7000
CIVIL PROCEDURE: GENERAL

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Abstract

The economic analysis of civil litigation has focused on the action of the litigants and on the effects of substantive and procedural rules on their behavior. This chapter focuses on the economic analysis of procedural rules and how these rules alter the incentives of the litigants to file, settle and litigate disputes. Such procedural rules affect the private costs and benefits of litigation through altering the net expected value and loss faced by the plaintiff and defendant. Procedural rules also affect the social costs and benefits of litigation by affecting the both the direct and error costs of litigation. The analysis in the chapter is organized around the US Federal Rules of Civil Procedure, and in reverse chronological order to reflect the economic analyses use of backwards induction to examine civil litigation. Topics examined in depth include sequencing rules, rules that affect the capitalization of litigation over parties and claims, the rules of discovery, and juries.
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1. Introduction

The economic analysis of civil litigation, following upon the pioneering work of Landes (1971), Gould (1973), and Posner (1973), has proven to be a fruitful area. Economic analyses of litigation have focused both upon the actions of parties in civil litigation and upon the effects of substantive and procedural rules on the litigants' behavior (see Cooter and Rubinfeld, 1989, for a previous survey of the field). This chapter focuses on the economic analysis of procedural rules. Papers in this field generally have examined the effects procedural rules have on error costs and the direct costs of litigation. The length of the reference list annexed to this chapter indicates the extent of academic interest in studying the economic effects of procedural rules, and the consequences of alterations to those rules.

2. Organizing Framework

The organizing framework for this chapter generally follows the US Federal Rules of Civil Procedure (FRCP). The FRCP, as supplemented by statutory and decisional standards concerning the jurisdiction of courts and the preclusive effects of judgments, regulate most aspects of the civil litigation process, from the general statement of the purpose of the rules to the particularized standards regarding process, pleadings, lawyer sanctions, discovery, the allocation of legal costs, the relationship between multiple parties (including the regulation and certification of class actions), motions, trials and judgments. Since their promulgation in 1938, the FRCP have provided generally uniform rules for the conduct of litigation in the US Federal courts, and similar rules have been adopted in a majority of American states (for a comparison of federal and state procedural rules, see Oakley and Coon, 1986). In addition, the Federal Rules have been frequently revised, and the process of rulemaking itself has become a topic for economic and legal analysis. However, we do not discuss the rules and related topics in numerical order. Rather, because the economic analysis of litigation must be forward looking, and thus proceed using backwards induction, our chapter is organized in reverse chronological order.

3. Topics Covered

Topics reviewed in depth in this chapter include sequencing rules, rules that affect the capitalization of litigation over parties and claims, the rules of discovery, and juries. Related areas not addressed in detail in this chapter are treated in other chapters of this volume and earlier volumes. These areas include: other areas of civil procedure, including fee shifting (7300), the litigation/settlement decision (7400) and class actions (7600); the organization of the courts, including jurisdictional issues (7100-7200); criminal procedure (7700); the economics of crime and punishment (8000-8600); arbitration and the private enforcement of law (7500); bankruptcy proceedings (7800); legal error, rules versus standards, and accuracy in adjudication (Volume I, 790), punitive damages (Volume II, 3700), the computing of damages, including the allocations of damages via contribution and indemnity rules (Volume II, 3500); and the production of legal rules and precedent (9000-9900). In addition, issues relating to evidence and information in litigation, including the rules of discovery, attorney client privilege, and advice for litigation, are examined in a companion section on evidence (7900).

4. The Economic Analysis of Procedural Rules

Economic analyses of procedural rules generally have proceeded within Posner's (1973) framework, which conceives the purpose of such rules to be the minimization of the sum of error costs and direct costs. See also Tullock (1975) and Posner (1992) for a general analysis of procedure. Consistent with this framework, Rule 1 of the FRCP directs that the rules be construed and administered to secure the just, speedy, and inexpensive determination of every action. Economic analyses of procedural rules focus on the effect such rules have on the incentives of potential and actual litigants. Thus, the economic analysis of procedural rules must begin with an economic model of litigation.

5. The Economic Model of Litigation

The basic economic model of litigation has two parties, a plaintiff (p) that has a potential claim against the defendant (d). The plaintiff's estimate of the net expected value (NEV) of the claim equals his estimate of the probability (P) that he or she will prevail (P_p) multiplied by the expected award (D_p), net of the marginal costs to the plaintiff of proceeding to the next stage of litigation (C_p). The defendant's objective function for estimating expected loss (EL) is developed in parallel fashion, as equaling the defendant's estimate of the probability the plaintiff will prevail (P_d) times the expected award (D_d) plus the defendant's marginal costs of proceeding to the next stage of litigation (C_d).

In the more developed models, several of the variables may be endogenously determined. For example, both litigants' selections of C may affect their estimates of the outcome, and one litigant's choice of C may affect the other litigant's estimate of its own cost of proceeding to the next stage. Most analyses use sequencing models, for which the definition of marginal cost given in the text is the most general case. In the most basic models, this cost is conceptualized as the marginal cost of 'trial' over 'settlement', though obviously it can be generalized to any of the multiple stages of litigation, and can refer to cooperative, decisional, or unilateral withdrawal outcomes, as developed by Cornell (1990). In processes without discrete formal stages, such as the American discovery process and some Continental trial processes, the most general case will be continuous updating of NEV and EL as each new item of information (for example, each witness or investigation) becomes available.

In addition, the litigants can be influenced by effects external to the current litigation - for example, by the precedential or preclusive effects of the judgment in the current litigation on future litigation. In such cases, a current plaintiff's judgment will produce an external gain to the plaintiff (G_p) while the

defendant will suffer external loss (L_d). Likewise, a defendant's judgment will produce external gain (G_d) while the plaintiff will suffer an external loss (L_p).

The *NEV* and *EL* are the primary determinants of the incentives given to litigants in the economic model, including the amount of effort expended during litigation, the trial/settlement decision, the decision to file a suit, and the decision to avoid behavior that would give rise to legal liability. Because procedural rules alter the *NEV* and *EL*, these rules will have a central role in determining litigation incentives and outcomes. Because decisions made at earlier stages of litigation are dependent upon the parties' expectations of the outcomes (and their own and opposing parties' decisions) during later stages of the litigation, economic analysis begins from the last stage of trial and judgment, and proceeds by backward induction. Thus, we list and discuss topics in reverse chronological order.

6. Trial Courts

The last stage of a civil litigation in the court of first instance is the trial and judgment (Cooter and Rubinfeld, 1990). This discussion suppresses the possibility of appellate review, which in the US federal system is governed by a separate set of Federal Rules of Appellate Procedure. Appellate review in the United States is concerned primarily with the correction of legal error and secondarily with factual error. For a discussion of the economic analysis of those topics, see Volume I, Chapter 0790 in this volume.

7. The Choice Between Judge and Jury Trials

Trials and judgments are governed by Sections VI and VII of the FRCP (Rules 38-63). Subject to certain motions for the court to set aside the verdict (Rule 50) or order a new trial (Rule 59), judgment is entered as given by the factual findings and legal conclusions of a judge (see Rule 52) or the verdict of a jury (Rule 58). The federal rules allow any party to demand a trial by jury of any issue triable as a matter of federal constitutional right by a jury (Rule 38). Although most American states also provide by state law or constitution for a right to trial by jury in some or all cases, the state courts generally are not bound by the federal constitutional right to jury trial, except in certain cases where they are adjudicating federal claims for which federal law requires a right to jury trial. Rule 39 allows the parties in these cases also to have a trial by the court, by joint consent. Gay, et al. (1989) examine the choice between judge and jury under the assumption that juries are 'noisier' adjudicators than judges. Clermont and Eisenberg (1992) examine empirically whether the choice

of judge versus jury produces differing verdicts in product liability cases tried under state law, finding that - contrary to the popular belief - judges, not juries, are more generous to plaintiffs. Further, they do not find that these results are explained by selection bias.

In addition to explicit choices by the parties, several of the Rules allow the judge to exercise certain powers even when the case is tried by jury. Rule 49 allows the court to require a jury to return a special verdict, which involves explicit findings upon each of several elements of the claim at issue rather than allowing the jury to return the more common general verdict (see Lombadero, 1996; James, Hazard and Leubsdorf, 1992, p. 377). Rule 50 provides for judgment as a matter of law, which can be used by the judge to preempt or overrule a jury upon the determination that, after being fully heard, there is no legally sufficient basis for a reasonable jury to find for a party on an issue (see McLauchlan, 1973). Rule 56 provides for an equivalent ruling in the pretrial stage by summary judgment, on the basis of pretrial discovery material and written submissions by the parties (see McLauchlan, 1977), and Rule 12 permits a judgment as a matter of law at the earlier pleading stage, in cases where the plaintiff's claim is legally deficient on its face.

8. Jury Structure and Decision Rule

The rules also regulate the size and decision rule used by civil juries, as well as the process through which jurors are selected. Rule 48 specifies that, unless the parties otherwise stipulate, a civil jury shall be not fewer than six nor more than twelve, and that the verdict shall be unanimous. Economic analyses of jury decision making include an examination of how juries process information (Klevorick, Rothschild and Winship, 1984; Froeb and Kobayashi, 1996), and the effect of jury size and alternative decision rules (Klevorick and Rothschild, 1979). Finally, Rule 47 (as supplemented by federal statutes) controls the selection of jurors, including the procedures for examination of jurors during the selection process, and the use of peremptory challenges (see, for example, Schwartz and Schwartz, 1996).

9. Litigation Expenditures

A separate literature has bypassed explicit consideration of the jury versus judge decision-making process by modeling the outcome of a trial as being determined by the litigants' expenditures on litigation. The most common model of litigation expenditures is where the both litigants expend resources to alter the probability of prevailing (see Posner, 1973; Goodman, 1978; Tullock,

1980; Wittman, 1988; Katz, 1988; Hay, 1995; Kobayashi and Lott, 1996). That is, in these models, the marginal cost of future litigation stages C_p and C_d (usually conceptualized as 'trial versus settlement') are endogenous choice variables that determine the probability that the plaintiff will prevail $P(C_p,C_d)$. The equilibrium amounts of litigation expenditures depend upon the relative stakes of the parties, and upon the relative merits of the case. The litigation expenditures and probability determined by solving for the Nash equilibria are used as the expected values for earlier stages of litigation. Other articles have examined the relationship between the burden of evidence or decision standard and litigation expenditures. In these models, litigation expenditures that allow a litigant to meet the burden of proof or decision standard serve as a costly signal of liability (see, for example, Rubinfeld and Sappington, 1987).

10. The Trial/Settlement Decision

The major decision preceding commencement of a trial is the decision whether to settle the case or proceed to trial. The relative magnitudes of the plaintiff's *NEV* and the defendant's *EL* are the primary determinants of whether a case settles or whether trial occurs. As noted above, this modeling can be generalized to any stage preceding a decision by the court, or a further commitment to incur litigation expense. Under risk neutrality, the *NEV* sets the plaintiff's minimum acceptable settlement offer and the *EL* the defendant's maximum settlement bid. In the absence of lawyer-client agency costs, a sufficient (but not necessary) condition for litigation is the perceived absence of a bargaining range, which occurs when the plaintiff's minimum acceptable offer is greater than the defendant's maximum bid, that is, $NEV > EL$, or equivalently:

$$P_p(D_p + G_p + L_p) \; ! \; P_d(D_d + L_d + G_d) + G_d \; ! \; L_p > C_p + C_d \qquad (1)$$

The above condition identifies two reasons why parties choose to forego settlement and proceed to trial. The first is based on prediction failure. The second is based on consideration of external effects, specifically precedential or preclusive effects of the current litigation on future litigation.

A. The Optimism Model

11. The Prediction Failure Model

Under the simplifying assumptions that the litigants have symmetric stakes ($D_p = D_d = D$) and that there are no external effects ($L_d = L_p = G_d = G_p = 0$), the condition for trial rather than settlement reduces to the following expression:

$$(P_p \text{ ! } P_d)D > C_p + C_d \tag{2}$$

This condition illustrates the optimism model of litigation. In such a model, settlement fails to occur because of prediction failure - that is, settlement fails because the parties have mutually inconsistent and relatively optimistic estimates of the probability that the plaintiff will prevail (that is, $P_p > P_d$). The litigants' erroneous predictions lead them to behave as if there were no room for a mutually beneficial settlement.

12. The Priest-Klein Selection Model

Economists also have modeled the process through which such mutually inconsistent and optimistic predictions are generated. The Priest and Klein (1984) model of case selection is based on the optimism model, and has two major hypotheses. The first and more general hypothesis is that the cases selected for trial are not representative of the population of disputes. Specifically, under the assumptions of symmetric stakes and specific distributional assumptions about the litigants' estimates of *P* (specifically that each litigant's estimate of *P* is an independent draw from a unimodal distribution centered around the true *P*), the basic Priest-Klein model predicts that a disproportionate number of cases selected for trial will come from cases that are close to the decision standard. The second hypothesis is a specific prediction for observed case outcomes in the limiting case where the litigants accurately estimate *P*. Priest and Klein show that under these circumstances the distribution of filed cases around the decision standard becomes approximately symmetric, and the generated plaintiff win rate approximately equals 50 percent.

A large number of articles have examined the limiting prediction of a 50 percent win rate, and have presented evidence where the win rate differs from 50 percent. See, for example, Priest (1985), Wittman (1985), Ramsayer and Nakazato (1989), Eisenberg (1990), Hylton (1993), Thomas (1995), Waldfogel (1995), Shavell (1996). See Kessler, Meites and Miller (1996) and Kobayashi (1996) for recent surveys of the literature. While generally rejecting the specific fifty percent hypothesis, this evidence may simply reflect the fact that the

assumptions underlying the limiting case do not hold. Further, empirical studies examining the more general predictions of the Priest-Klein model have found evidence consistent with model (see Kobayashi, 1996).

13. Settlement Failure and Discovery

Because the prediction failure model predicts settlement failure because litigants lack information at the time of the final trial/settlement decision, it suggests procedural reforms aimed at increasing pre-trial information. The management of pre-trial information is addressed in Section V of the FRCP (Rules 26-37). The primary rule is Rule 26, which contains the general provisions governing civil discovery. Under Rule 26, litigants are required to respond to requests for information by the adverse party, on the theory that such requests and responses would increase pre-trial information and increase settlement and accuracy in adjudication. However, economic models of discovery have pointed out several problems with the rules. First, the rules shift the costs of gathering information from the requesting to the responding party, and thereby introduce both a potential moral-hazard problem and strategic behavior into the demand for pretrial discovery. Because the costs of responding to a discovery request are, in many cases, larger that the cost of making a request, this externalization predicts that parties will request information well past the point where the marginal value of information outweighs the marginal costs of gathering the information. In addition, the process of discovery can decrease, rather than increase, settlement by making parties more optimistic (see Cooter and Rubinfeld, 1994). Finally, discovery can potentially decrease the amount of information in litigation by providing disincentives for the production and retention of information that might be subject to extensive legal discovery (see Kobayashi, Parker and Ribstein, 1996; see also Hay, 1994 and Sobel, 1989).

14. Amendments to the Discovery Rules

The perceived problems of 'overdiscovery' predicted by the economic model of litigation have been addressed in several amendments to the discovery rules. In 1983, Rule 26(b) was amended to embody an explicit cost-benefit test that could be applied by the judge to limit discovery. At that same time FRCP 16 was amended to expand the judge's power to manage the pretrial process in general. However, the economic model suggests that these managerial solutions may be inferior to forcing each litigant to internalize the costs of its own information requests, or at least to pay for the marginal cost of extensive discovery requests (Cooter and Rubinfeld, 1994).

In 1993, Rule 26 was further amended, again in response to concerns regarding litigants' overinvestment in discovery activity. However, the major change to the rules was to institute a regime of initial disclosures to be made without any request for information from the adverse party (see FRCP Rule 26a; Brazil, 1978; Schwarzer, 1989; Cooter and Rubinfeld, 1995). Applying the economic model, this change is likely to make matters worse. To the extent that cost-shifting is the source of 'discovery abuse', these rules exacerbate the problem by allowing the requesting party to externalize the costs of both requesting and responding to requests for information. This effect is magnified by abandonment of code pleading in favor of the broad notice pleading rules contained in the FRCP (Section III, Rules 7-15; see Epstein, 1973a, 1973b, 1974, 1986; Posner, 1973; Katz, 1990; Bone, 1997). Further, to the extent that this rule moves the costs of pretrial discovery into an earlier phase of the litigation, this may have the effect of increasing total costs, and decreasing the marginal costs of trial over settlement. The 1993 amendment was subject to a local option in US federal districts, which has reduced some of the effects of the rule change. Empirical analysis has shown that the busiest federal districts have opted out of the new rule (Kobayashi, Parker and Ribstein, 1996).

B. The External Effects Model

15. External Effects

Relative optimism is not the only way in which to generate the absence of a perceived bargaining range. The existence of external effects can cause litigation to occur even if the parties to the litigation agree on the likely outcome of the case. Examples of external effects include the precedential and preclusive effect of litigation, both of which serve to affect litigants' prospects in future cases (see Galanter, 1974; Rubin, 1977; Che and Yi, 1993 and Kobayashi, 1996; see also Landes and Posner, 1979; Blume and Rubinfeld, 1982; Priest, 1987, 1980; Cooter, 1987; Galanter, 1987). For a more complete discussion of precedent and legal change, see Chapters (9000-9900) of this volume.

To illustrate this point, consider the case with symmetric stakes and where the litigants agree on the probability the plaintiff will prevail, that is, $P_p = P_d = P$. According to the simple optimism model, such a case will settle in order to save the costs of a trial. However, even under these assumptions, litigation may be generated if the current case has implications for future behavior of the litigants involved. The *NEV* of the lawsuit to the plaintiff equals $P(D + G_p) \,!\, (1 \,!\, P)L_p \,!\, C_p$, and the defendant's $EL = P(D+L_d) \,!\, (1 \,!\, P)G_d + C_d$. The condition for litigation $NEV > EL$ becomes:

$$P(G_p \,!\, L_d) + (1 \,!\, P)(G_d \,!\, L_p) > C_d + C_p \qquad (3)$$

Condition (3) shows that, even when the prospective outcome of a trial is agreed upon by the parties, trials can be generated when the external gains to the winning litigant outweigh the external losses to the losing litigant. In contrast to the sources of trial in the prediction failure and settlement failure models (where information costs prevent litigants from achieving a settlement within an existing bargaining range), external effects cause trials by preventing the existence of a bargaining range due to asymmetries in external effects. Because no mutually beneficial bargain is foregone, these trials are not a failure. In fact, the existence of external effects focuses on the positive and valuable rulemaking function of trials.

16. External Effects and Procedural Rules

The model of trial based on external effects also suggests the relevance of a different set of procedural rules - one that focuses on the effects of litigation on future claims and third parties. The FRCP addresses the packaging of claims and parties generally in Rules 13-14 and 17-25. These rules serve as inclusive packaging devices, which operate by giving litigants incentives and opportunities to join parties and claims in order to internalize external effects and to achieve economies of scale in litigation. They include the permissive joinder rules (Rule 18-20), impleader (Rule 14), interpleader (Rule 22), intervention (Rule 24), the rule governing counterclaims (Rule 13), and the rule governing class actions (Rule 23). For an economic analysis of counterclaims, see Landes (1994). For a discussion of various aspects of class actions, see Dam (1975), Rosenfeld (1976), Bernstein (1978), Friedman (1996), and Chapter 7600 of this volume.

17. Common Law Packaging Rules

A second major category of packaging rules include the common law rules of precedent, or stare decisis, and the rules of preclusion, or the law of res judicata. The common law rules of res judicata include the doctrines of claim preclusion (also known as merger and bar) and issue preclusion (also known as collateral estoppel). Under the rule of claim preclusion, parties or their privies (that is, predecessors or successors in interest) are precluded from relitigating issues that were or could have been raised in the first action (see, for example, Kobayashi, 1996; Landes and Posner, 1994). Claim preclusion prevents the splitting of claims based on the same out-of-court transaction, thus functioning as mandatory joinder-of-claims rules by their prospective effect on

future litigation. In contrast, issue preclusion (collateral estoppel) is limited to issues that were actually litigated, actually decided, and necessary to the judgment in the first case. In addition, while application of claim preclusion is generally limited symmetrically to persons who were either parties or successors to parties on both sides of the initial litigation, collateral estoppel can operate non-symmetrically, or, as it is termed in legal doctrine, non-mutually, in the sense that collateral estoppel can operate in favor of strangers to the first action, but can operate against only parties or their successors (see Spurr, 1991; Hay, 1993). The existence of non-party preclusion has led to the attempted use of settlement conditioned on vacatur (the eradication of a prior public decision) as a means to eliminate the effect of preclusion (see Fisch, 1991).

18. Offensive Non-Mutual Collateral Estoppel

To see the effect of the application of non-mutual collateral estoppel, consider the case where a single defendant faces two different plaintiffs sequentially. Suppose for simplicity that both cases turn on a single issue that determines the outcome. First consider offensive collateral estoppel. If the first plaintiff prevails against the defendant, the defendant is precluded from relitigating the decisive issue against the second plaintiff. Thus, a loss in the first case results in the loss of both cases, and the external effect $L_d = (1 ! P)D$. In contrast, a win by the defendant against the first plaintiff does not preclude the second plaintiff from relitigating the issue, if the second plaintiff is neither a party nor a privy to the first action. Thus, the only effect on the second litigation would be the precedential gain $G_d = (dP\ D)$, where dP equals the change in P in the second litigation. If there are no novel issues of law, this gain is likely to be close to zero. And under the assumption that the plaintiffs are not repeat litigants, $L_p = G_p = 0$.

Substituting into the condition for litigation (equation (3)) yields:

$$(1 ! P)D(dP ! P) > C_d + C_p \tag{4}$$

If the precedential change dP is close to zero, condition (4) is unlikely to be satisfied. Thus, there will be little incentive to take such cases to trial. This incentive for settlement has led some to object to offensive non-mutual collateral estoppel on the grounds that such a rule will allow plaintiffs to repeatedly extract large settlements from a common defendant. However, the total effect on settlement amounts from such a rule is unclear (see Hay, 1993). First, the effect of estoppel causes the repeat litigant to capitalize all future litigation into the first litigation. This increase in the stakes causes the repeat litigant to spend a larger amount of resources when he goes to trial. This has

the effect of lowering *P*, thus moving the bottom of the bargaining range downward. Further, the repeat litigant is likely to take a harder bargaining stance in the first litigation by anticipating its effects on future litigation.

19. Defensive Non-Mutual Collateral Estoppel

In contrast, consider the use of defensive non-mutual collateral estoppel with multiple plaintiffs. Again, assume that $L_p = G_p = 0$. Now $L_d = dP\,D$ and $G_d = PD$. Substitution into the condition for litigation (equation (3)) yields:

$$PD\,((1 \,!\, P) \,!\, dP) > C_d + C_p \tag{5}$$

In contrast to the rule of offensive non-mutual collateral estoppel with multiple plaintiffs, such a rule increases the likelihood of litigation. In addition, use of such a rule would apply preclusion against a non-party that was represented by a party in the first litigation with low relative stakes, which may increase legal error and increase the amount of litigation (see Spurr, 1991). Thus, the court's rejection of the latter rule because of due process concerns is consistent with the predictions of economic analysis.

C. The Bargaining Failure Model and Asymmetric Information

20. Bargaining Failure

Even within the basic optimism model of litigation, condition (2) is not a necessary condition for litigation. Even if a positive bargaining range is perceived to exist, the parties may fail to settle due to bargaining failure (see, for example, Cooter, Marks and Mnookin, 1982; Gross and Syverud, 1991; Shavell, 1993) or due to the existence of asymmetric information (see, for example, P'ng, 1983, 1987; Bebchuk, 1984; Schweizer, 1989; Spier, 1992, 1994b; Daughety and Reinganum, 1993; Froeb, 1993; Wang, Kim and Yi, 1994). In the former case the litigants fail to agree on a specific bargain even if both litigants agree that a positive bargaining range exists. In the latter case, trials are a necessary cost of avoiding adverse selection problems. In both of these cases, the potential for costly trials represents a calculated cost of strategic behavior aimed at obtaining a better expected settlement.

21. Bargaining Failure and Procedural Rules

The existence of asymmetric information in litigation again points to the discovery rules (see the discussion in Part B, above). In addition, economists have examined procedural rules that would increase the incentives for settlement. Under FRCP Rule 68, the defendant can make an offer of judgment. If this offer is not accepted by the plaintiff, and the subsequent judgment is less favorable to the plaintiff, the plaintiff is responsible for the defendant's costs after making the offer (see Miller, 1986; Anderson, 1994; Anderson and Rowe, 1996; Chung, 1996). However, liberal and early use of Rule 68 is limited by the requirement that the defendant offer not merely settlement but judgment, which can have a preclusive effect in subsequent litigation. Further, under the current rules, it does not allow the plaintiff to recover marginal fees (although many statutes provide for one way fee recovery by plaintiffs). In addition, economists have analyzed contractual settlement devices such as settlement escrows (see, for example, Gertner and Miller, 1995), and the use of mediation and arbitration techniques (see Shavell, 1995).

D. Lawyer-Client and Client-Client Agency Costs

22. Lawyer-Client Agency Costs

Finally, trials can be generated due to agency costs between lawyer and client and by agency problems between co-interested clients. A large literature has modeled the consequence of attorney compensation arrangements that give rise to the agency problems in settlement (see, for example, Miller, 1987). Articles examining the incentive effects of contingent fees include, Clermont and Currivan, 1978; Danzon (1983); Lynk (1990, 1994); Miceli and Segerson (1991); Thomason (1991); Dana and Spier (1993); Rubinfeld and Scotchmer (1993); Miceli (1994); Watts (1994); Hay (1996, 1997). Potential solutions to such problems include enforcement of ethical rules or the use of reputational mechanisms (see Gilson and Mnookin, 1984; Smith and Cox, 1985; Yang, 1996).

23. Contribution, Indemnity and Agreements with Multiple Defendants

Similarly, litigation and settlement are affected by the rules which allocate liability among multiple defendants. These include the rules of contribution and indemnity (see Easterbrook, Landes, and Posner, 1980; Landes and Posner, 1980; Hause, 1989; Kornhauser and Revesz, 1989, 1990, 1994; Klerman, 1996) and agreements between plaintiffs and defendants (see Bernstein and Klerman,

1995).

E. Effect of the Decision to File a Suit and the Decision to Avoid a Lawsuit

24. Incentives to Avoid Litigation

Finally, the *NEV* and the *EL* provide incentives during the earlier stages of litigation. The *EL*, discounted by the probability that a suit will be filed and by the likelihood of settlement, provides deterrence of and incentives for avoidance of behavior subject to legal liability (Polinsky and Rubinfeld, 1988a, 1988b; Cooter and Rubinfeld, 1989; see also Ordover, 1978, 1981, and Hylton, 1990).

25. The Decision to File a Lawsuit

Similarly, the *NEV* of a lawsuit is a primary determinant of whether or not a plaintiff chooses to file a suit. While many analyses of litigation limit their examination of legal claims to those whose NEV is positive, this is not a necessary condition for a suit to be filed. Negative NEV suits may also be filed in order to extract a settlement, and such strategies can be successful when the threat to litigate is credible (see Rosenberg and Shavell, 1985; Nalebuff, 1987; Bebchuk, 1988, 1996; Katz, 1990; Klein, 1990; Miceli, 1993; and Bone, 1997). For general analyses of the relationship between the cost of litigation and private and social incentive to bring a suit, see Schwartz and Tullock (1975); Priest (1982); Shavell (1982b); Menell (1983); Trubek, et al. (1983), Kaplow (1986); Rose-Ackerman and Geistfeld (1987); Hazard (1989); Williams and Williams (1994).

26. The Role of Sequencing of and Exit from Litigation

Perhaps one of the most salient features of the FRCP, and one that has been only recently addressed by the economics literature, is the effect of the rules on the timing and sequencing of litigation. While many economic models treat litigation as a timeless decision, the procedural rules lay out a sequence of events that determine how litigation will proceed over time. The timing and sequence of litigation has been shown to have important implications for the *NEV* of a lawsuit and the behavior of litigants.

For example, the ability of litigants to sequentially litigate motions or to separate liability and damage phases of trials have been shown to affect both the cost of litigation and the value of the litigation if litigants are allowed to

exit. Sequencing with easy exit increases the 'option' value of litigation by allowing plaintiffs to avoid conditional negative NEV outcomes by exiting the litigation (see Cornell, 1990; Landes, 1993; Chen, Chien and Chu, 1997). In addition, the ability to take motions sequentially can affect the credibility of negative expected value suits (Bebchuk, 1996).

Under the FRCP, exit is controlled by Rule 41. Under Rule 41, the plaintiff can unilaterally dismiss an action without order of the court at any time before the adverse party answers. After this, dismissal requires mutual stipulation by all parties, or an order of the court. The application of Rule 41 is a prime example of the tension between the *ex ante* and *ex post* effects of procedural rules. *Ex post*, it is unlikely that a defendant will prevent a plaintiff from abandoning a claim. However, the willingness of the court or the adverse party to allow the plaintiff to easily exit the litigation may be the primary reason the suit was filed in the first place.

27. Lawyer Sanctions

The FRCP address this inability to commit through Rule 11, which allows the court to impose sanctions on parties and their attorneys for filing frivolous suits. This rule addresses the commitment problem by allowing the motion for sanctions to survive the dismissal or mooting or the original claim. Thus, Rule 11 allows the motion for sanction to survive as separate action with the sanctions as the incentive to litigate. Economic analyses of sanctions under Rule 11 include Kobayashi and Parker (1993); Polinsky and Rubinfeld (1993); Bebchuk and Chang (1996); and Bone (1997).

However, recent amendments to Rule 11 may have reduced the value of Rule 11 as a commitment device. In the 1993 Amendments to the FRCP, the rules were amended to allow the a litigant twenty-one days to withdraw his pleading upon being served with a Rule 11 motion by the adverse litigant. In essence, the new rules allows for free exit, and thus weaken the commitment and deterrent effect of the rules. While the amendments to Rule 11 were designed in large part to decrease the volume of 'satellite' litigation over alleged Rule 11 violations, the effect of the rule change may be to increase the number of filed cases, the rate of Rule 11 challenges, and total litigation costs (Kobayashi and Parker, 1993).

28. Fee Shifting

Economists have also examined the use of two-way fee shifting (often referred to in America as the 'English' rule, in contrast with the general 'American' rule that each party bears its own fees, regardless of outcome) to deter low or negative value lawsuits. Because two-way fee shifting imposes extra costs on the losing party, it disproportionately affects low probability lawsuits (see Shavell, 1982a). However, the FRCP has not incorporated two-way shifting of fees and costs, and state experiments have not proven successful or long lived (see Snyder and Hughes, 1990; Hughes and Snyder, 1995). In addition, almost all fee-shifting statutes require the imposition of a judgment. Thus, the use of fee shifting would not necessarily reduce the option value of litigation. That is, if exit is routinely allowed prior to judgment, fee shifting will not serve as a deterrent. Indeed, to the extent that two-way fee shifting would increase the variance in final outcomes, use of such a system would increase the option value of litigation, and thereby increase the supply of filed cases (Cornell, 1990). For a more complete discussion of fee shifting, see Chapter 7300 of this volume. See also, Dewees, Prichard and Trebilcock (1981); Braeutigam, Owen and Panzar (1984); Reinganum and Wilde (1986); Bowles (1987); Katz (1987); Plott (1987); Donohue (1991); Graville (1993); Spier (1994a), and Katz and Beckner (1995).

F. Procedural Rulemaking

29. The Process of Procedural Rulemaking

Finally, both the process of procedural rulemaking and the adversarial system itself have been the subject of economic analyses. Indeed, the controversy over the relative merits of party-controlled adversarial presentation and a more 'managerial' system of litigation was at the heart of the controversial amendments to the discovery rules, and has been the subject of debate in the academic literature (see McChesney, 1979; Tullock, 1980, 1988; Langbein, 1985). For a recent report of experimental results, see Block and Parker (1996). For a public choice treatment of the common law of procedural rules, see Macey (1994).

The controversy over the recent amendments to Rule 11 and 26a have drawn attention to the process through which the rules are revised (see Kobayashi and Parker, 1993; Kobayashi, 1996), and have highlighted the lack of empirical evidence on the performance of procedural rules and systems (see, for example, Galanter, 1983; Walker, 1994). Indeed, the amendment to Rule 26a, which allows individual district courts to opt-out of the discovery rules, the Civil Justice Reform Act of 1990, which encouraged local variations in each

district, and variation in local Federal Court rules and state court rules all provide substantial challenges to the traditional centralized system of rule making that existed in the federal system prior to 1990 (see Kobayashi, Parker and Ribstein, 1996; Solimine and Pacheco, 1997; and Subrin, 1989).

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