although the effect on hours worked was not robust to regression analysis (pp. 44–46, 105). Early mandatory disclosure of information—sharing of key information without a specific request by the opposing party—was not found to reduce lawyer time or delay (pp. xxiv–v, 49–51). Similarly, other discovery reforms—such as "requiring good faith efforts to resolve discovery disputes before filing discovery motions" or limiting interrogatories—were similarly found to have little effect (pp. 53–57), although limiting the time for discovery did reduce attorney hours spent on discovery and time to disposition (pp. 59–60). Whether the shorter discovery period reduced the amount of information exchanged and thus accuracy was not studied, although lawyers did not report decreased satisfaction (p. 60).

Whereas most empirical work on discovery analyzes its effect on litigation (e.g., settlement rates, litigation costs, time to disposition), Miller & Tucker (2012) analyze its effect on the adoption of electronic medical records. They find that state rules "that facilitate the use of electronic records in court" reduce the likelihood that hospitals will adopt electronic medical records. This investigation of the ex ante effect of discovery rules is laudable. Nevertheless, the particular implementation is problematic, because Miller & Tucker look only at codified rules related to the discovery of electronic information (p. 4) rather than at judicial decisions and precedents, which are likely to be at least as important. Nevertheless, the likely consequence of looking at only codified rules is to understate the effect of electronic discovery.

Pecorino & Van Boening (2004) use experiments to investigate the effect of discovery and show that, as predicted by Shavell (1989), plaintiffs with strong cases tend to reveal their private

information to the defendant (p. 142). This disclosure dramatically increases the settlement rate, although, contrary to the work of Shavell (1989), even with disclosure barely half of cases settle (p. 152). Note, however, that this experiment did not give parties the ability to force their opponents to disclose information. It simply provided the plaintiff a credible way to voluntarily disclose information.

## JURISDICTION

Jurisdiction is the power of a court to decide a case. There has been relatively little economic analysis of jurisdiction, and most of the analysis that has been done has focused on personal jurisdiction, sometimes called adjudicatory jurisdiction. Personal jurisdiction allocates cases to courts on a geographic basis. It is the legal doctrine that decides whether a state—whether an independent country, like France, or an American state, like California—can issue a legally valid judgment. Traditionally, jurisdiction lay with the state or states with the power to enforce a judgment. Therefore, for example, jurisdiction was always proper in the place where an individual resided or was a citizen or in the state where a corporation was incorporated or had its principal place of business. Starting in the twentieth century, with the expansion of interstate business, these rules were loosened, and individuals and businesses became subject to jurisdiction wherever they did business or performed other activities. In the United States, the constitutional test for jurisdiction is whether the defendant "purposefully availed itself" of the benefits of the state (*McIntyre v. Nicastro* 2011, p. 2790).

The economic analysis of jurisdiction is relatively new. Most economic analysis focuses on litigation costs. For example, both Posner (2014, pp. 927–28) and Miller (2013, 2014) defend existing jurisdictional rules on the grounds that they usually select a forum where litigation costs are likely to be the lowest or at least constrict the plaintiff to choosing among fora with relatively low litigation costs. In general, litigation that takes place close to the plaintiff's and/or defendant's usual residence or principal place of business, and/or is close to the residence of witnesses, will have lower costs. Buehler (2012) argues that it is also necessary to take into account the cost of litigating jurisdictional issues and that the law could be made more efficient by loosening the constitutional constraints that can make jurisdictional disputes in the United States so complicated.

Whereas most economic analysis of jurisdiction has focused on litigation costs (direct costs), Klerman (2012, 2014, 2015) suggests that jurisdiction can also affect error costs, because jurisdictional rules may give judges and legislators incentives to develop efficient or inefficient rules and institutions. Bad jurisdictional rules give states incentives to develop rules and institutions that transfer wealth from out-of-state residents to residents of the forum. For example, if the jurisdictional rule were that plaintiffs always sued in their home state, all cases would involve in-state plaintiffs, and some would involve out-of-state defendants. As a result, state judges and legislators could redistribute wealth from out-of-state defendants to forum residents by tilting procedure, choice of law, or substantive law in an inefficiently pro-plaintiff direction. Jurisdictional rules could have a similarly inefficient redistributive effect if jurors or trial judges were biased against nonresidents. Conversely, a jurisdictional rule that required litigation in the defendant's home state would encourage rules and adjudication that were biased against out-of-state plaintiffs. This biased adjudication would give parties suboptimal incentives and thus increase error costs.

These redistributive tendencies, however, may be tempered when parties can avoid states with biased courts. So, for example, a state would not want to be biased against out-of-state corporations that located factories in the state, because the state would not want to discourage companies from locating in state, nor would it want to give the companies currently operating in the state an incentive to leave. For this reason, the purposeful availment requirement currently applied in the

United States may promote efficient adjudication by restricting jurisdiction to states in which the defendant has a credible threat to exit and potential future defendants have the option of avoiding the state.

Rules that give plaintiffs too much leeway in the choice of forum also have a pernicious effect on courts' incentives to develop efficient laws and institutions. Although loose jurisdictional rules are often criticized as encouraging forum shopping, the reason forum shopping is problematic is not usually well specified. Klerman (2012, 2014) and Klerman & Reilly (2016) suggest that the problem with forum shopping is that it encourages forum selling. If judges or legislators in even a few jurisdictions want to benefit lawyers and others who profit from litigation, they have an incentive to tilt the law in a pro-plaintiff way, because plaintiffs generally choose the forum. Such forum selling can be seen in a variety of contexts, most notably in the efforts of the Eastern District of Texas to attract patent litigation by routinely denying summary judgment motions, denying motions to transfer to a more convenient forum, and managing discovery and trials in ways that disadvantage defendants (Anderson 2015, Klerman & Reilly 2016).

In the class action context, rules that give plaintiffs a wide choice of forum can, paradoxically, work to the defendant's advantage. When plaintiffs can file in multiple fora, rival plaintiffs' lawyers may file overlapping class actions in multiple courts. However, by virtue of the doctrine of res judicata, the defendant can terminate all of the cases by settling just one of them. As a result, the defendant can set up a reverse auction in which plaintiffs' lawyers compete to be the first to settle. The lawyers who settle first are awarded attorney fees in the settlement or by the presiding judge. Those who do not settle, however, get nothing. As a result, the defendant can pit the plaintiffs' lawyers against each other and extract a low settlement that may not reflect the case's true merit (Coffee 1995, Klerman 2014). Unfortunately, other than the case studies in Klerman & Reilly (2016), there has been no empirical work on jurisdiction.

## CONCLUSION

Economic analysis has shed considerable light on procedural issues. Reducing the evaluation of procedural rules to trade-offs between direct (litigation) costs and error costs (accuracy) has provided clarity to normative analysis and has allowed rigorous modeling of many procedural issues. Unfortunately, theoretical analysis is usually ambiguous and suggests that the optimal rule depends on the magnitude of direct and error costs. Empirical work is thus essential to the design of efficient procedure. Nevertheless, very few researchers have tried to quantify error costs by measuring the way procedural rules affect ex ante behavior. That, however, is the necessary next step.

## DISCLOSURE STATEMENT

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**Errata**

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