

Allocating the Burden of Proof

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I. INTRODUCTION

Who should bear the burden of proof in an adversarial dispute? Consider the following hypothetical case. *A* sues *B*, seeking some relief. There exists some information (evidence) indicating whether *A* has a valid claim against *B*, but the court can only acquire the information if it is presented by one of the parties. Who, as between the parties, should have to present the information? Should *A* be required to demonstrate that she is entitled to recover from *B*? Or should *B* be required to demonstrate that *A* is *not* entitled to recover from *B*?

This problem arises in any setting in which a person or group is given authority to adjudicate disputes. Examples include not only courts and arbitration tribunals, but also firms with internal grievance procedures. In these settings and others, two features suffice to raise the burden of proof problem: (1) relief is granted or denied based on the facts of the dispute;¹ and (2) the adjudicator depends at least in part on the parties to come forward with information about the facts.²

In this Article, I analyze this problem with a model of litigation that incorporates the decision to file suit, the decision to present evidence in adjudication, and the possibility of an out-of-court settlement. My objective is to see how the burden of proof should be allocated, where the social objective is to minimize the total social costs associated with dispute resolution—which encompass both the costs of processing disputes and the costs of erroneous outcomes. Using the model, I attempt to describe parties' equilibrium behavior under different burden of proof allocations, and then to assess the optimal burden of allocation in light of this behavior.³ In addition, I attempt to identify the features of a case that favor putting the burden on one party or the other, and to explain some of the principal burden of proof allocation rules found in practice.

The analysis proceeds in three basic stages. In the first, I pose a simple question: why would we *ever* assign the burden of proof to the plaintiff in a

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1. As contrasted, say, with a system in which the parties are made to split the difference in every case (or in which the dispute is resolved by flipping a coin, by jousting, or by reference to some other criterion unrelated to the facts).

2. As compared to a system in which the adjudicator takes all responsibility for gathering the facts, with the parties playing a passive role.

3. The model employed here builds on a separate project in which Kathryn Spier and I examine the use of burdens of proof to minimize the costs of resolving a dispute that has been brought to court. See Bruce L. Hay & Kathryn E. Spier, *Burdens of Proof in Civil Litigation: An Economic Perspective*, 26 J. LEGAL STUD. (forthcoming, summer 1997). The present model focuses on three elements not explicitly considered in the other project: (1) the decision to sue; (2) the possibility of settlement out of court; and (3) litigant uncertainty concerning the merit of a claim. As the analysis to follow will make clear, a consideration of these elements is critical to understanding the effects and optimal use of the burden of proof.

dispute? In practice, of course, the plaintiff is almost always assigned the burden of proof; the apparent justification for this is that it conserves legal resources by ensuring that the law's "cumbrous and expensive machinery"⁴ is not put in motion unless it is shown to be warranted. Some simple economic logic suggests, however, that this justification has things exactly backwards: if the aim is to conserve resources, it would seem preferable generally to give the burden of proof to the *defendant*. A plaintiff has no incentive to bring a claim she knows lacks merit, if she expects to go to trial. If most claims that are filed are meritorious, then it makes no sense to require the plaintiff to prove a given claim's merit; better to require the defendant to prove it lacks merit (which he will not waste time doing if it is in fact meritorious). This reasoning casts sufficient doubt on conventional wisdom to justify a closer look at the burden allocation problem with the use of a rigorous model.

Analysis of the model suggests that either of two considerations might warrant giving the burden of proof to the plaintiff. These are: (1) the possibility that the plaintiff is uncertain of the merit of her claim when she files suit; and (2) the possibility that the parties may settle the claim out of court. Under either of these conditions, the plaintiff might rationally file a claim that is not, in fact, meritorious—either because she does not know it lacks merit, or because she knows it lacks merit but hopes to extract a settlement from the defendant. For this reason, there is a potential argument (how strong requires further analysis) for giving her the burden of proof. The focus of our investigation, then, will be the allocation of the burden of proof under conditions where litigants may be uncertain of the merit of a claim or where they may settle out of court.

In the second stage of the Article, I consider the costs of giving the burden to one or the other party under either condition. In particular, I attempt to identify the major properties or "parameters" of a case that determine the costs of giving the burden of proof on a particular issue to the plaintiff or to the defendant. Analysis of the model indicates that the following parameters are of principal importance in determining the optimal burden assignment: a given party's costs of presenting evidence to support her position, the probability that this party's position is correct, that party's costs of presenting evidence, the amount at stake for the party, and the social cost of an erroneous decision against the party. Analysis of the model also indicates that the greater the magnitude of any of these factors, then—in the presence of either litigant uncertainty or the possibility of settlement—the greater the costs of giving that party the burden of proof.

In the third stage, I use the preceding analysis to develop some tentative conclusions about the optimal allocation of the burden of proof. In general, I suggest, the four factors just alluded to will be aligned in such a way as to support a default rule in favor of allocating the burden of proof to the plaintiff; departures from this default rule would be justified if one or more of the factors

4. OLIVER WENDELL HOLMES, *THE COMMON LAW* 77 (Mark DeWolfe Howe ed., Belknap Press of Harvard University 1963) (1881). Holmes in this passage was speaking of the general principle that the state should not intervene in private affairs unless a good reason can be shown for doing so.

strongly pointed toward the opposite allocation. Drawing on a brief examination of familiar judicial practices in assigning the burden, I suggest that the model's prescriptions seems to correspond in broad outline to what is observed in practice.

The Article is organized as follows. Part II introduces the framework of analysis by describing a simple model of litigation. In Part III, I use the model informally to show that the traditional justification for giving the plaintiff the burden is incomplete; to make sense of such an allocation, we must examine carefully how the burden of proof operates under conditions where litigants are uncertain of a claim's merit and where out-of-court settlement is possible. In Part IV, I examine the allocation problem when litigants are uncertain of a claim's merit, and attempt to identify the major determinants of the costs of a given allocation. In Part V, I examine the allocation problem when out-of-court settlement is possible. Part VI then uses this analysis to discuss the optimal burden allocation.

II. FRAMEWORK OF ANALYSIS

A. The Dispute Resolution Setting

Consider the following very simple three-stage model of a civil dispute. (See Figure 1.) The plaintiff initially decides whether to file a claim for relief against the defendant. (A claim for relief may be thought of as any form of making a demand of the defendant.) If she files a claim, the parties have the chance to negotiate a settlement of the dispute. If they fail to reach a settlement, the case is adjudicated by the court. (The court may be thought of as any third-party decisionmaker.)



FIGURE 1. — Sequence of events in the model

We assume adjudication has the following form. There exists a lump of evidence that either supports or defeats the plaintiff's claim: if it supports the claim, we say the claim is "meritorious"; if the evidence defeats the claim, the claim is "meritless." This evidence is available to both parties but not to the court. Either party can present the evidence to the court. If either party presents the evidence, the court renders judgment for the party whom the evidence supports.

For clarity's sake, we make two assumptions throughout. First, the evidence is unitary in nature, so that the court sees either all of it or none of it. We thus put to one side the problems raised by partial or selective presentation of the

evidence.⁵ We also put to one side the problem of determining what level of certainty (how much evidence) the court demands before rendering judgment for one party.⁶ Second, the cost of presenting the evidence is less than the amount at stake (the value of the relief sought by the plaintiff).

B. Burden of Proof as a Cost-Minimizing Rule

In this setting, the burden of proof is a default rule instructing the court what to do if neither party presents the evidence. If the plaintiff has the burden of proof, she loses if no evidence is presented; if the defendant has the burden, *he* loses if no evidence is presented.⁷

The basic function of the burden of proof is to allocate among the litigants the task of gathering and presenting evidence in the case.⁸ In an adversary system in which the court lacks independent investigatory powers, the court relies on the parties to inform it about the facts of the case. The burden of proof is the instrument for allocating the job of fact gathering to one or the other party.

We will assume that the court's objective in allocating the burden of proof is to minimize two types of costs—more precisely, the *sum* of the two costs, which we will call process costs and error costs.⁹ Process costs consist of the resources spent by each party in attempting to secure his preferred result in the case (by presenting evidence if the case is resolved through litigation; by bargaining for a favorable settlement if the case is resolved through negotiation).¹⁰

Error costs consist of the disadvantageous results produced by an outcome favoring one party when the evidence supports the other.¹¹ For example, putting the burden on the plaintiff may mean, in some instances, that the plaintiff will lose in court (because she fails to present evidence), or settle the case for less than her damages, even though the evidence indicates she is "in the right." The effect of such errors may be to frustrate such objectives as deterrence, compensation, or whatever other functions the substantive law may have.

5. The interpretation here might be that if one party presents the evidence selectively, the other party corrects the imbalance.

6. For example, should the court demand 50% certainty, 90% certainty, or whatever.

7. Throughout, we use the female pronoun to refer to the plaintiff, the male pronoun to refer to the defendant.

8. This function is explored in Hay & Spier, *supra* note 3.

9. Here we draw on Richard A. Posner, *An Economic Approach to Legal Procedure and Judicial Administration*, 2 J. LEGAL STUD. 399 (1973).

10. Process costs also consist of the resources devoted by the court to adjudicating the case. We leave these out for purposes of exposition; the analysis is easily adapted to include them.

11. Below we define more precisely this notion of an erroneous outcome.

C. Effects of the Burden Allocation

To determine the optimal allocation of the burden of proof, the court must sort out the rule's effect on the parties' decisions in the three stages of the model. Let us consider them in reverse order.

At the *litigation* stage, the parties decide what to invest in gathering and presenting evidence. By determining who is responsible for presenting evidence, the burden of proof allocation will affect both the expected costs of litigation and the likelihood of an erroneous outcome in the case.

At the *negotiation* stage, the parties bargain over settlement terms. By affecting the parties' expected costs of litigation, the burden of proof rule affects the size of the "pot"—the potential gains from trade—that the parties will bargain over. It thus affects the negotiating costs the parties are willing to incur. In addition, by affecting the settlement amount, it affects the likelihood that a party may settle for too little or too much.

At the *filing* stage, the plaintiff decides whether to file a claim; recall that we construe this broadly to encompass any form of making a demand against the defendant. The costs of the succeeding stages—litigation and negotiation—are only incurred if the plaintiff decides to file suit. Her decision will be influenced by what she expects to get in the succeeding stages; these will be a function of the burden allocation. By influencing the plaintiff's decision to file, the burden allocation further affects the process costs generated by successive stages, and also affects once again the likelihood of an erroneous outcome.

The court's problem, therefore, is to predict the parties' equilibrium decisions under a given allocation, and to assess the costs generated by those decisions. In what follows we analyze this problem.

III. WHY *EVER* GIVE THE BURDEN TO THE PLAINTIFF?

We begin by considering a puzzle. By far the most common practice is to give the plaintiff the burden of proof on a contested issue in litigation. Yet intuition suggests the practice has it exactly wrong: analysis of party incentives suggests that in general the *defendant* should generally bear the burden of proof. The question we take up in this part, then, is why courts would *ever* want to give the plaintiff the burden of proof.

A. Holes in the Conventional Wisdom

Probably the most common rationale given for allocating the burden of proof to the plaintiff is that it conserves legal resources by preventing needless

disruptions of the status quo.¹² Though seldom worked out in detail,¹³ the argument appears to take the following form: All else being equal, it is more costly than not for the court to intervene in a dispute (because intervening eats up resources that could be put to some other use).¹⁴ The plaintiff, being the one pressing for judicial intervention, should therefore be required to show that she is entitled to the relief she seeks. Such a rule ensures that the legal system will—in general—only intervene in cases where there is a good reason (where relief is warranted).

This line of argument overlooks the fact that it takes two parties to start a lawsuit. The defendant could have averted a lawsuit by giving the plaintiff what she demanded.¹⁵ For example, if the plaintiff is suing on a contract, or suing for damages following an accident, the defendant could have simply paid the plaintiff the money she claimed she was owed. Whatever relief the plaintiff seeks, the defendant could have given it to her directly, without court intervention. In this sense, the defendant is as responsible as the plaintiff for instigating the litigation.

Indeed, it is tempting to state a procedural corollary to Coase's famous proposition about tort law: lawsuits, like accidents, are reciprocal events. The victim, no less than the injurer, is the "cause" of the accident; the victim could have taken avoidance measures to prevent the accident.¹⁶ Likewise, the defendant, no less than the plaintiff, is the "cause" of the litigation; he could have taken steps to prevent the lawsuit, with all of its ensuing costs.¹⁷

This being so, the conventional argument for giving the plaintiff the burden can be turned on itself. The contrary argument would be: the defendant, having forced the plaintiff to sue, should be required to show he had a good reason for doing so—that is, that the plaintiff is not entitled to the relief sought. This will ensure that plaintiffs with sound claims will not needlessly be forced to sue; the result will be to conserve judicial resources.

This contrary line of argument may or may not seem plausible. It is, however, not obviously less plausible than the earlier argument for giving the plaintiff the burden. It will not do, therefore, to argue that the burden of proof should be

12. See, e.g., Edward W. Cleary, *Presuming and Pleading: An Essay on Juristic Immaturity*, 12 STAN. L. REV. 1, 5 (1959).

13. It is invoked, without discussion, in practically every textbook on the subject. For examples, consult virtually any casebook or treatise on the law of evidence. A classic example is 2 MCCORMICK ON EVIDENCE § 336, at 428 (John W. Strong ed., 4th ed. 1992) (Practitioner Treatise Series).

14. Cf. HOLMES, *supra* note 4, at 77 ("[T]he prevailing view is that [the law's] cumbrous and expensive machinery ought not to be set in motion unless some clear benefit is to be derived from disturbing the *status quo*.") (emphasis in original).

15. I put to one side the rare cases in which the plaintiff sues out of the blue, without first having made a demand of the defendant.

16. The farmer whose crops are destroyed by the railroad could put up protective fencing; could pay the railroad to take protective measures; could move her farm to a different location; or she could go into a different line of business.

17. This idea of reciprocal responsibility presumably underlies the so-called British rule on fee awards. The idea is that the losing party, having forced the other into court, should be held responsible for the resulting legal expenses.

placed on the plaintiff because she is the one responsible for putting the legal machinery into motion. That criterion gives as much support for the opposite allocation.

B. The Prima Facie Case for Giving the Burden to the Defendant

In fact, there is an additional, much stronger argument that the burden should normally be assigned to the defendant. It can be summarized as follows: if the plaintiff expects her case to be heard in court, she has no incentive to bring a claim she knows to be meritless; she would just be wasting her time, because she would not recover anything.¹⁸ Accordingly (the argument goes), there is no point in forcing the plaintiff to prove her case is meritorious, because she would not have brought it if it were otherwise.

To flesh out this argument, let us make two simplifying assumptions. Assume, first, that all disputes go to court; they are never resolved through negotiation. Assume, second, that both parties know whether the claim is meritorious (that is, whether the evidence supports the claim). We want to compare the costs generated by giving the burden allocation to one or the other party. To do this, let us derive the parties' equilibrium strategies under alternative burden allocations.

Consider what the parties will do if the plaintiff files suit. Figure 2 indicates the actions the parties will take in equilibrium. Observe that if a party is "in the right" (if the evidence supports his side), that party will present evidence if and only if he has the burden of proof.¹⁹ If that party is not "in the right" (the evidence is against him), he will not present evidence, no matter who bears the burden of proof.²⁰

18. The plaintiff would be wasting money as well as time. No lawyer would represent her on a contingent fee basis, so she would have to pay her lawyer a non-contingent fee. This would leave her out of pocket at the end of the litigation.

19. If he has the burden of proof, he will introduce the evidence because otherwise he will lose (recall that the costs of presenting evidence are less than the value of the relief sought). If he does not have the burden of proof, he will not bother presenting the evidence, because he will win the case whether or not the other side presents the evidence.

20. There is no point in incurring the cost of presenting the evidence, since doing so will only lead the court to rule against him.

	Meritorious claim	Meritless claim
Burden on Plaintiff	Plaintiff presents evidence (Defendant does not)	Neither party presents evidence
Burden on Defendant	Neither party presents evidence	Defendant presents evidence (Plaintiff does not)

FIGURE 2. — Equilibrium litigation strategies under alternative burden of proof allocations, when the parties know whether the claim is meritorious

Now consider the plaintiff's decision to file suit. From the foregoing it is evident that the plaintiff will not file a meritless claim. This is true no matter who bears the burden of proof: under either allocation, she would lose the case, and thus have no reason to waste her time and money taking it to court. Accordingly, the plaintiff will file suit only if her claim is meritorious, regardless of the burden allocation.

We are now in a position to compare the costs of the alternative burden allocations. Begin with process costs. For reasons just seen, all cases that go to court will be meritorious. If the plaintiff has the burden, then (as we know from Figure 2) the plaintiff will present evidence in all cases. If the defendant has the burden, then (again, from Figure 2) neither party will present evidence. Thus, the costs of presenting evidence will be incurred if the plaintiff is given the burden of proving it to the court. Accordingly, the plaintiff will file suit only if her claim is meritorious, regardless of the burden allocation.

Turn now to error costs. As is evident from Figure 2, the burden allocation has no effect on the outcome of the case. If the claim is meritorious (supported by the evidence), the plaintiff wins under either allocation; if the claim is not meritorious, the defendant wins under either allocation. Thus, no errors (as we have defined them) are produced by either burden allocation.

Giving the defendant the burden, then, generates (in equilibrium) zero process costs and zero error costs. In contrast, giving the plaintiff the burden generates positive process costs and zero error costs. The sum of error costs and process costs, then, is higher if the plaintiff is assigned the burden of proof. If we grant, therefore, the two assumptions made earlier—that all cases go to court, and that the parties know whether the claim is meritorious—it is clearly preferable to give the defendant the burden of proof.

C. Countervailing Factors

To justify ever giving the plaintiff the burden of proof, then, we must relax one or both of these assumptions. Let us see how the analysis is affected if we relax either assumption.

1. Uncertainty

Drop the assumption that the parties know (at all stages of the dispute) whether the claim is meritorious. Let us assume, instead, that the plaintiff is uncertain how the court would rule if it were presented with the evidence.²¹ Then giving the defendant the burden will entail some costs that do not arise when both parties are fully informed.

The reason, quite simply, is that the plaintiff may rationally file a claim that is—though not to her knowledge—meritless. Suppose she does so; and suppose the defendant has the burden of proof. If the defendant knows (or has a sufficiently strong belief) that the claim is meritless, he will present evidence to the court. If the defendant does not know (or lacks a sufficiently strong belief) that the claim is meritless, he will refrain from presenting evidence—and will (erroneously) lose the case.

In either event, allocating to the defendant the burden generates costs that are not present when the parties are both fully informed. If the defendant *does* present the evidence, the result will be some process costs.²² If the defendant *does not* present the evidence, the result will be some error costs.²³ Thus, the sum of error and process costs will be positive.

2. Settlement

Now drop the assumption that all cases are resolved through adjudication. Suppose, instead, that it is possible for the parties to negotiate a settlement of the dispute. Here too, giving the defendant the burden of proof introduces some costs that do not arise when settlement is impossible.

The reason is that the plaintiff may rationally choose to pursue a claim she knows (or believes) to be meritless. If the defendant has the burden of proof, he will be willing to pay a positive amount to settle the case, in order to spare himself the cost of defending himself in court. The plaintiff, knowing this, may file a claim solely for the sake of extracting such a settlement from the defendant. In essence, giving the defendant the burden invites a form of rent-seeking by plaintiffs with meritless claims.

21. This might be either because the plaintiff has not seen the evidence yet, or because she has seen it but does not know how the court will react to it. It makes no difference for present purposes.

22. Recall that if the parties are fully informed, giving the defendant the burden generates no process costs (in the form of presenting evidence to the court).

23. Recall that when both parties are fully informed, there are never any erroneous rulings by the court.

The effect is to produce process costs, as the parties devote resources in bargaining over how this "rent"—the defendant's saved litigation costs—should be divided in settlement. In addition, error costs may result if the defendant is forced to pay a positive amount on a meritless claim. Thus, the sum of process and error costs is likely to be positive if the defendant bears the burden.

D. The Analysis to Follow

Introducing either uncertainty or the possibility of settlement, then, undermines our earlier axiomatic demonstration that the defendant should get the burden of proof. That demonstration depended on showing that, in equilibrium, giving the defendant the burden would yield no process costs or error costs. But as we have seen, given litigant uncertainty or the possibility of settlement, the sum of these costs is likely to be positive.

To be sure, it does not follow that under such conditions the plaintiff should get the burden of proof. The sum of process and error costs is likely to be positive under that allocation as well. Determining whether (and when) the sum of process and error costs is lower under one or the other allocation requires further analysis. Our analysis to this point shows only that litigant uncertainty and the possibility of settlement furnish potential rationales for allocating the burden to the plaintiff.

In what follows we attempt to identify the circumstances under which one or the other allocation is optimal. To do this, we will examine, separately, how litigant uncertainty and the possibility of settlement affect the costs of a given allocation. We then use the results of this investigation to issue some generalizations about which allocation is likely to create lower total costs.

IV. LITIGANT UNCERTAINTY

To examine how litigant uncertainty affects the costs of a given burden of proof allocation, we will assume for clarity's sake that all disputes (in which claims are filed) are adjudicated by the court.

A. The Litigants' Decisions Under Uncertainty

Let us begin by deriving the parties' behavior in equilibrium when they are uncertain about the merit of the plaintiff's claim. As our starting point, observe that if a party does *not* bear the burden of proof, then he will not invest in presenting evidence to the court. He has no reason to since the court is already predisposed in his favor, he gains nothing from presenting the evidence.²⁴ With

24. Another way of saying this is that it is a dominant strategy for him not to present the evidence. If his opponent presents the evidence, then there is no point in the party's duplicating the effort; and if his opponent does not present the evidence, then the party will win by doing nothing. No matter what his opponent does, then, the party is better off not presenting the evidence.

this in mind, let us analyze the litigation decisions of the party that bears the burden of proof, given that he is uncertain of the merit of the plaintiff's claim.

Assume a given party bears the burden of proof. If suit has been filed, that party will present the evidence if and only if the following expression holds:

$$\text{party's estimated chance of success} \times \text{amount at stake} > \text{party's cost of presenting evidence.} \quad (1)$$

The first term represents the party's subjective estimate of the probability that the court will rule in his favor if it sees the evidence; the second term represents the amount at stake for the party (the value of winning a favorable judgment);²⁵ the third term represents the costs the party will incur in gathering and presenting the evidence.

We will call Expression 1 the party's "threshold" for presenting evidence. The threshold is satisfied if and only if the inequality holds. The intuition here is that if the inequality does not hold, the party's perceived odds of winning are too small to justify the costs of presenting evidence; he is better off simply losing the case without presenting evidence.

Now consider the plaintiff's decision whether to file a claim. We will assume that there is only a very slight cost to filing a claim, so that the plaintiff will sue provided that there is some positive expected return from doing so. Granted this assumption, then the plaintiff will file a claim if the defendant bears the burden of proof, so long as the plaintiff's estimated chance of winning is greater than zero.²⁶ If, instead, the plaintiff bears the burden of proof, then she will file a claim if and only if the plaintiff's threshold for presenting evidence is satisfied. For if that threshold is not satisfied, the plaintiff knows she will lose the case (because she will not present evidence), so there is no point in suing.

B. Costs of Alternative Allocations

Using this analysis of the parties' behavior, let us examine the costs generated by one or the other burden allocation. We begin by deriving expressions for the costs in equilibrium; we then examine how these costs are affected by changes in different features of the case.

25. Usually this will be the same for both parties, but not always. For example, one party but not the other may have reputational gains or losses at stake.

26. We implicitly assume that the party without the burden of proof bears no litigation costs.

1. The Costs of a Given Allocation

(a) *Process Costs.* — For a particular dispute, the expected process costs of a given burden allocation are simply the expected costs of presenting evidence. As we have seen from the analysis of the parties' behavior, evidence will be presented by the party with the burden, if and only if that party's threshold for presenting evidence is satisfied.

Accordingly, the process costs generated by allocating the burden of proof to a given party are:

$$\begin{array}{l} \text{probability the party's threshold} \\ \text{for presenting evidence is satisfied} \end{array} \quad \times \quad \begin{array}{l} \text{party's cost of} \\ \text{presenting evidence.} \end{array} \quad (2)$$

The interpretation of this expression is as follows. Consider a set of cases (say, auto accident cases) in which the burden of proof is on one party. Within that set of cases, that party's subjective estimate of his chances of success may vary; so may the costs of presenting evidence and the value of relief. The first term in Expression 2 refers to the likelihood that, for a given case within the set, these variables combine to satisfy the relevant threshold for presenting evidence.

(b) *Error Costs.* — Expected error costs of a given allocation are the cost of an erroneous outcome, weighted by the probability that an erroneous outcome will occur. An erroneous outcome, as we have defined it, occurs when the party whom the evidence supports nonetheless loses; this can happen because that party may rationally choose not to present evidence when he bears the burden of proof.

In effect, putting the burden of proof on one party amounts to "presuming" that the evidence is against the party; an error occurs when the evidence in fact supports the party, but he chooses not to present the evidence (and thereby defaults). Accordingly, the expected error costs of allocating the burden to a given party are:

$$\begin{array}{l} \text{probability} \\ \text{the claim of} \\ \text{the party is} \\ \text{correct} \end{array} \quad \times \quad \begin{array}{l} \text{probability the} \\ \text{party's threshold} \\ \text{for evidence is not} \\ \text{satisfied} \end{array} \quad \times \quad \begin{array}{l} \text{cost of} \\ \text{erroneous} \\ \text{default by} \\ \text{the party.} \end{array} \quad (3)$$

The first term is the probability that the claim is meritless (if the party with the burden is the defendant) or meritorious (if the party with the burden is the plaintiff). The second term is the probability that the party with the burden will nonetheless decline to present evidence. Combined, these first two terms represent the probability of an erroneous outcome. The third term represents whatever disadvantage comes from erroneously holding the defendant liable (if

the defendant bears the burden of proof) or from erroneously absolving him of liability (if the plaintiff has the burden).

2. Comparative Statics

As the above expressions indicate, the costs of allocating the burden to a given party are a function of five parameters: the probability the party is correct; the party's estimate of that probability; the party's costs of presenting evidence; the amount at stake for the party; and the social costs of an erroneous ruling against the party.

We now consider how the costs of the allocation vary with changes in these parameters. To do this, we will investigate what happens to Expressions 2 and 3 when we vary one parameter while holding the others constant. Table 1 summarizes our results.²⁷ Let us briefly explain the intuition behind these results.

TABLE 1
EFFECT OF AN INCREASE IN ONE PARAMETER
ON THE COSTS OF ALLOCATING THE BURDEN TO A GIVEN PARTY

Increased parameter	Process costs	Error costs
Probability the party is correct	none	+
Party's optimism	+	-
Party's cost of presenting evidence	inconclusive	+
Amount at stake for party	+	inconclusive
Social cost of error against party	none	+

(a) *Probable merits.* — Consider what happens when we increase the probability that the party bearing the burden of proof is “correct,”²⁸ without changing any other parameter. A change in this probability—as distinguished from his *estimate* of the probability²⁹—has no effect on the party's decision to

27. A “+” sign means the costs of the allocation go up; a “-” sign means the costs go down; the term “inconclusive” means the costs may go up or down.

28. The plaintiff is correct if the claim is meritorious; the defendant is correct if the claim is meritless.

29. We assume here that his estimate is held fixed. In practice, his estimate will generally be correlated with the true probability, but this makes no difference for present purposes. (We consider below the significance of that likely correlation.)

present evidence; accordingly it has no effect on expected litigation costs. However, it increases the chances that a ruling against the party (when no evidence is presented) will yield an erroneous outcome. Accordingly, an increase in the probability that the party is correct has *no effect on process costs, but raises the error costs of giving that party the burden of proof.*

(b) *Party beliefs.* — Now consider what happens when we increase the party's estimate of his chances of winning if evidence is presented. This makes it more likely that he will present the evidence. As a result, it makes it more likely that litigation costs will be incurred; at the same time, it makes it less likely that an error will occur (because it is more likely that the court will see the evidence). Thus, an increase in a party's estimate of his chances *raises the process costs, but lowers the error costs, of giving him the burden of proof.*

(c) *Costs of presenting evidence.* — Now consider the effect of increasing the party's litigation costs. This makes it less likely he will present the evidence. As a result the likelihood of error goes up because the court is less likely to see the evidence. Regarding process costs, the effect is ambiguous: evidence is less likely to be presented, but if it is presented, relatively high presentation costs will be incurred. Accordingly, an increase in a party's cost of presenting evidence *raises the error costs and may raise or lower the process costs of giving him the burden of proof.*

(d) *Amount at stake.* — Next, consider the effect of increasing the amount at stake for the party. This makes it more likely that he will present the evidence; thus, expected litigation costs go up, and the likelihood of an error goes down. However, all else equal, the more a party has to lose, the greater the cost of an erroneous ruling against him.³⁰ The model gives us no way of determining the net effect on expected error costs. Accordingly, an increase in the amount at stake for a party *raises the process costs, and may raise or lower the error costs, of giving him the burden of proof.*

(e) *Social cost of erroneous outcome.* — Suppose, finally, that we increase the social cost of an erroneous ruling against the party, without changing any other parameter. This will have no effect on the party's decision to present evidence.³¹ As a result, it will have no effect on expected litigation costs or on the likelihood of an error; its only effect is to increase the loss sustained by society in the event an error occurs. Thus, an increase in the cost of an erroneous ruling against a party *has no effect on the process costs, but raises the error costs, of giving that party the burden of proof.*

30. Thus, the cost of an erroneous outcome is in part a function of the amount at stake for the party. For example, if the plaintiff has 100 at stake but the defendant has 200 at stake (perhaps because he will suffer reputational losses if held liable), then a ruling against the defendant generates a social cost, in the sense that he loses more than the plaintiff gains. (That loss may be offset by other social gains, for example deterrence if the defendant acted wrongfully.)

31. As Expression 1 indicates, the party cares about the amount at stake, not the social cost of error as such. Since we are holding the amount at stake constant, a change in the social cost of error has no effect on his behavior.

C. Factors Bearing on the Costs of an Allocation

We are now in a position to assess the influence of different case parameters on the total costs of a given allocation in the model. Table 2 combines and summarizes the comparative-static results from the previous section.³² As the table indicates, an increase in one of the parameters—holding the others constant—generally raises the cost of a given allocation. This is true for all of the parameters except the party's estimated chances of success; here the effect of an increase is ambiguous, because the increase causes process costs to go up and error costs to go down.

TABLE 2
EFFECT OF AN INCREASE IN ONE PARAMETER ON THE
TOTAL COSTS OF ALLOCATING THE BURDEN TO A GIVEN PARTY

Increased parameter	Effect on total costs
Probability the party is correct	+
Party's optimism	inconclusive
Party's cost of presenting evidence	+
Amount at stake for party	+
Social cost of error against party	+

V. SETTLEMENT

We turn now to the costs of a given allocation when the parties may settle their dispute out of court. To examine this setting, we will restore our original assumption that the parties know whether the claim is meritorious. This assumption is made for purposes of expositional clarity; it is not essential to our conclusions.³³

32. Table 2 was constructed by combining each parameter's effects on process costs and error costs. For example, raising the probability that the claim is meritorious has the effect of increasing the process cost of giving the plaintiff the burden of proof, while its effect on error costs is inconclusive. Its net effect, therefore, is in general to raise the costs of giving the burden of proof to the plaintiff. It follows that, all else equal, the higher the probability the claim is meritorious, the more total social costs are generated by giving the plaintiff the burden of proof. A similar procedure was used to yield the conclusions in Table 2 regarding the other parameters.

33. I make the assumption in order to avoid the complexities of modeling the process of bargaining under asymmetric information. See, e.g., Lucian A. Bebchuk, *Litigation and Settlement Under Imperfect Information*, 15 RAND J. ECON. 404 (1984).

Because the settlement process reflects to some extent the parties' expectations of what will happen in litigation, our analysis in this part will build on our earlier derivation of the parties' equilibrium behavior in litigation. The central claim we will explore is simple: by determining the magnitude and distribution of costs faced by the parties in litigation, the burden of proof determines how and to what extent litigation costs influence the process and outcome of settlement bargaining between the parties. As a result, the burden allocation affects both the resources invested in settlement bargaining and the extent to which settlement outcomes diverge from the "merits" of the case.

A. The Parties' Settlement Decisions

We begin by analyzing how the burden of proof allocation affects the parties' settlement behavior. Its central effect is to establish the payoffs from going to court, which in turn establish the range of feasible settlement amounts. As we know from the literature on the settlement of litigation, the plaintiff will not settle for any amount less than the expected award in court *minus* her anticipated litigation costs; the defendant will not settle for any amount more than the expected award in court *plus* his anticipated litigation costs.

The burden of proof rule affects the parties' bargaining positions by determining their anticipated litigation costs.³⁴ As a result, it has two important consequences: (1) it determines the extent to which the parties' bargaining positions diverge from one another; and (2) it determines the value of the range of feasible settlement amounts which diverges from the expected award in court.

The point can best be seen with a numerical example. Suppose that the expected award in court is 100 if the claim is meritorious and zero otherwise; and suppose each party's cost of presenting evidence is 25. Figure 3 indicates the parties' payoffs from litigation under different burden of proof allocations, depending on whether the claim is meritorious. These payoffs are obtained by deriving the parties' equilibrium litigation strategies, which we did in our earlier analysis.³⁵

To see the significance of these payoffs, focus on the case in which the claim is meritorious. Suppose the defendant has the burden. Then, as Figure 3 indicates, the parties' payoffs are the same (that is, the defendant's expected loss from litigation equals the plaintiff's expected gain from litigation). This is because neither party will present the evidence in litigation. As a result, there is only one feasible settlement amount (100). In addition, observe that this amount is the expected award in court.

34. As we saw in our earlier discussion, the burden of proof does not—when the parties are fully informed of the claim's merit—affect the outcome of the case in court; the plaintiff will win in court if and only if her claim is meritorious. *See supra* part III.B. (Recall our assumption that the amount at stake exceeds a party's costs of gathering and presenting evidence.)

35. *See supra* Figure 2 and accompanying text.

	Meritorious claim	Meritless claim
Burden on Plaintiff	Plaintiff: 75 Defendant: (100)	Plaintiff: 0 Defendant: 0
Burden on Defendant	Plaintiff: 0 Defendant: 0	Plaintiff: 0 Defendant: (25)

FIGURE 3. — Equilibrium litigation strategies under alternative burden of proof allocations, when the parties know whether the claim is meritorious

Now suppose, instead, that the plaintiff has the burden. Then the parties' payoffs are no longer the same: the plaintiff's expected gain from litigation is less than the defendant's expected loss, because the plaintiff must incur the costs of presenting evidence. As a result, there is a range of feasible settlement amounts (any settlement amount between 75 and 100 makes both parties better off than going to litigation). In addition, most of these feasible settlement amounts are less than the expected award in court.

Giving the plaintiff the burden of proof, then, has two effects (as compared to the opposite allocation) when the claim is meritorious. First, it *widens* the bargaining range (the range of feasible settlements) by creating a surplus from settlement. Since the parties jointly stand to lose 25 if they go to court,³⁶ they in effect save 25 by settling. To settle the case, the parties must agree on some division of this surplus. Each of them will seek, in bargaining toward a settlement, to capture as much as he can. (Thus, the defendant will try to settle for an amount near 75; the plaintiff will try to settle for an amount near 100.) Notice that this surplus does not exist if the defendant has the burden of proof, so there is nothing to bargain over; the parties will simply settle for 100.

Second, it in effect *distorts* the outcome of the case by creating a divergence between the expected settlement amount and the expected award in court. Unless the plaintiff always captures the full surplus from settling—and there is no reason to suppose she does—then the case will settle for less than 100, so that the plaintiff gets less than the expected award the court would give her. In contrast, if the burden were on the defendant, the case would settle for 100.

The reason these effects occur is that, when the claim is meritorious, *giving the plaintiff the burden generates litigation costs that would not be generated by the opposite allocation*. If the defendant had the burden of proof, expected litigation costs would be zero; there would, accordingly, be no surplus to divide in settlement, and there would be no litigation costs to distort the outcome of the case.

36. It is unimportant for this purpose that the plaintiff bears all 25.

A similar analysis obtains for the case in which the claim is meritless. If the plaintiff has the burden, the defendant will pay nothing to settle the case, because he faces no litigation costs and no expected liability; accordingly, the plaintiff will not bother filing the claim. If the defendant has the burden, he will pay up to 25 to settle the case. The plaintiff will rationally file suit in the hopes of extracting a settlement.³⁷ This creates a surplus of 25 (the costs saved by settling), which the parties will bargain over; and any payment exceeding zero is more than the defendant would be made to pay by the court.

Now, it should be clear that this analysis holds in substance even if we drop the unrealistic assumptions that only the party with the burden of proof presents evidence, and that presenting evidence is the only cost of litigation. It is enough, for our purposes, to assume that, all else equal, a party will spend more on presenting evidence if (1) he has the burden of proof, and (2) the evidence tends (or can be presented in such a way as) to support him. If so, then putting the burden on the party whom the evidence supports will widen the bargaining range, and increase the divergence between the expected settlement amount and the expected award in court.³⁸

B. Costs of Alternative Allocations

Using this analysis of the burden allocation's effects on settlement bargaining, let us attempt to characterize the costs of alternative allocations. As before, we begin by deriving expressions for the equilibrium value of these costs, and then examine how the costs are affected by changes in case parameters.

1. Costs of a Given Allocation

(a) *Process Costs*. — When parties can settle their dispute, the process costs of a given allocation consist of the resources expended on bargaining. As we saw above, if there is a surplus to be reaped from settling, each party will attempt to capture as large a distributive share of the surplus as possible. We will not model

37. The possibility of extracting a settlement by imposing (threatened) costs on the defendant in this manner is examined in D. Rosenberg & S. Shavell, *A Model in Which Suits Are Brought for Their Nuisance Value*, 5 INT'L REV. L. & ECON. 3 (1985).

38. To see the point, suppose in our earlier example that (1) when the evidence supports a party, he spends 15 in presenting evidence if he does not have the burden of proof, and 25 if he has the burden of proof; (2) when the evidence does not support the party, he spends 5 in presenting evidence if he does not have the burden and 10 if he does have the burden; and (3) that each party incurs some other litigation cost C (not related to presenting evidence).

Assume the claim is meritorious. If the plaintiff has the burden, then the plaintiff's payoff from litigation is $100-25-C = 75-C$; the defendant's expected payoff is $100+5+C = 105+C$. The width of the settlement range is $30+2C$; the midpoint of the settlement range (halfway between the parties' payoffs) is 90.

If the defendant has the burden, the plaintiff's payoff from litigation is $100-15-C = 85-C$; the defendant's payoff is $100+10+C = 110+C$. The width of the settlement range is $25+2C$; the midpoint of the settlement range is 97.5. Thus, both the width of the settlement range and its divergence from the expected award are smaller when the defendant has the burden.

A similar analysis obtains for the case in which the claim is meritless.

the bargaining process explicitly; for present purposes it is enough to say that the negotiations may potentially involve a costly and protracted series of offers, counteroffers, threats, bluffs, and the like.

As is clear from Figure 3, the burden of proof generates a positive settlement surplus if the party whom the evidence supports is compelled to demonstrate this to the court. Accordingly, the expected process costs generated by allocating the burden to a given party are:

$$\begin{array}{l} \text{probability the party's} \\ \text{threshold for presenting} \\ \text{evidence is satisfied} \end{array} \quad \times \quad \begin{array}{l} \text{costs of negotiating a} \\ \text{division of the gains} \\ \text{from settlement.} \end{array} \quad (4)$$

The left-hand term represents the probability that the party would present evidence if the case were to go to court. The gains from settling then consist of the litigation costs that are avoided by settling; these are the party's costs of presenting evidence. The right-hand term represents the costs of reaching agreement on how this surplus will be distributed between the parties.

(b) *Error Costs*. — Error costs arise from the distorting effect of imposing litigation costs on the party who is "in the right." The prospect of incurring those costs will compel her to make concessions to her opponent in settlement. In our earlier numerical example, if the plaintiff's claim is in meritorious, the expected award is 100; but if she has the burden she is forced to settle for some amount between 75 and 100.³⁹ Similarly, if the plaintiff's claim is meritless, the expected award is zero; but if the defendant has the burden, the defendant is forced to settle for some amount between zero and twenty-five.⁴⁰

We will assume that, in expected terms, the parties split the surplus from settlement down the middle; that is, in expected terms, they settle for an amount at the midpoint of the settlement range.⁴¹ This assumption is plausible if, in general, neither party has greater bargaining power than the other.⁴² Thus, in our numerical example, the meritorious claim recovers too little (in the amount of 12.5) if the plaintiff bears the burden of proof; the meritless claim recovers too much (again, 12.5) if the defendant has the burden of proof. We will term these errors "settlement concessions" by the party with the burden of proof.

39. In contrast, if the defendant has the burden, he faces no litigation costs (because he will not present evidence); thus the case will settle for 100.

40. In contrast, if the plaintiff has the burden, she will not bring suit and the defendant will pay nothing.

41. This is the usual equilibrium outcome when the parties have symmetric stakes and information.

42. There are two possible interpretations here. One is that they alternate making demands, and each has a 50% chance of making the true "final offer." The other is that, anticipating this possibility, they simply agree to split the difference. It does not matter which interpretation we adopt here.

Expected error costs in this scenario depend on how "bad" it is for claims to collect too much or too little, and on the likelihood of such an occurrence. Thus the error cost of a given burden allocation is:

$$\begin{array}{ccc} \text{probability the party is} & & \text{expected cost of} \\ \text{correct} & \times & \text{erroneous outcome.} \end{array} \quad (5)$$

The second term reflects the costs of an erroneous settlement concession or default by the party with the burden of proof, weighted by their respective probabilities. Thus, the second term is given by the following:

$$\left[\begin{array}{cc} \text{probability the} & \\ \text{party's} & \\ \text{threshold for} & \\ \text{presenting} & \\ \text{evidence is} & \\ \text{satisfied} & \end{array} \right] \times \left[\begin{array}{c} \text{cost of} \\ \text{erroneous} \\ \text{settlement} \\ \text{concession} \\ \text{by party} \end{array} \right] + \left[\begin{array}{cc} \text{probability the} & \\ \text{party's} & \\ \text{threshold for} & \\ \text{presenting} & \\ \text{evidence is} & \\ \text{not satisfied} & \end{array} \right] \times \left[\begin{array}{c} \text{cost of} \\ \text{erroneous} \\ \text{default} \\ \text{by party.} \end{array} \right] \quad (6)$$

The interpretation here is that if the party's threshold for evidence is satisfied, the litigants will bargain over the settlement surplus, and the party with the burden will be forced to make concessions. If the party's threshold is not satisfied, he will be forced to default.⁴³

2. Comparative Statics

Let us see how the process costs of a given allocation change with the parameters discussed earlier.⁴⁴ Table 3 summarizes our results; let us briefly discuss each.

43. If the party with the burden is the plaintiff, then the defendant will not pay anything in settlement (because the plaintiff has no credible threat of presenting evidence at trial), so the plaintiff will drop the case. If the party with the burden is the defendant, then the plaintiff will not accept anything less than the amount at stake (because the defendant has no credible threat to present the evidence), so the defendant will pay the full amount at stake.

44. Because the parties are assumed to know the merit of the claim, we omit the "estimated chance of success" parameter.

TABLE 3
EFFECT OF AN INCREASE IN ONE PARAMETER
ON THE COSTS OF ALLOCATING THE BURDEN TO A GIVEN PARTY

Increased parameter	Process costs	Error costs
Probability the party is correct	+	+
Party's cost of presenting evidence	inconclusive	+
Amount at stake for party	+	inconclusive
Social cost of error against party	none	+

(a) *Probable merits.* — Consider what happens when we increase the probability that the party bearing the burden of proof is correct. It then becomes more likely that his threshold for presenting evidence will be satisfied. As a result, it becomes more likely that the allocation will generate a surplus (the party's avoided litigation costs) for the parties to bargain over. It thus becomes more likely that the parties will engage in settlement bargaining. Accordingly, an increase in the probability that a party is correct has the effect of *raising the cost of giving that party the burden of proof.*

The effect on error costs is less obvious. On the one hand, increasing the probability that the party is correct increases the likelihood that imposing litigation costs on that party will distort the outcome of the case. On the other hand, the second term in Expression 5 may go up or down; there is no obvious reason to expect a move in either direction to be more likely.⁴⁵ Combining the effects, it appears that increasing the probability that the party is correct generally has the effect of *increasing the error costs of allocating the burden to that party.*

(b) *Costs of presenting evidence.* — Now consider the effect of increasing the litigation costs of the party who bears the burden of proof. Regarding process costs, the net effect here is ambiguous: on the one hand, it makes it less likely that the party's threshold for presenting evidence is satisfied; it thus makes it less likely that there will be a surplus to bargain over. On the other hand, if the party's threshold *is* satisfied, an increase in his costs means an increase in the size of the surplus that the parties will bargain over. It is reasonable to conjecture that in general, the larger this surplus is, the more the parties will invest in

45. The first term in Expression 6 goes up; the third term in Expression 6 goes down. There is no reason to know whether Expression 6 as a whole—and hence the second term in Expression 5—goes up or down.

attempting to capture it in settlement.⁴⁶ The one effect translates into less frequent settlement bargaining; the latter effect translates into greater bargaining costs in the event bargaining occurs. Either effect may predominate in determining the direction of expected bargaining costs. Thus, increasing a party's costs of presenting evidence may have the effect of *either raising or lowering the process costs of giving that party the burden of proof.*

Regarding error costs, the effect seems unambiguous. The higher a party's costs, the greater the resulting distortion in the outcome of the case.⁴⁷ Accordingly, raising one party's cost of presenting evidence *increases the error costs of giving that party the burden of proof.*⁴⁸

(c) *Amount at stake.* — Now consider what happens when we increase the amount at stake for the party. It then becomes more likely that his threshold for presenting evidence will be satisfied. As a result, it becomes more likely that the allocation will generate a surplus (the party's avoided litigation costs) for the parties to bargain over. It thus becomes more likely that the parties will engage in settlement bargaining. Accordingly, an increase in the probability that a party is correct has the effect of *raising the process costs of giving that party the burden of proof.*

Matters are less clear as to error costs. As the likelihood increases that a party's threshold for presenting evidence is satisfied, the second term in Expression 5 may go up or down, while the first term is unaffected.⁴⁹ Accordingly, raising the amount at stake for a party *may raise or lower the error costs of giving that party the burden of proof.*

(d) *Social cost of an erroneous outcome.* — Finally, consider what happens when we raise the cost of an erroneous outcome (the second and/or fourth terms in Expression 6), without changing any other parameter. Here again, this will have no effect on the parties' behavior,⁵⁰ and so will have no effect on either litigation costs or the likelihood of an error. Its only effect is to increase the social loss sustained in the event of an error. Thus, an increase in the social cost of an erroneous outcome against a given party *increases the error costs of giving that party the burden of proof.*

46. For example, insisting on a 80/20 division of the surplus is worth more if the surplus is \$1 million than if it is \$1 thousand; thus, a party will rationally invest more in seeking such a split if the surplus is \$1 million.

47. The first term in Expression 6 goes down; the second and third terms in Expression 6 go up. Without knowing anything else about the case, we would expect the latter two effects to dominate the former.

48. As the defendant's cost of presenting evidence increases, the second term in Expression 3 goes up, while Expression 4 is unaffected. Similarly, as the plaintiff's cost of presenting evidence increases, the second term in Expression 4 goes up, while Expression 3 is unaffected.

49. The first term in Expression 6 goes up, while the third goes down; there is no way to know the net effect on the value of Expression 6 (and hence on the value of Expression 5).

50. See *supra* note 31 and accompanying text.

C. Factors Bearing on the Optimal Allocation

We are now in a position to assess the influence of different case parameters on the total costs of a given allocation in the model. Table 4 combines and summarizes the comparative-static results just derived.⁵¹

TABLE 4
EFFECT OF AN INCREASE IN ONE PARAMETER ON THE
TOTAL COSTS OF ALLOCATING THE BURDEN TO A GIVEN PARTY

Increased parameter	Effect on total costs
Probability the party is correct	+
Party's cost of presenting evidence	+
Amount at stake for party	+
Social cost of error against party	+

VI. THE OPTIMAL ALLOCATION

We turn now to the problem of identifying the optimal burden allocation in a given case or class of cases. We have analyzed how different features of a case affect the costs of a given allocation; our task now is to see how a court would apply this analysis in practice.

A. The Model's Prescriptions

1. Factors Bearing on the Optimal Allocation

The model has identified five features of a case that bear on the costs of a given allocation: the probable merits, the parties' estimates of their chances of success, the parties' costs of presenting evidence, the amount at stake for each party, and the costs of an error in favor of one or the other party. What information does the court need to assess these features? Let us consider each in turn.

(a) *Probable merits*. — The court's first task is to estimate the likelihood that one or the other party is "correct" in his version of the facts. More precisely, it

51. My procedure here was the same as for Table 2.

must estimate the probability, *given what it already knows about the case*, that a given party is correct. The court, of course, has only limited information about the case before the evidence has been presented; but it always has *some* information—it knows something about the nature of the dispute, including perhaps some facts that are uncontested between the parties. This information forms the predicate for estimating the probable merits of the case.

Let me give an example. Suppose the plaintiff, a pedestrian, sues the defendant, a motorist, for injuries sustained in a car accident. The contested issue in the case is whether the defendant drove negligently; the court must allocate the burden of proof on this issue. Suppose that all the court knows—at the time it assigns the burden—is that a car accident occurred. The question for the court is: what fraction of car accidents involve motorist negligence? This gives the probability that *in this case* the defendant was negligent.⁵²

Suppose, instead, that the court knows not only that an accident occurred, but that the defendant drove through the intersection (which the plaintiff was crossing) while the traffic light was red. The question then would be: what fraction of car accidents *in which the motorist ran a red light* involve motorist negligence? This fraction is presumably different (higher) than the earlier fraction, and so would yield a different probability estimate that the defendant was negligent in this case.

I will not explore here the reasoning process a court must undertake in estimating probabilities of this sort.⁵³ The important point for present purposes is that choosing the cost-minimizing burden allocation requires the court to estimate the probable merits of the case. To do this, it must use whatever information it has at hand when making the allocation.

(b) *Party beliefs*. — The court has little means of observing a party's estimate of his chances of success. It is fair to conjecture, however, that a party's estimate is generally positively correlated with the probable merits of the case (as the court sees them). Thus, all else equal, the higher the *court's* estimate of a claim's merit, the higher a *party's* estimate, and vice versa.⁵⁴ To the extent a party's estimate is a relevant factor,⁵⁵ it moves in the same direction as the court's estimate of the probable merits.

(c) *Costs of presenting evidence*. — These include all costs of locating and assembling evidence on the contested issue. With modern rules of discovery, which require parties to share the evidence in their possession (and their knowledge of the whereabouts of other evidence), the parties' costs may frequently be roughly the same. This is, however, an empirical question; the more

52. Thus, for example, if one in three car accidents of this type involve motorist negligence, then the court—knowing nothing more than that a car accident occurred—can say only that the chances are one in three that negligence was present in this case.

53. Estimating the probable merits involves a process of Bayesian inference, whose use in allocating the burden of proof is discussed in more detail in Hay & Spier, *supra* note 3.

54. This is not to say that the beliefs are identical, only that upward movement in one is associated with upward movement in another.

55. Our earlier analysis showed its significance was ambiguous.

effective the discovery process is in evening out asymmetries of access and information, the more likely the parties' costs are to be identical.⁵⁶

(d) *Amount at stake.* — In most cases, the stakes will be identical for the parties. This is generally true where the stakes consist solely of the relief to be awarded the plaintiff: the plaintiff's gain is the defendant's loss, and vice versa. In some cases, however, the relief collected by the plaintiff is not the only item at stake; in such cases, the parties may have different amounts at stake. Examples include reputational effects of an adverse outcome,⁵⁷ preclusive effects of an adverse judgment,⁵⁸ or relief paid to people other than the plaintiff.⁵⁹

(e) *Social cost of an erroneous outcome.* — An erroneous imposition of liability may or may not have the same social cost as an erroneous *failure* to impose liability.⁶⁰ For example, in some instances a false positive (erroneous imposition of liability) may have costly overdeterrent effects; in other instances a false positive may have no effect on behavior at all, and therefore generate few if any social costs. Similarly, a false negative (erroneous failure to impose liability) may have costly underdeterrent effects in some settings, while having no effect on behavior in others. The optimal allocation depends in part on the court's assessment of these different possibilities.

2. Optimal Burden of Proof Rules

Table 5 summarizes the significance of each of the above factors for the desirability of a given burden allocation. One feature—the parties' beliefs about the likely outcome of the case—has no clear bearing on the desirability of the allocation. Regarding the other features, an increase in any parameter has the effect of making the opposite allocation more desirable.

56. Suppose, for example, that the critical piece of evidence is a document in the plaintiff's possession. Must the plaintiff hand this document to the defendant, or can she (in practice) bury it in a pile of documents, forcing the defendant to expend resources in finding it? The answer bears on the parties' relative costs of presenting evidence.

57. In a malpractice case, for example, the plaintiff has at stake only her damages; the defendant has at stake the damages plus his professional reputation.

58. For example, the defendant may face a series of suits with issues in common with the present one. An adverse ruling in the present case may preclude relitigation of the issue in the future cases.

59. For example, punitive damages paid to the state rather than to the plaintiff.

60. The cost of erroneous outcomes in litigation is analyzed exhaustively in Louis Kaplow, *The Value of Accuracy in Adjudication: An Economic Analysis*, 23 J. LEGAL STUD. 307 (1994); see also Posner, *supra* note 9, at 400-17.

TABLE 5
SIGNIFICANCE OF AN INCREASE IN ONE PARAMETER FOR THE
DESIRABILITY OF ALLOCATING THE BURDEN TO A GIVEN PARTY

Increased parameter	Significance
Probability the party is correct	favors opposite allocation
Party's optimism	inconclusive
Party's cost of presenting evidence	favors opposite allocation
Amount at stake for party	favors opposite allocation
Social cost of error against party	favors opposite allocation

What kind of burden of proof rules does Table 5 imply are desirable? Let us take, as our baseline, the class of disputes of which the following statements are true:

- given what the court knows—or would know, if suit were filed—about the dispute, the probability that the plaintiff has a meritorious claim for relief is relatively small;
- the parties' costs of presenting evidence are roughly the same; the amount at stake for each party is roughly the same; and the social costs of an error in one or the other party's favor are roughly the same.

In this baseline set of disputes, all of the parameters in Table 5 cancel each other out, except for the probability that the claim is meritorious; and that parameter favors giving the burden to the plaintiff.

Thus, to return to our earlier auto accident example, suppose that if a suit were filed, all the court would know (at the time it assigned the burden) is that an accident occurred. If driver negligence is involved in only a relatively small fraction of auto accidents, then in this dispute the probability that the plaintiff has a meritorious claim is relatively small. The burden should accordingly go to the plaintiff, in this case *and in all auto accident cases in which the court knows nothing (at the time of allocating the burden) beyond the fact that an accident has occurred.*

As another example, suppose the case involves a contract dispute; the contested issue is whether the defendant breached the contract. Suppose that, if suit were filed, all the court would know (at the time of allocating the burden) is that a business dispute has arisen. If only a relatively small fraction of business disputes involve an actionable contract breach, then the probability that a breach

was involved in this case is relatively small. Accordingly, the burden would go to the plaintiff *in all breach of contract cases in which the court knows nothing (at the time of allocating the burden) beyond the fact that a business dispute has arisen.*

This type of reasoning applies to any dispute in which the facts known to the court when it assigns the burden are such that, without more information, the court must conclude that the defendant is probably correct. All else being equal, the burden of proof should go to the plaintiff. If most cases resemble this baseline case, then Table 5 implies that *as a general rule*, the burden of proof on contested issues should go to the plaintiff.

Departures from this general rule might then be justified on at least one of four grounds. These are: (1) Based on the information available to the court, the plaintiff probably has a meritorious claim. (2) The plaintiff's costs of presenting evidence are higher. (3) The plaintiff has more at stake in the case. (4) An error in the defendant's favor is more costly than an error in the plaintiff's favor. Any of these features, if present and sufficiently strong, would furnish a potential rationale for giving the defendant the burden.

B. Positive Implications

To what extent do the prescriptions in Table 5 conform to the practices of courts in allocating the burden of proof? The cardinal rule in most settings is of course that the plaintiff bears the burden of proof on most aspects of the case. How well does this match up with our analysis of Table 5?

Consider the "universe" of all potential disputes over some resource; all the potential settings, say, in which one person might seek to extract a payment of money from another. The odds that, within that set, a given dispute actually involves a meritorious claim for judicial relief are probably quite small. For example: every auto accident furnishes a potential occasion for demanding money from the motorist; every business transaction furnishes an occasion for one transactor to demand some payment from the other; every activity of a landowner gives his neighbor some basis for claiming to have some grievance against him. Of all the potential disputes that might arise in these settings, the number involving meritorious claims for relief is probably quite small.

If we assume that the other factors in Table 5 cancel each other out, then there is a good reason for giving the plaintiff the burden of proof in this "universe" of potential disputes. In the contract setting, for example, all the court knows at the beginning of a case is (say) that a business dispute has erupted; in a nuisance case, all the court knows is (say) that two neighboring landowners have gotten into a tiff. Knowing that and nothing more, the court must conclude that the defendant is probably right (that there is no basis for judicial relief). All else equal, the plaintiff should get the burden of proof.

What would be wrong with making the opposite allocation in these cases? Two things, as we know from the foregoing analysis. First, in instances where the parties were uncertain of the facts, the plaintiff would be tempted to sue on the slimmest of grounds (when her chances of success were very small), compelling

the defendant to present the evidence.⁶¹ Second, the plaintiff would be tempted to sue even knowing she had no claim, in the hopes of inducing the defendant to pay her to drop the claim. The resulting process costs and error costs would likely be greater than if the plaintiff bore the burden of proof.

The model seems consistent, then, with a general rule of putting the burden of proof on the plaintiff. Major exceptions to the general rule also track the model. Courts commonly give the defendant the burden of proof when, given the facts available to the court, the probability is high that the plaintiff is correct. The *res ipsa loquitur* rule in torts is the best known example; the negligence per se rule furnishes another instance.⁶² Another well-known example is the burden-shifting rules in discrimination cases.⁶³ Most of the "presumptions" courts employ in civil cases (such as the presumption that a mailed letter reaches its addressee) are explicable on this ground as well.⁶⁴

The relative cost of gathering evidence may explain certain exceptions. For example, some formulations of the *res ipsa* rule place weight on the fact that the defendant had exclusive control of the injury-causing instrument;⁶⁵ this might be justified on the ground that he has better access to information about what happened. A similar analysis would explain the rule giving the bailee the burden of proof in a suit concerning damage to goods under his control.⁶⁶

Regarding the amount at stake and the costs of error, an interesting example is that a party asserting fraud bears the burden of proving it.⁶⁷ The party who is accused of fraud may lose a lot of reputational capital if he loses the case; this loss may dwarf the amount of relief being sought in the case, meaning the accused has a lot more at stake than his opponent. It may also be that non-legal sanctions against fraud are sufficiently strong that the cost of a false negative is much smaller than the cost of a false positive.⁶⁸

61. In contrast, if she bore the burden of proof, the plaintiff would not sue unless she had fairly substantial grounds for believing the evidence supported her claim; otherwise she would be wasting resources in presenting the evidence.

62. In our earlier example, if the plaintiff can prove the defendant ran a red light, some courts would say this creates a "presumption" that the defendant was negligent; the burden then shifts to the defendant to negate this assumption.

63. See *Texas Dept. of Community Affairs v. Burdine*, 450 U.S. 248 (1981).

64. For numerous examples, see FLEMING JAMES, JR. ET AL., *CIVIL PROCEDURE* § 7.17, at 346-52 (4th ed. 1992).

65. See *id.* § 7.16, at 345.

66. See *id.* § 7.17, at 349.

67. For our purposes, this rule only has bite when the defendant is the party asserting fraud. (There are other special rules concerning fraud that affect matters even when the plaintiff has the burden of proof, but we put these to one side.)

68. This line of argument is strongly implied in *DiLeo v. Ernst & Young*, 901 F.2d 624 (7th Cir. 1990).

VII. CONCLUSION

Precise judicial evaluation of the costs of a given allocation is of course out of the question; even in the simplest of cases, only a rough assessment of the expressions derived in this Article is possible. But if the court is concerned with minimizing the costs of the legal system, even a rough assessment is better than none at all. My objective has been to provide a framework for carrying out this task and to suggest the principal factors on which the cost-minimizing allocation will depend.