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Tipping the scales: Conciliation, appeal and the relevance of judicial ambition

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TIPPING THE SCALES – CONCILIATION, APPEAL AND THE RELEVANCE OF JUDICIAL AMBITION

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Tipping the Scales – Conciliation, Appeal and the Relevance of Judicial Ambition

ROBIN CHRISTMANN

Zusammenfassung/ Abstract

Judges become ambitious decision makers when they face appellate review. This paper applies a contract theoretic perspective to the behavior of self-interested trial judges in a two-level court system and analyzes the consequences for contracting in “the shadow of” the court. Confronted with the factual ambiguity of an assigned case, rational judges pursue an (privately) optimal strategy to conclude the dispute and tip the scales of the trial outcome. We show that even if judges generally dislike errors and have no personal preference for a specific party, these effects of judicial agency manipulate the implemented court accuracy and degrade the contract outcome. Our implications put into perspective the traditional function of appellate courts to foster the accuracy of enforcement and identify the need for a complex measurement of judicial performance. The model also reveals that a judicial tendency to conclude lawsuits in the conciliatory hearing may overly strain contract output.

JEL-Klassifikation / JEL-Classification: C72, K12, K41

Schlagworte / Keywords: Court error, judicial behavior, reputation, contract theory

1 INTRODUCTION

“Good lawyers know the law; great lawyers know the judge.” – UNKNOWN

Does the ambition of the judiciary affect the outcome of litigation and contracts? It is not surprising for economists to suspect that the judge has *some* impact on the course of a trial. This significance of the jurist’s identity has particularly influenced law and economics scholars who study legal evolution and court discretion. Yet all legal institutions, such as contracts, which are designed to stabilize individual party behavior and facilitate numerous transactions in the market, require the possibility of enforcement to become credible and effective.¹ It is more discomfoting, however, that the literature has rarely confronted self-interested economic agents, who negotiate these contracts to exchange goods or services, with the ambition of their potential enforcer. Because individuals always have goals, distinct from (legal) institutions (SHEPSLE 1992, p. 254), the interactions become more complex. Whenever judges are required to render a decision, human flaws and private incentives begin to matter. Courts may err in their convictions, and the succumbing party may appeal the decision for legitimate or fraudulent reasons. Anticipating appellate review, judges likely adapt their efforts in legal reasoning appropriately, which in turn affects contract verification and party behavior. In other words, the theory of contractual moral hazard and optimal contracting cannot be separated from the question of judicial agency. In this paper, we integrate a model of judicial behavior into a contract game and study the effects of different judicial stereotypes on contract verification and outcomes.

Our analysis joins a growing body of literature on court errors and judicial behavior. One strand of research has primarily studied the external restraints on contract verification and

¹ From an economic perspective, a contract is the sum of constraints imposed on the strategic behavior of parties by the prevailing institutional setting. An introduction to contract theory provides SALANIÉ (1999).

imperfect enforcement by an adjudicator (“inaccuracy problem”). The judicial inaccuracy in legal enforcement and thus the inevitable presence of court errors in the interpretation of laws and facts is widely recognized among law and economics scholars (BECKER 1968; TULLOCK 1994; KAPLOW and SHAVELL 1994; RIZZOLLI and STANCA 2012). To mitigate judicial errors, a variety of factors must be considered during the legal proceedings, including the rules of procedure or evidence (BERNADO, TALLEY, and WELCH 2000; DEMOUGIN and FLUET 2008), the application of broad or specific legal terms (SHAVELL 2006) and the proficiency of the judge. The prevailing literature then applies a cost benefit analysis to weigh the benefits of increased accuracy against its social costs, thus specifying an optimal degree of accuracy in legal enforcement (KAPLOW and SHAVELL 1996; POLINSKY and SHAVELL 2007; BISSO and CHOI 2007; BOYER and PORINI 2010). Because market participants then contract in “the shadow of”² the court’s expected decision, contract theory clearly specifies further requirements for a socially desirable outcome: contractual compliance is achieved only if the judge distinguishes between legitimate claims and opportunistic lawsuits with a positive probability (KIRSTEIN and SCHMIDTCHEN 1997; ZHU and ZHANG 2000; GENNAIOLI 2011). Additionally, an increase in contractual incentives contingent on the anticipated probability of court errors is required to stabilize the mutual commitment, thus reducing the attainable social benefit of the single transaction (CHRISTMANN 2012).

Given the general inaccuracy of legal enforcement, a second strand of literature examines the role of the judge as a rational individual and maximizing decision maker (“judicial agency,” see POSNER 1986; RASMUSEN 1994; SHAPIRO and LEVY 1995; TIROLE 1999; GENNAIOLI and SHLEIFER 2007; FERNANDEZ and PONZETTO 2012). In a simple model of judicial effort, USMAN (2002) shows

² Contracting in “the shadow of” the court means that rational parties use the expected judgments as a contractible proxy, which is correlated with the true state of the transaction, to design an optimal contract. See, e.g., GENNAIOLI 2006.

that the discretion of a self-interested judge may lead to insufficient verifiability, even if verification costs are low. Furthermore, maximizing judges will exploit ambiguities and marginal cases to express their personal views (FON and PARISI 2003; GENNAIOLI 2011). In addition to these straightforward insights, career opportunities are usually considered the dominant economic incentive for a judge. Given that judges compete in the confined internal labor market of the judiciary, the ability of judges to handle their caseloads and to write convincing, unwavering verdicts becomes the central criterion to evaluate judicial performance on the job (POSNER 2005; SCHNEIDER 2005).³ MICELI and COSGEL (1994) demonstrate that a preference for reputation can restrain or inspire a judge's decision making, depending on the relationship between his private convictions concerning how the case should be decided and the expectations of his peers whom he seeks to satisfy. Stressing the aspect of reputation, LEVY (2005) argues that careerist judges tend to inefficiently deviate from the existing laws to signal competence through cutting-edge decisions. For GENNAIOLI and SHLEIFER (2008), judges driven by career incentives exploit the factual ambiguity of a case to align with the policy views of the higher instance court and to mitigate the risk of appeal. Recent work primarily concentrates on partisan appellate courts or legal innovations by a skilled trial judge to explain why careerist judges deviate in their rulings from precedents or their personal opinions.

Despite the different research areas, we find it intuitive that optimal party behavior and contractual verifiability in the face of error-prone courts interact with the personal ambition of the judge. The relevance of this interdependency becomes even more significant in legal systems with a higher instance court (or appeals court), which serves both as a means of error correction for the individual lawsuit and as a public performance control within the judicial hierarchy. In

³ Other repeatedly acknowledged criteria are a PhD or cited publications in law journals, see, e.g., SCHNEIDER (2005).

addition, any evaluation of alternative methods of judicial dispute resolution, such as a successful conciliatory hearing or moderation (see, e.g., MITUSCH and STRAUZ 2005), cannot be separated from the role of the arbitrator and its effects on contract compliance.

Thus, this paper applies a contract theoretic perspective to the behavior of self-interested trial judges in a two-level court system and analyzes the consequences of that behavior for contracting. Our approach relies on two major assumptions. First, we assume that utility-maximizing market participants react to anticipated judicial errors and optimally design contingent contracts. Second, the contract can be enforced by a self-interested trial judge if disputes arise. This judge may then either encourage a quick settlement based on the available evidence or engage in fact finding and eventually promulgate a ruling. The latter option allows the judge to more accurately evaluate the case but at the risk of an appeal at the higher court level. Based on the judge's preferences for dispute resolution, his judicial career and his leisure, the judge solves the case and implements a certain level of accuracy in enforcement. In this regard, we study the behavior of careerist, resolving and opportunist judges and evaluate the allocative effects of this judicial optimization on contracting.

The organization of this article is as follows: in chapter 2, we describe the basic framework of the applied model and the implementation of the optimal contract in "the shadow of" the court. The maximizing behavior of judges and the interaction with the appeals process is examined in chapter 3. In chapter 4, we study the conciliatory hearing as an alternative method of dispute resolution. In chapter 5, we discuss the relevance of our findings for legal policy, and chapter 6 concludes.

2 THE CONTRACT MODEL

2.1 Basic Setup

The theory of contracts provides a clear framework for a formal analysis of judicial decision making and its interaction with party behavior and contract design. Our model builds on existing works by ZHU and ZHANG (2000), and CHRISTMANN (2012), which demonstrate that contingent contracting in “the shadow of” the court comes at a social cost if the judicial verification of facts is imperfect.⁴

We model contracting in “the shadow of” maximizing courts as a non-cooperative game with the following three players: a seller, a buyer, and the judge. The seller (agent) can provide a good or service with quality q to the specifications of a potential buyer. In doing so the seller incurs production costs $C(q)$. The buyer (principal) has a valuation $V(q)$ for the good or service and may offer a price $P(q)$ to the agent. Suppose $C'(q) > 0$, $C''(q) > 0$, $C(0) = 0$ and $V'(q) > 0$. The functions $C(q)$ and $V(q)$ and the variable q are fully observable by both parties. In this setting, any allocation $[q^*, P(q^*)]$ forms a contingent contract. This agreement is honored if the agent chooses the desired quality q^* and the principal stipulates the assigned payment $P(q^*)$.

The contingent contract is potentially subject to dispute and breach: friction occurs if either the agent produces an inferior quality \bar{q} , with $\bar{q} < q^*$, or the principal chooses to pay a lower price $P(\bar{q})$, with $P(\bar{q}) < P(q^*)$. Given that relevant observations concerning the execution of the contract remain (bilateral) private information, the parties may strategically disagree on their true

⁴ As rational parties form rational expectations about court decisions and act accordingly, most transactions can be executed without actually entering courtroom. Such contracting in “the shadow of” courts is a major productive effect of adjudication. See KIRSTEIN, 1998, and GENNAIOLI, 2006.

performance ex post. A party will then litigate either because the opposing side performs badly but states otherwise (legitimate suit) or because the party knowingly intends to enforce a fraudulent claim (opportunistic suit). Both parties may seek legal enforcement through the final decision of the judge.⁵ Litigation, however, is a costly and risky procedure that produces enforcement costs L at the lower instance court and enforcement costs A at the appeals court level for each party. Additionally, any court may find it difficult to determine without doubt whether the contract has been honored, due to either ambiguities in the factual evidence or the limited knowledge of the judge. Eventually, the judge may be mistaken in his perception of the case and commit an error. We define the probability of a judicial error as ε , with $\varepsilon \in [0,1]$. If the court errs, it mistakenly turns down a legitimate lawsuit or enforces a fraudulent claim.

We assume that contracting parties form rational expectations about the probability that the judge will correctly or wrongly assess the factual evidence. For reasons of simplicity, we consider only the case of equal beliefs about the ruling of courts.⁶ Furthermore, suppose the principal has all of the bargaining power.⁷ Because there are potentially numerous agents who can

⁵ We exclude the possibility of an out-of-trial settlement in this analysis. Despite some distributive effects, the allocative result is not affected by this additional option to resolve the dispute (see proof 1 in the Annex).

⁶ In CHRISTMANN (2012), we show that diverging party beliefs can explain suboptimal end states of the contract, either inefficient output, breach or total abstention from contracting. Diverging beliefs are an explanation why litigation occurs even when parties are fully rational and contracts are completely contingent. However, parties have a strong incentive to update their expectations and reduce these deviations. If equal beliefs are achieved, the end state is stable.

Consequently, we consider only the latter case of equal party beliefs.

⁷ The strong position of the principal is also created by the advance performance of the agent. Such a specific investment into the business relationship, which generates little outside value, creates a relevant dependency on the part of the agent. As we focus on contract design and court proceedings, we apply the simplifying assumption of complete bargaining power.

provide the desired good or service, the buyer is able to offer a take-it-or-leave-it contract. Finally, parties are risk-neutral and have sufficient funds to bear unlimited liability.⁸

The noncooperative game of the modeled contract is divided into the following four stages, as displayed in Fig. 1: the contract offer by the principal (stage 1); the execution by the agent (stage 2); if friction arises, the ruling of the lower instance court (stage 3); and, lastly, the final decision of the appeals court (stage 4).

At stage 1, the buyer offers a contingent contract to the seller, determining the contracted quality of the good or service q^* and the price $P(q)$. If the seller accepts, he chooses his performance at stage 2, specified as the quality of the good or service. It is feasible that no friction occurs during the execution of the contract and the game ends. When a dispute occurs, however, both parties require legal enforcement and enter the courtroom. The judge will then render a court ruling (stage 3). If the succumbing party does not accept this verdict, the party files an appeal to the higher instance court. The appeals court then renders a final decision that confirms or supersedes the appealed verdict and ends the dispute (stage 4). In the following chapters, this complex decision making problem will be solved by applying backward induction.

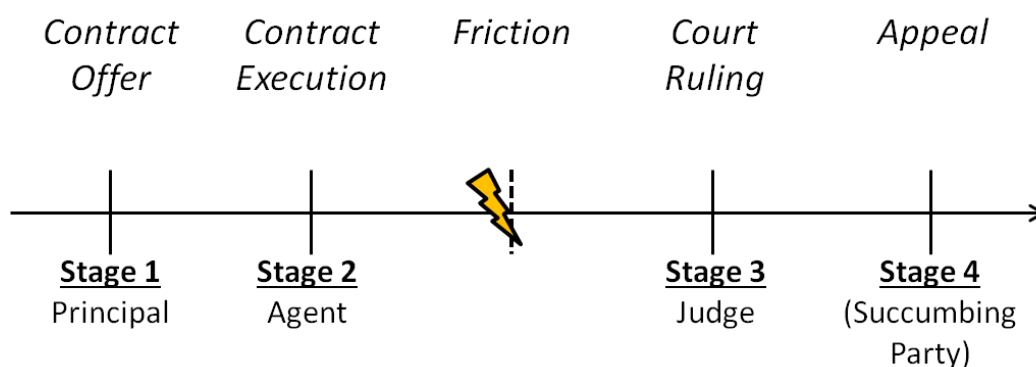


Figure 1. Basic Setup

⁸ See CHRISTMANN (2012) for formal proof that limited funds of the agent or risk-aversion do not stall the mechanism of the optimal contract.

2.2 Contracting in the Shadow of the Court

The imperfect verification of contractual terms and the probability of judicial errors affect the contracting behavior of parties who interact in “the shadow of” the court. Based on rational expectations about the outcome of a potential litigation process, the powerful principal designs an optimal contract to maximize his revenue. In this chapter, we apply backward-induction to solve this optimization problem with exogenous courts, which produce the distinct probability of error ε . Thus, we begin our analysis at the litigation stage (stage 3).⁹

In the case of a full-scale court ruling (stage 3), the judge enforces the contract $[q^*; P(q)]$ and determines the actual payment, contingent on the detected performance of the seller. Given the anticipated probability of a court error, the agent forms rational expectations about the outcome of the trial. A seller who honors the contract, with $q = q^*$, can expect to receive $E[\Pi_A] = (1 - \varepsilon_J)P(q^*) + \varepsilon_J P(\bar{q}) - L$, whereas opportunistic behavior, with $q = \bar{q}$, would yield to the agent $E[\Pi_A] = \varepsilon_J P(q^*) + (1 - \varepsilon_J)P(\bar{q}) - L$. A judge J will rightfully determine the true performance of the agent and thus order the correct payment with probability $(1 - \varepsilon_J)$. The court will err and stipulate an incorrect payment with the probability ε_J . Either way, litigation produces a cost L for the agent. It is intuitive that the cost of effort $C(q)$ is sunk at this stage.

Before any potential dispute and legal enforcement, the agent chooses his contract performance at stage 2. For the principal, the anticipated limited verifiability of the contract creates an agency problem, which he seeks to control. Because the agent expects to be sued when

⁹ The appeal process (stage 4) is not relevant for the parties from the ex ante perspective when both court levels are equally skilled to verify contractual claims, and proceedings become more costly at the appeal court level. See proof 4 in the Appendix.

breaking the commitment, the agent will only take advantage of the principal's lack of control if this situation does not place the agent in an unfavorable position in court. Thus, the seller will show the desired effort if $(1 - \varepsilon)P(q) + \varepsilon P(\bar{q}) - C(q) - L \geq \varepsilon P(q) + (1 - \varepsilon)P(\bar{q}) - C(\bar{q}) - L$. This condition determines the incentive compatibility constraint of the contingent contract as

$$P(q) - P(\bar{q}) \geq \frac{C(q) - C(\bar{q})}{1 - 2\varepsilon}.$$

A contract offer by the principal (stage 1) is accepted if an agent who honors the contract can cover his costs through the expected payment. Because of the specific investment of the agent and the risk of unfortunate litigation, the participation constraint $(1 - \varepsilon)P(q) + \varepsilon P(\bar{q}) - L \geq C(q)$ must be satisfied.

Consequently, the optimization problem of the maximizing principal is defined as

$$\Pi_p(q) = V(q) - P(q) \Rightarrow \max_q \quad (1)$$

$$P(q) - P(\bar{q}) \geq \frac{C(q) - C(\bar{q})}{1 - 2\varepsilon} \quad (2)$$

$$(1 - \varepsilon)P(q) + \varepsilon P(\bar{q}) - L \geq C(q) \quad (3)$$

The fulfillment of the side conditions (2) and (3) ensures that the determined profit maximizing quality q^* can be implemented through a contingent contract. Given that these side conditions are binding in the optimum, they can be inserted into condition (1). A differentiation with respect to q then yields the first order condition

$$\frac{V'(q)}{C'(q)} = \frac{1 - \varepsilon}{1 - 2\varepsilon} \quad (4)$$

Because the functions $V(q)$ and $C(q)$ and the expected court error ε are common knowledge, the profit maximizing quality q^* can be determined.¹⁰

To implement the desired behavior of the agent, the principal must establish the contingent price function $P(q)$, which satisfies both the participation constraint and the incentive compatibility constraint and maximizes his returns. In our setup, these conditions are fulfilled by the price function

$$P^*(q) = \begin{cases} \frac{C(q)}{1-2\varepsilon} - \frac{\varepsilon C(q^*)}{1-2\varepsilon} + L & , \text{if } 0 \leq q \leq q^* \\ \frac{(1-\varepsilon)C(q^*)}{1-2\varepsilon} + L & , \text{if } q > q^* \end{cases} \quad (5)$$

The distinction of cases in price function (5) cannot be avoided; a differentiable function $P(q)$ could not support the optimum q^* because $P'(q) > C'(q)$ for all q . The determined optimal price function $P^*(q)$ ensures that the desired output q^* is implemented and solves the agency problem because any breach of commitment by the agent is effectively sanctioned contingent on the probability of a court error ε .

In the following analysis, this model of contingent contracting in “the shadow of” courts allows us to evaluate the distinct impact of endogenous judicial behavior on the allocative outcome. In particular, the first-order condition (4) identifies to what extent the rational reactions of parties to the court behavior and the implicitly constituted probability of judicial error lead to a deviation from first-best optimality. Clearly, the implemented outcome of the contract increases with judicial accuracy in verification. However, only courts that are free of errors allow first-best contracts. Furthermore, the optimal price function (5) reveals that increasing court errors raise the price of the good at the optimum but also require a higher sanction to eliminate opportunistic

¹⁰ See Proof 5 in the Appendix for the complete calculation of the optimal contract.

behavior. Consequently, inaccurate court decisions make contracting more costly and the contingent contract less effective in stipulating sufficient incentives for compliance.

3 THE MAXIMIZING JUDGE

In this chapter, we integrate a model of judicial behavior into the contract game and examine how the appeals court and the litigants (stage 4) interact with the decision making of lower instance judges (stage 3). For reasons of simplicity, we assume that rational parties are capable of anticipating which particular judge will decide their case.¹¹

3.1 A Model of Judicial Behavior

Judges cannot enforce a contractual claim in a mechanical manner – they must *decide* a case because ideal conditions, such as perfect information, do not apply. Even when a legal rule is distinct and there is no room for interpretation, the court must bring the factual evidence in line with the legal claim. Natural limitations on the availability of facts, personal workload and the competence of the judge restrain court proceedings. A judge thus solves a case and renders a decision once *he is convinced* of the legal truth. In this regard, judges are rational decision makers even if contracts are fully contingent.

The behavior of judges cannot be separated from the question of incentives (see POSNER 1993). Using this intuition, we assume that judicial action is not driven by altruism. Judges,

¹¹ We find it reasonable to assume that parties are in principle able to attain this information. Usually, case allocation within courts follows transparent rules. Depending on the specific statutes of the court, new cases are assigned to individual judges according to definite areas of responsibility, such as postal codes, districts or the first letter of the defendant's name. Also, this simplification allows us to discuss distinct theoretical implications for the specific types of judges.

like other rational decision makers, choose the best option from a given set of alternatives and then maximize a private payoff function. We define this function as Π_j . In our model, we stylize the following incentives: dispute resolution, career concerns and the reduction of workload.

A judge pursues the resolution of disputes to restore the stability of legal relations. If the matter is settled and the court decision is not challenged by the parties, the litigation ends and the judge obtains the utility level U_1 . Career concerns become relevant when the decision of the judge is perceived by a supervisory board or other members of the judiciary, particularly by the higher instance court. The reputation of a judge is enhanced when the appeals court confirms his verdict and thus publicly appreciates his legal proficiency. This scenario is stylized by the utility level U_2 . However, a judge's chances of promotion are reduced when his decisions are repeatedly reversed by the higher court, a scenario captured by U_3 . Lastly, the reduction of workload is depicted by the incentive of the judge to reduce his costs of effort. The judge incurs linear fact-finding costs $f(h)$, with $f(h) = c_0 + c_1h$, contingent on the working hours h , with $h \in \mathbb{R}_+$, when he decides to gather additional evidence through testimonies and expert opinions during the legal proceedings.¹²

Irrespective of his personal motivation, a judge is trained to evaluate a case based on the available evidence and to determine the true end state of a contract. Because the implementation of this end state is the private information of the litigating parties and the court does not know with certainty whether a legal claim is legitimate or fraudulent, any judicial decision is prone to

¹² We assume a constant $c_0 > 0$ as the cost of an effort-less verdict: Even when the judge does not engage in fact finding before rendering his verdict, he has to spend a minimum amount of time in the trial hearings and has to write down his decision in proper legal terms.

error. Let the degree of available evidence identifying the true end state of the contract be defined by F , with $F \in [0,1]$. If $F = 1$, then all relevant facts are revealed, and there are no ambiguities in the evidence. In the case of $F < 1$, some evidence is known to the court, but other facts remain hidden, and uncertainty persists. The judge evaluates the given evidence and uses his judicial detection skills to control for the probability of error ε while distinguishing between legitimate and opportunistic claims.¹³ Assume $\varepsilon = \varepsilon(F)$ with $\frac{\delta\varepsilon}{\delta F} < 0$. We assume that the true nature of the claim does not affect the behavior of the judge. Consequently, the decision of the judge is prone to a type I error (type II error) with probability ε , given that the case is legitimate (fraudulent).¹⁴ The court then distinguishes between legitimate and opportunistic claims with a positive probability, if $1 - 2\varepsilon > 0$.

At the beginning of a trial, the judge receives the statement of claim from the filing party. This statement provides the initial level of evidence F_0 to the court. The judge can then exert work effort to generate more information in the case through testimonies, hearings and expert opinions. Thus, he achieves a higher level of evidence F_1 , with $F_1 > F_0$. We capture the remaining probability of error in his decision with the output function $\varepsilon(h) = (1 - F_0)e^{-h}$. The higher the level of initial evidence, the lower the probability of error will be. Trivially, perfect evidence

¹³ This refers to the concept of a ‘judicial detection skill’, which was first applied by KIRSTEIN and SCHMIDTCHEN (1997). This skill allows judges to detect compliance or opportunism correctly from a given set of evidence. In other words, skilled judges have a more accurate perspective to a case than their less skilled counterparts at the same level of effort. For reasons of simplicity, we leave an additional parameter that captures the degree of this judicial skill for the annex.

¹⁴ In our setup, we do not distinguish between type I and type II errors of the judge. In CHRISTMANN (2012), we provide a complete analysis about the specific effects of both types of errors on contracting behavior. For reasons of simplicity, we assume there are no partisan preferences among the judiciary, and the courts are equally competent and motivated to avoid each type of error with similar effort.

effectively rules out court errors. The exponential function e^{-h} stylizes the reduction of the probability of judicial error, if the judge engages in fact finding and exerts work effort $h > 0$.

Given the above specification, the contract game is perceived by a maximizing judge (see Fig. 2) as follows. When a party decides to litigate, the judge receives the initial statement of claim, containing the level of evidence F_0 . The court engages in costly fact finding, produces evidence F_1 and renders a decision. If this verdict remains unchallenged, the judge receives $\Pi_J^3 = U_1 - f(h)$. If the succumbing party files an appeal, the higher instance court reviews the judge's decision. When the court decision is confirmed, this yields the utility $\Pi_J^{4.1} = U_2 - f(h)$ and otherwise $\Pi_J^{4.2} = U_3 - f(h)$.

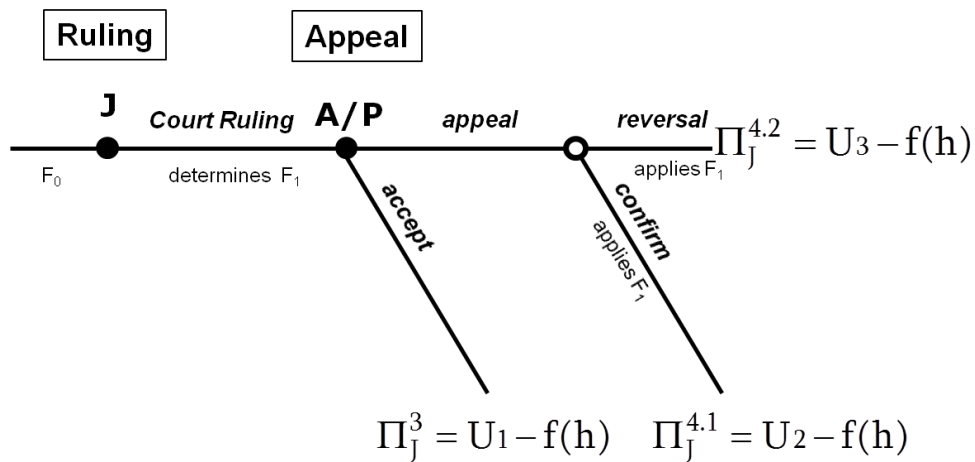


Figure 2. The Extensive Form of the Contract Game (Judge's Perspective)

3.2 The Decision to Appeal

A rational judge will take into account the expected consequences of his decision making, particularly the risk of appeal. If the judge's verdict is challenged by the litigants, the higher instance court will review the case. The court of appeals voids a judicial decision if the court is *convinced* that the lower instance court was mistaken in its judgment.

In our approach, we will stylize the institution of the appeals court as follows. The higher instance court has (at least) the same judicial detection skill as the lower instance judge and thus is (at least) equally competent in evaluating the facts of a case. Furthermore, the appeals court reviews the evidence provided during the previous court proceedings and examines whether the correct legal determinations were made. However, the appellate court is restricted to facts and matters that were presented at the lower instance court and does not engage in independent fact finding. Thus, the level of evidence F_1 is applied. Using this intuition, we assume that the decision of the appeals court is prone to the same probability of error ε . If the appellate court errs, it either voids a correct decision or confirms a previous court error.

Generally, the succumbing party will challenge the decision of the lower instance court and file an appeal if the expected benefits of voiding the previous decision outweigh the appeal costs. Such an appeal may be legitimate or opportunistic.

In the case of a legitimate appeal, the succumbing party has honored the contract and is strained by an erroneous decision of the lower instance court. The judge can expect a legitimate appeal if this is favorable to the litigant ex post: the condition

$$(1 - \varepsilon)[P(q^*) - P(\bar{q})] \geq A \tag{6}$$

must be fulfilled. With probability $(1 - \varepsilon)$, the appeals court would correctly reimburse a fulfilling agent (relieve a fulfilling principal) and yield the rent $[P(q^*) - P(\bar{q})]$. However, the rational judge has to anticipate that the contracting parties optimally react to the expected occurrence of judicial error and have designed their ex ante contract accordingly. Following the logic of applied backward induction, the decision of the judge at stage 3 will reflect previous decisions by the contracting parties at the earlier stages. In this regard, the stipulated ex ante price payments that

are now disputed, $P(q^*)$ and $P(\bar{q})$, were determined by the contract parties at stage 1 (see chapter 2.2). This optimal ex ante contract is contingent on the expected probability of court error with

$$P(q^*) = \frac{(1-\varepsilon)C(q^*)}{1-2\varepsilon} + L \quad \text{and} \quad P(\bar{q}) = \frac{C(\bar{q})}{1-2\varepsilon} - \frac{\varepsilon C(q^*)}{1-2\varepsilon} + L.$$

Let D be the actual, cost-based value in dispute with $C(q^*) - C(\bar{q}) = D$. Inserting $P(q^*)$ and $P(\bar{q})$ in condition (6) simplifies the ex post

$$\text{condition for a legitimate appeal to } \frac{D-A}{D-2A} \geq \varepsilon.$$

When we assume that an appeal is only heard, if the true value in dispute exceeds the costs of appeal, $D > A$, then this condition is fulfilled for any court error $\varepsilon \in [0,1]$. In other words, a legitimate appeal is always favorable to the succumbing party.

In the case of an opportunistic appeal, the succumbing party lost in the lower instance court for good reason but attempts to exploit judicial imperfection by challenging the court's decision. A rational judge can expect the litigant to file an opportunistic appeal if

$$\varepsilon [P(q^*) - P(\bar{q})] \geq A \tag{7}$$

applies. Only if the higher court errs can the opportunistic litigant enforce its fraudulent claim and gain the rent $[P(q^*) - P(\bar{q})]$. Given the anticipated contract design that defines $P(q^*)$ and $P(\bar{q})$, this scenario yields the threshold

$$\varepsilon \geq \frac{A}{D+2A} = \varepsilon_{\text{opp}} \leq \frac{1}{2}. \tag{8}$$

Consequently, opportunistic appeals will only be favorable when court decisions are not overly accurate. This situation is provided if and only if $\varepsilon \geq \varepsilon_{\text{opp}}$.

Proposition 1 *If court decisions are sufficiently accurate, $\varepsilon < \varepsilon_{\text{opp}}$, appeals are only filed with probability ε ; otherwise litigants always appeal. The exogenous threshold ε_{opp} increases (decreases) with the appeal costs (the value in dispute).*

As a first insight from these findings, the maximizing judge must consider that his behavior, which constitutes the probability of judicial error, endogenously affects the probability of appeal (see Fig. 3). If the judge commits a considerable error, $\varepsilon \geq \varepsilon_{\text{opp}}$, both legitimate and opportunistic appeals are favorable to a succumbing party. If he achieves a more accurate decision, appeals are only filed with the remaining probability of error.

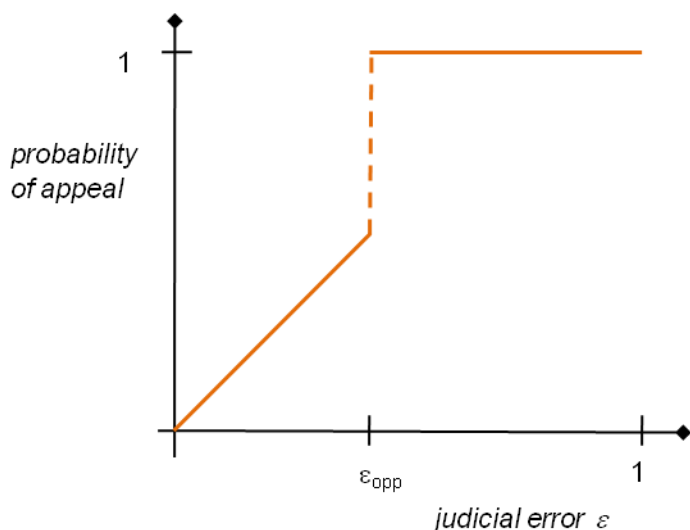


Figure 3. Judicial Error and the Probability of Appeal

3.3 Judicial Optimization

The maximizing judge will seek to optimize his private payoff function, given the expected consequences of his decision making. We will now determine the optimal judicial effort and identify the thereby constituted court error.

A judge J who decides to render a court decision must form rational expectations about the reactions of the litigants and the potential involvement of the higher instance court. Because the probability of appeal decreases significantly when court errors fall below the threshold ε_{opp} , we will conduct a case-by-case analysis as follows: when the succumbing party always appeals (Case I) and when there are only legitimate appeals (Case II).

If the judge stipulates a decision with a considerable constituted court error of $\varepsilon \geq \varepsilon_{\text{opp}}$, he can expect the succumbing party to always file an appeal (Case I). The end state Π_J^3 cannot be achieved. The judge's expected payoff contingent on judicial error is

$$\Pi_J = (1-\varepsilon)[(1-\varepsilon)U_2 + \varepsilon U_3] + \varepsilon[\varepsilon U_2 + (1-\varepsilon)U_3] - f(h) \quad (9)$$

If the lower instance judge renders a valid decision, which occurs with probability $(1-\varepsilon)$, he can expect the appeals court to correctly confirm this verdict with probability $(1-\varepsilon)$ or reverse the decision with probability ε . With probability ε , the lower level court is mistaken in its judgment, which may not be perceived by the higher instance court if it commits a similar error. However, if $(1-\varepsilon)$ applies, the appeals court will identify the court error and reverse the initial decision. Irrespective of the end state of litigation, the judge bears fact-finding costs $f(h)$. Inserting the judicial output function $\varepsilon(h) = (1-F_0)e^{-h}$ for ε , this yields the optimization problem

$$\Pi_J(h) = [2(1-F_0)^2 e^{-2h} - 2(1-F_0)e^{-h} + 1]U_2 + 2[(1-F_0)e^{-h} - (1-F_0)^2 e^{-2h}]U_3 - f(h) \Rightarrow \max_h \quad (10)$$

The first derivative then identifies the first-order condition as

$$\Pi_J'(h) = [-4(1-F_0)^2 e^{-2h} + 2(1-F_0)e^{-h}]U_2 - 2[(1-F_0)e^{-h} - 2(1-F_0)^2 e^{-2h}]U_3 - c_1 \stackrel{!}{=} 0 \quad (11)$$

Applying the completing-the-square formula, the optimal effort h^* for the fact-finding judge J in face of certain appeal is

$$h^* = (-1) \cdot \ln \left[\left[-\sqrt{\frac{4c_1 + [U_3 - U_2]}{[U_3 - U_2]}} + 1 \right] \frac{1}{4(1-F_0)} \right] \quad (12)$$

and the constituted court error is $\varepsilon_J = \frac{1}{4} \left[1 - \sqrt{\frac{4c_1 + [U_3 - U_2]}{[U_3 - U_2]}} \right]$.¹⁵

¹⁵ See Appendix, Proof 2 that h^* is a maximum and the only solution of the completing-the-square formula.

If the judge stipulates a decision with a low constituted court error, $\varepsilon < \varepsilon_{\text{opp}}$, the judge can expect the succumbing party to file an appeal only if the judge errs in his decision (Case II). The verdict is hence challenged only with probability ε . The judge's expected payoff contingent on judicial error is then

$$\Pi_J = (1 - \varepsilon)U_1 + \varepsilon^2 U_2 + \varepsilon(1 - \varepsilon)U_3 - f(h) \quad (13)$$

The lower instance judge can now expect the litigants to accept his decision in the case of a correct verdict, which occurs with probability $(1 - \varepsilon)$. If the judge errs in his judgment with probability ε , the appeals court may erroneously confirm this decision with probability ε but will correctly detect the court error and reverse the verdict with probability $(1 - \varepsilon)$. Again, the judge bears fact-finding costs $f(h)$ irrespective of the end state. Inserting the judicial output function for ε yields the judicial optimization problem

$$\Pi_J(h) = U_1 + (1 - F_0)e^{-h}[U_3 - U_1] + (1 - F_0)^2 e^{-2h}[U_2 - U_3] - f(h) \Rightarrow \max_h! \quad (14)$$

The first derivative identifies the first-order condition as

$$\Pi_J'(h) = -(1 - F_0)e^{-h}[U_3 - U_1] - 2(1 - F_0)^2 e^{-2h}[U_2 - U_3] - c_1 \stackrel{!}{=} 0 \quad (15)$$

The optimal effort h^* for a fact-finding judge J, expecting appeals to occur with probability ε , is

$$h^* = (-1) \cdot \ln \left[\frac{-\sqrt{(-8[U_2 - U_3]c_1 + [U_3 - U_1]^2)} - [U_3 - U_1]}{4(1 - F_0)[U_2 - U_3]} \right] \quad (16)$$

and the constituted court error is $\varepsilon_J = \frac{-\sqrt{(-8[U_2 - U_3]c_1 + [U_3 - U_1]^2)} - [U_3 - U_1]}{4[U_2 - U_3]}$.¹⁶

¹⁶ See Appendix, Proof 3 that h^* is a maximum and the only solution of the completing-the-square formula.

3.4 Solving the Puzzle: Judicial Stereotypes

The applied model of judicial behavior allows us to describe how incentive-driven judges make efficient use of their professional abilities and optimally react to external factors, such as the available evidence or the risk of appeal. To reduce complexity, we will use three stereotypes of judicial behavior to capture the way in which certain types of judges, in contrast to their colleagues, will pursue the discussed incentives and implicitly determine the constituted court error. We will stylize resolving judges (RJ), opportunist judges (OJ) and careerist judges (CJ).

The RJ seeks legal stability and dispute resolution. This desired end state is impeded by ongoing proceedings, in particular when they lead to a reversal at the higher instance court. We stylize the behavior of the RJ by $U_1 \geq U_2 > U_3$. Given the initial statement of claim F_0 , the RJ solves the optimization problem

$$\Pi_{RJ} = \begin{cases} (1-\varepsilon)[(1-\varepsilon)U_2 + \varepsilon U_3] + \varepsilon[\varepsilon U_2 + (1-\varepsilon)U_3] - f(h) & \text{if } \varepsilon \geq \varepsilon_{opp} \\ (1-\varepsilon)U_1 + \varepsilon^2 U_2 + \varepsilon(1-\varepsilon)U_3 - f(h) & \text{if } \varepsilon < \varepsilon_{opp} \end{cases} \quad (17)$$

Thus, the RJ implicitly chooses to constitute the judicial error

$$\varepsilon_{RJ}^* = \begin{cases} \frac{1}{4} \left[1 - \sqrt{\frac{4c_1 + [U_3 - U_2]}{[U_3 - U_2]}} \right] & \text{if } \varepsilon \geq \varepsilon_{opp} \\ \frac{-\sqrt{(-8[U_2 - U_3]c_1 + [U_3 - U_1]^2)} - [U_3 - U_1]}{4[U_2 - U_3]} & \text{if } \varepsilon < \varepsilon_{opp} \end{cases} \quad (18)$$

Proposition 2 *Judges who prefer sheer dispute resolution to confirmation by a higher court are accurate fact finders in case of a ruling, $\varepsilon_{RJ}^* < \varepsilon_{opp}$. The preference for dispute resolution is a stronger driver of judicial accuracy than the aversion to reversal under appellate review.*

To successfully resolve the legal dispute, the RJ strives for judicial accuracy when deciding a case. Consequently, the RJ exerts high effort in fact finding both to effectively rule out opportunistic appeals, which is achieved if the judge implements a low judicial error with $\varepsilon_{RJ}^* < \varepsilon_{opp}$, and to reduce the probability of appeals even further through a more accurate verdict. Thus, he will constitute a judicial error in the interval $(0, \varepsilon_{opp})$.¹⁷

The OJ is a professional cost-minimizer who seeks to handle an assigned case with minimum work effort. The OJ is not interested in the consequences of his decision, although he judges every case according to his legal conviction. We stylize the opportunist judge with $U_1 = U_2 = U_3$. Given the initial statement of claim, the OJ solves the optimization problem

$$\Pi_{OJ} = U_1 - f(h) \tag{19}$$

Consequently, the OJ always chooses to constitute the considerable error $\varepsilon_{OJ}^* = (1 - F_0)$. This judge will exert no work effort in gathering additional evidence to consolidate a case. In other words, the accuracy of his decisions relies completely on the exogenous level of evidence.

The CJ is driven by his desire to demonstrate excellence to his peers to promote his career. Because the appeals court may publicly evaluate a court decision, if the verdict is challenged, the appeals process becomes a crucial element of this judge's consideration. Therefore, the CJ enhances (damages) his reputation when his decisions are confirmed (reversed) by the higher

¹⁷ One exception has to be made: As the threshold for opportunistic appeals is contingent on the value in dispute and the appeal cost only, it is imaginable that the threshold ε_{opp} is extremely low, e.g. when appeal costs are close to zero. Given constant fact-finding costs, the RJ will then only be able to implement a low judicial error outside a very small interval $(0, \varepsilon_{opp})$. We regard this result as negligible, as this case also implies that every single court decision is appealed.

instance court.¹⁸ We stylize the careerist judge with $U_2 > U_1 > U_3$.¹⁹ Given the initial statement of claim, the CJ solves the optimization problem

$$\Pi_{CJ} = \begin{cases} (1-\varepsilon)[(1-\varepsilon)U_2 + \varepsilon U_3] + \varepsilon[\varepsilon U_2 + (1-\varepsilon)U_3] - f(h) & \text{if } \varepsilon \geq \varepsilon_{opp} \\ (1-\varepsilon)U_1 + \varepsilon^2 U_2 + \varepsilon(1-\varepsilon)U_3 - f(h) & \text{if } \varepsilon < \varepsilon_{opp} \end{cases} \quad (20)$$

Thus, the CJ implicitly chooses to constitute the judicial error

$$\varepsilon_{CJ}^* = \begin{cases} \frac{1}{4} \left[1 - \sqrt{\frac{4c_1 + [U_3 - U_2]}{[U_3 - U_2]}} \right] & \text{if } \varepsilon \geq \varepsilon_{opp} \\ \frac{-\sqrt{(-8[U_2 - U_3]c_1 + [U_3 - U_1]^2)} - [U_3 - U_1]}{4[U_2 - U_3]} & \text{if } \varepsilon < \varepsilon_{opp} \end{cases} \quad (21)$$

with a judicial error of $\varepsilon = \frac{A}{D + 2A}$, if $\varepsilon = \varepsilon_{opp}$.

Proposition 3 *Judges who prefer confirmation by a higher court to sheer dispute resolution allow for deliberate inaccuracy, $\varepsilon_{CJ}^* \geq \varepsilon_{opp}$, in their rulings. The lower the threshold ε_{opp} , the greater the temptation of the careerist to induce ungrounded appeals despite appellate review.*

¹⁸ There is a growing body of literature that examines how judges adapt to an evaluation of their performance while they compete for promotion, see MISCELI and COSGEL (1994), POSNER (2005), SCHNEIDER (2005), LEVY (2005), GENNAIOLI and SHLEIFER (2008). It is frequently concluded that reputational concerns about a potential appeals process can both restrain or inspire judicial decision-making. In line with these findings, we are convinced that judges will behave in a way to avoid being reversed by the higher instance court. We find it also reasonable to assume that a trial judge whose verdicts are confirmed by the higher court is likely to be perceived in a more positive way by the supervisory board of the trial court than his colleagues who do not attract attention. In addition, trial verdicts are usually hardly noticed outside the local community, but decisions that are upheld and published by the higher courts can be expected to be cited by other judges, and may even serve as a precedent for future jurisdiction. Judges who have a preference for reputation are likely interested in such achievements.

¹⁹ This assumption will be further specified, if required for some conclusions. The gains (and losses) from the appeals process have to be noticeable for the CJ compared to the status quo in order to compensate for a higher probability of being revised by the appellate court, given the strategy ‘always appeal’.

In contrast to the RJ, the CJ relies on the involvement of the higher instance court to obtain the highest returns, which is the utility level U_2 . The CJ thus usually prefers an end state of litigation in which opportunistic appeals occur, given a certain amount of reputational gains at the appellate level. This preference is intuitive because the chances of a judge's decision being confirmed by the appeals court are highest if the appeal itself is opportunistic and legally ungrounded. In other words, a judge cannot enhance his reputation by deliberately promulgating erroneous decisions and producing legitimate appeals because these verdicts will potentially be reversed by the higher court. Consequently, the CJ will usually seek to implement the lowest possible judicial error that still encourages opportunistic appeals: $\varepsilon_{CJ}^* = \varepsilon_{opp}$.²⁰ Thus, he controls the risk of reversal and maximizes his reputational gains.

3.5 Efficiency Results

In this chapter, we described the behavior of rational judges who anticipate the reactions of litigants and appeals courts to their judicial decisions and then maximize a private payoff function. A judge concludes a case by a court decision, and his behavioral scheme can be described by one of the three following judicial stereotypes: resolving judges, opportunists or careerists. At this point, our analysis yields the following insights:

First, inaccurate court decisions make contracting more costly, and judicial incentives are at work to manipulate this deviation from optimality. If the only method of concluding a lawsuit is through the decision of the court, then judges who primarily seek dispute resolution will achieve the most accurate decisions. Judges who are primarily concerned with the effects of the potential

²⁰ If the threshold is extremely low, e.g. due to a tremendous value in dispute or minimal appeal costs, the CJ will not implement the corner solution, but an error with $\varepsilon > \varepsilon_{opp}$.

appeals process on their personal record will deliberately promulgate less-accurate verdicts and thus cause less-efficient contracts. We find that the RJ usually renders decisions with the lowest probability of error, defined by the interval $[0, \varepsilon_{opp}]$, followed by the careerist, usually with a distinct probability of error $\varepsilon_{CJ}^* = \varepsilon_{opp}$, whereas the opportunist judge does not exert any effort to reduce the probability of judicial error (see Fig. 4). Optimal contracts, which are contingent on judicial error (4) and are concluded in “the shadow of” the court, eventually implement the respective second-best outcome, $q^*(\varepsilon_{RJ}) > q^*(\varepsilon_{CJ}) > q^*(\varepsilon_{OJ})$.²¹ From a welfare perspective, this clearly indicates the economic value of court proceedings through fact-finding judges, of the judicial detection skill and of the attainable level of evidence.²² Furthermore, less-accurate decisions strain the legal system with costly appeals, particularly with ungrounded claims. It thus appears to be more beneficial if judges focus primarily on dispute resolution instead of the effects of a potential appeals process. In chapter 4, we put this intuitive result into perspective.

Second, the first-order condition (4) identifies the consequences of limited verifiability on the contracting process. Once the judicial error reaches the margin in which $\varepsilon \geq 0,5$, there is no solution to the depicted optimization problem. In other words, a court that cannot distinguish between legitimate or opportunistic claims with a positive probability, which requires $1 - 2\varepsilon > 0$, does not produce a contractible proxy to the parties. If the initial level of evidence F_0 is low, because the case is highly complex or ambiguous, then judicial fact-finding is not only socially preferable but is a prerequisite for contracting.

²¹ There are two exceptions to this outcome: First, if the threshold ε_{opp} is extremely low, the CJ will implement a lower judicial error than the RJ. As this only happens, when appeal costs are close to zero (See footnote 20), we neglect this case. Second, in the trivial case that evidence is nearly perfect, all judges will achieve the same outcome.

²² Find the effects of the judicial detection skill on the probability of error explained in proof 6 in the Appendix.

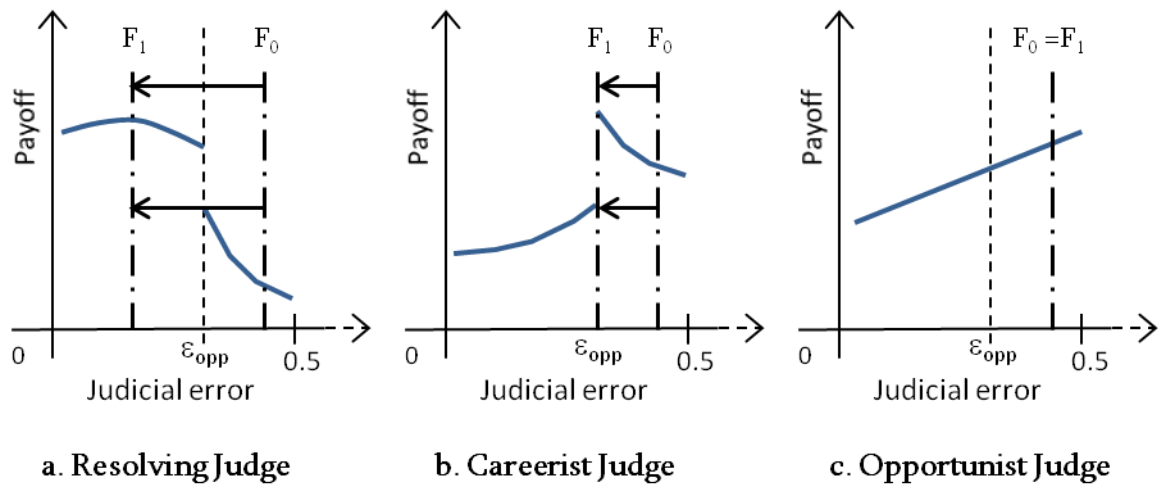


Figure 4. Fact-finding and Judicial Ambition.

4 CONCILIATION AND SETTLEMENT

In this chapter, we integrate the option of an in-trial settlement into our model. We examine how the behavior of maximizing judges is affected by this alternative method of dispute resolution and under what conditions a conciliatory hearing can be socially favorable.

4.1 Modified Contract Game

Consider a conciliatory hearing in the courtroom prior to the beginning of a trial. The rational judge has two options to solve the case and end the legal dispute: he may eventually announce a judicial decision, as analyzed in chapter 3, or he may convince the litigants of the merits of an early settlement during the hearing.²³ In the case of successful conciliation, the game ends at stage

²³ Surprisingly, the role of the judge as a mediator has received little attention in the recent literature. Without referring to courts specifically, KRISHA and MORGAN (2004) find that mediators could alleviate the revelation of truthful information during negotiations. MITUSCH and STRAUZ (2005) concede that for conciliation to work, any mediator must have earned himself a reputation for fairness and impartiality and must stay clear of personal incentives.

3C; otherwise, litigation proceeds to the court ruling (stage 3R) and potentially to the appeals process (stage 4). The modified contract game is illustrated in Fig. 5.

Assume the judge may seek conciliation instead of a ruling once he receives the initial statement of claim. The judge will then propose a settlement to the litigants based on his perception of the case. Because the parties know that this suggestion is based on the professional opinion of the judge, who will also be the decision maker if court proceedings continue, the judge is in a strong position to successfully mediate. We therefore assume that the decision of the judge will affect whether conciliation is achieved. As before, the judge may err in his conviction. We apply the judicial output function $\varepsilon = (1 - F_0)$ to capture the implications of evidence on the resulting probability of judicial error. In contrast to fact finding, the mediating judge cannot exert effort to improve the level of the facts. The accuracy of his perception is thus limited by the conclusiveness of the initial evidence F_0 . We assume the judge bears mediative costs m , with $m > 0$, when he attempts to mediate between the litigants.

The litigants will form rational expectations about the outcome of a conciliatory hearing once they anticipate such active encouragement on the part of the judge. The fulfilling agent, for example, can then expect to receive the settlement payment $E[\Pi_A] = (1 - \varepsilon)P(q) + \varepsilon P(\bar{q})$ with $\varepsilon(F_0)$.²⁴ Although rational parties expect a court ruling to be more accurate due to the higher level of facts, $\varepsilon(F_1) < \varepsilon(F_0)$, successful conciliation saves litigation expenses ($L = 0$). Given that the parties know the type of judges presiding over a court and form rational expectations about judicial

²⁴ We believe that a professional judge will not just take the mean of the value in dispute as a settlement proposal. A judge would rather depict his legal evaluation of the case to the parties and make a suggestion based on his judicial perception. As the evidence is usually limited at the beginning of a trial, however, the probability of error remains higher at this stage and will thus show a tendency towards the mean value.

behavior, the parties anticipate whether a legal dispute will be resolved at stage 3C or at stage 3R and expect the respective outcome. Thus, the parties rationally believe that either $\varepsilon(F_0)$ or $\varepsilon(F_1)$ will apply.

For the mediating judge, convincing the litigants of the settlement offer solves the legal matter swiftly. The judge does not incur fact-finding costs and receives a certain payoff $\Pi_j^{3C} = U_1 - m$. Conciliation thereby effectively eliminates the risk that the judge's decision will be challenged afterward. However, this option is only favorable to the judge if the mediative costs m are bearable. When the party positions become entrenched, the mediative costs may be prohibitive and may effectively rule out this option for the judge.

Applying our model of judicial behavior, the option of a settlement in the conciliatory hearing extends the utility function of the three types of judges as follows

$$\Pi = \begin{cases} \dots & \text{if \{ruling\}} \\ U_1 - m & \text{if \{conciliation\}} \end{cases} \quad (22)$$

Given this additional alternative, a distinct threshold can be determined for the different maximizing judges, defining when it is privately optimal to push for {conciliation} instead of launching costly court procedures by choosing {ruling}. Because the conciliatory costs m relate to the degree of opposition between the parties and thus indicate the difficulty of obtaining a settlement, we solve for m and find

$$\begin{aligned} m_{RJ} &< \varepsilon U_1 - \varepsilon^2 U_2 - \varepsilon(1-\varepsilon)U_3 + f(h^*) \wedge U_1 \geq U_2 \\ m_{OJ} &< c_0 \end{aligned} \quad (23)^{25}$$

²⁵ The lower the mediative costs m , the easier will a judge choose {conciliation}. For the RJ, the lowest possible threshold is defined by $m_{RJ} < \varepsilon(1-\varepsilon)[U_1 - U_3] + f(h^*)$, if $U_1 = U_2$. The more the RJ prefers dispute resolution to the effects of

$$m_{CJ} < U_1 - U_2 + 2\varepsilon(1-\varepsilon)[U_2 - U_3] + f(h^*) \wedge U_1 < U_2$$

Proposition 4 *Judges who prefer sheer dispute resolution to confirmation by a higher court tend to conciliate more often, as $m_{RJ}(\varepsilon) > m_{CJ}(\varepsilon)$ applies.*

Generally, the three types of judges will seek conciliation if the mediative costs m fall below the expected private loss of continued proceedings. This loss occurs when the judge engages in fact finding but eventually renders a false decision. If mediative costs exceed this level, conciliation is not favorable to the judge and he will seek to end the legal dispute by a court ruling. We find that judges who focus on dispute resolution tend to be more eager to implement an in-trial settlement than careerist judges who focus on appeals and their personal record.²⁶ More specifically, the CJ will only conciliate if mediative costs are considerably low because the desired reputational effect requires the involvement of the higher instance court. As long as the expected reputational gain through an appeals process in comparison to the certain outcome of conciliation outweighs the expected risk of this option and the additional costs of effort, the CJ will favor a court ruling. The RJ, however, will often tolerate moderate levels of mediating costs because the conciliatory hearing is a shortcut to dispute resolution. In the case of conciliation, both types of judges produce the same considerable probability of error $\varepsilon = (1 - F_0)$, and cannot distinguish themselves from the performance of the OJ with regard to judicial accuracy.

potential appeal, $U_1 > U_2$, the more will the judge seek a quick settlement. To the OJ, conciliation is favorable, if the costs of mediation fall below the cost of rendering a quick verdict, with $h^* = 0$.

²⁶ This statement indicates the general tendency for the behavior of the two types of judges. As the CJ and the RJ will implement different probabilities of error, it is possible that the CJ will seek conciliation before the RJ does. This happens only, however, when an appeal is considerably risky for the CJ compared to the expected gains.

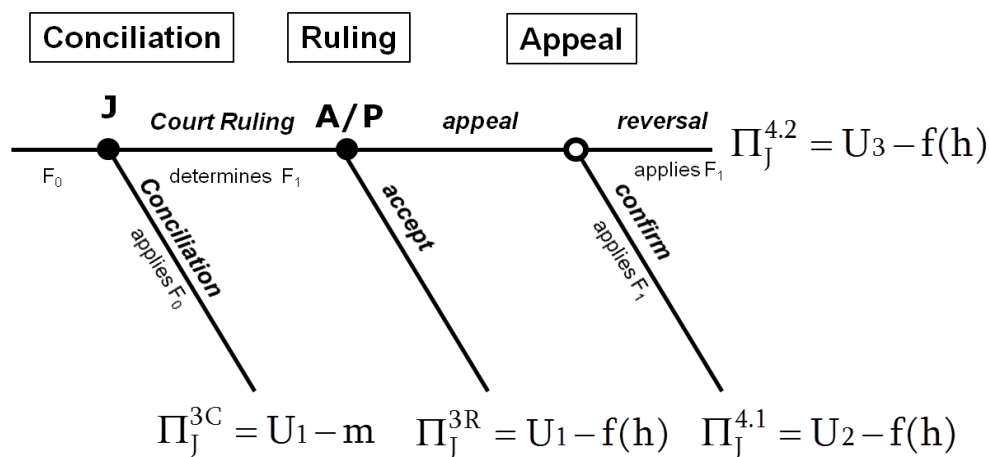


Figure 5. Contract Game with Conciliation (Judge’s Perspective)

4.2 Implications

The institution of the conciliatory hearing as a means of dispute resolution affects the optimal behavior of the rational judges. Judges who seek to end legal conflicts may no longer forcefully engage in fact finding and thereby increase contract verifiability. Instead, they implement less accurate settlements and thus fail to facilitate more efficient ex-ante contracts. Judges who focus on their personal records may push for a court ruling, even though the party positions are hardly entrenched and mediation can be swiftly obtained. Either way, the private choice of the judge does not necessarily fall in line with efficiency considerations. Because their incentive to determine facts during legal proceedings and risk a potential appeal is relatively stronger, careerist judges can be expected to show a more constant effort to improve court accuracy in contrast to their colleagues. Careerists may still cause costly appeals in the case of litigation. Nonetheless, numerous market transactions that are smoothly executed will benefit from the general increase in contract verifiability, as the careerist has a reputation for hard-line fact finding instead of compromise settlements. Consequently, we find that a judicial focus on dispute resolution alone does not necessarily guarantee that a socially favorable level of verifiability is implemented by litigation with a conciliatory hearing.

Following this insight, our approach allows us to identify the allocative effects of judicial conciliation in contrast to a court ruling. Whereas the judge can encourage mediation at the beginning of the trial, which saves litigation and potential appeal costs, he does not use the beneficial effects of fact-finding and a more accurate court decision. Contracting in “the shadow of” the court amplifies this welfare loss because the reduced judicial accuracy affects every executed transaction. We define the net value of a transaction as $B_i = V[q(\varepsilon_i)] - C[q(\varepsilon_i)]$ with $i \in \{R; C\}$ for ruling and conciliation. Assuming n transactions in the market, we find

Proposition 5 *Dispute resolution through a conciliatory hearing is socially favorable if and only if the condition $f(h^*) + 2L + 2\varepsilon_R A - m > n \cdot [B_R - B_C]$ holds for the gains of judicial fact finding and the costs of court proceedings.*

From an economic perspective, several aspects define the efficiency of the conciliatory hearing. For example, legal proceedings may turn out to be tremendously costly because the anticipated fact-finding, litigation and appeal costs $f(h^*)$, L and A are high. Thus, conciliation can be a cost-efficient alternative. In addition, a high level of initial evidence provides the mediating judge with a quick and clear perspective on the case and facilitates an accurate settlement proposal. Any additional fact finding will then yield only marginal improvements, as described by the spread $[B_R - B_C]$, compared to its costs. Lastly, cases that distinguish themselves from the standard transactions in the market lead to fewer inefficiencies if judicial fact-finding is not used because the resulting lower court accuracy is only a proxy for a limited number of n similar contracts.

Nevertheless, we identify a significant factor that clearly leads to inefficiencies in the course of a conciliatory hearing: limited or very ambiguous evidence in a case requires fact-finding

judges to alleviate significant court errors and mitigate their economic effects. This productive work of courts is not used during conciliation. Under these circumstances, contracting in “the shadow of” the (mediating) court must rely on inaccurate proxies and leads to transactions with a limited output. This negative effect of conciliation on market allocation must be particularly stressed. In some fields of law in which evidence is typically diffuse and difficult to obtain, such as labor law, conciliation has become an appealing method for litigants and judges to end very complex lawsuits. As a consequence, fact-finding and the generation of evidence may then not be applied in cases where they are needed most to ensure sufficient contract verifiability in the market.

5 DISCUSSION: CAREERIST JUDGES AND THE APPEALS PROCESS

Maximizing judges will reflect on the consequences of their actions for their personal career. The traditional literature (see, e.g., MICELI and COSGEL 1994; WHITMAN 2000; FERNANDEZ and PONZETTO 2012) frequently concludes that it is mainly the content and rhetoric of the court opinion that allows a self-interested judge to express his personal beliefs and signal proficiency to peers. In civil law systems, however, we deem this form of mutual communication among trial judges and evaluators to be of lesser relevance as lower instance courts usually do not create precedents and mainly observe the jurisdiction of the appellate courts. Consequently, judicial signaling and the “self-advertisement” of careerist judges (MICELI and COSGEL 1994, p. 32) only becomes effective if the decision of the lower instance court is actually challenged and the appeal is heard by the higher court. Following the work of LEVY (2005), who finds that the monitoring possibilities for an evaluator are endogenous in appellate review, we thus integrate the rational

reaction of the litigants into our analysis. Distinct from previous research, we keep the focus on judicial fact-finding and consider both legitimate and opportunistic lawsuits in the legal system.

In this regard, we find that a careerist judge deliberately implements a certain degree of judicial error in his decisions. Because the disputed contract is fully contingent and thus the legal rule is not silent or ambiguous in any way, the judge exploits the factual uncertainty of the case to encourage the succumbing party to file an opportunistic appeal. More specifically, the litigants do not have to believe that the judge is wrong, only that it will pay off to appeal the verdict. Although the careerist judge dislikes error and despite the institution of the appeals process as a “means of error correction” (SHAVELL, 1995, pp. 379), the endogenous party decision to challenge a verdict then leads to the following contra-intuitive effect: to maximize the tradeoff between the risk of reversal and the probability of confirmation in the appeals process, the careerist judge does not implement more accurate decisions, but seeks to induce the lowest share of legitimate appeals compared to the total number of filed appeals. In addition to the observation of LEVY (2005), this finding also builds on the insights of GENNAIOLI and SHLEIFER (2008), who argued that fact-finding judges exert fact discretion to control the risk of appeal. Our setup consolidates both findings and shows that careerist judges may skillfully use factual ambiguities to maximize their returns from the appeals process itself. In contrast to the findings of LEVY (2005, p. 287), careerists in our study are more subtle and do not have to publicly deviate from previous jurisdiction to create this reputational gain. Therefore, judges’ maximizing but socially inefficient fact-finding behavior is hardly recognized as a deliberate pursuit of recognition.

In courts with careerist judges, our findings predict an inefficiently high number of total appeals, including a major share of ungrounded cases. Despite the simplicity of our setup, this outcome questions the commonly asserted function of the appeals process as an institution that

corrects errors and sorts out illegitimate claims (SHAVELL 1995). These results also indicate that judicial career ambition and its effects on state verification may not be limited to a few judges who have become popular for cutting-edge decisions and eloquent rhetoric; instead, the effects are likely more widespread, affecting legal proceedings in a relevant but subtle way.

6 CONCLUSIONS

In this paper, we build a model of judicial state verification in which self-interested trial judges are confronted with the factual ambiguity of an assigned case and seek a (privately) optimal strategy to conclude the dispute. In contrast to the previous literature, we apply a contract-theoretic approach to stylize the interaction between the judge and rational litigants in a two-level court system and identify the consequences of judicial agency for contracting in “the shadow of” the court. As the key result of our analysis, we find that self-interested judges support their optimal strategy by tipping the scales of the trial outcome and adapting their work effort. We show that even if judges generally dislike errors and have no personal preferences for a specific party, the effects of judicial agency manipulate the implemented court accuracy and affect the contract outcome. Judges who primarily seek dispute resolution have a strong incentive to end any legal conflict through conciliation, which limits contractual verifiability, although the judges could be accurate fact-finding jurists. Careerist judges prefer a court ruling and show moderate fact-finding effort but allow for a deliberate degree of judicial error in their decisions. Judges who intend to minimize their work effort must completely rely on their expertise, seniority and intuition to achieve bearable results.

Our analysis also sheds new light on judicial career ambition and the economic repercussions of a hierarchical court system. Because appellate courts are designed not only to

correct the errors of previous jurisdictions but also to publicly provide information about the performance of a judge, a careerist judge prefers to avoid mistakes and to have his opinions confirmed by the higher court to increase his reputation. Because of the endogenous interrelationship between the party's decision to appeal and a judge's work effort, the careerist judge performs a feat to maximize his returns; he exploits the factual ambiguity of a case and, allowing for a deliberate inaccuracy in his rulings, encourages ungrounded appeals. The higher court will then have to reject these futile claims and thus acknowledge the proficient decisions of the trial judge. Consequently, a socially inefficient number of appeals is induced. Moreover, these implications contradict the traditional function of appellate courts to foster the accuracy of enforcement. Our findings suggest that the endogenous mechanism, which is exploited here by careerist judges, is inherent within any hierarchical court system. These principles also reflect the need for a more complex measurement of judicial performance, aside from statistics about caseload and appeal cases, to correctly evaluate career perspectives and to mitigate opportunistic behavior.

With regard to contract theory, we clearly identify the productive effects of court proceedings and distinct decisions by the judge. Given that factual ambiguities exist, we show that judicial inaccuracy leads to a deviation from first-best optimality. Judges who engage in fact finding to generate additional evidence whenever required enhance verifiability and contractual output in "the shadow of" the court. We also stress that these beneficial effects of accurate court decisions cannot be used in the case of successful conciliation. This insight is relevant for legal practice because in some fields of law in which evidence is typically diffuse and difficult to obtain, such as labor law, conciliation has become an appealing method by which litigants and judges end very complex lawsuits. We find that such a judicial tendency fails to improve the verifiability of contractual terms where it is needed and strains contract output in the respective markets.

Although conciliation can be advisable and socially efficient in certain circumstances, a more analytical perspective is required to determine whether the discrete decision making of judges actually considers these criteria.

FIGURE LEGENDS

Figure 1. Basic Setup

Figure 2. The Extensive Form of the Contract Game (Judge 's Perspective)

Figure 3. Judicial Error and the Probability of Appeal

Figure 4. Fact-finding and Judicial Ambition

Figure 5. Contract Game with Conciliation (Judge 's Perspective)

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APPENDIX

Proof of Proposition 1

If the appeal is legitimate, the probability of filing the appeal equals 1: If we assume $D > A$, the condition (6) always holds for the optimal contingent contract with $P(q^*)$ and $P(\bar{q})$. If the appeal is opportunistic, the probability of filing the appeal depends on court accuracy: The condition (7) under the optimal contingent contract holds only if $\varepsilon \geq \frac{A}{D+2A} = \varepsilon_{\text{opp}} \leq \frac{1}{2}$, with $\frac{\partial \varepsilon}{\partial A} > 0$ and $\frac{\partial \varepsilon}{\partial D} < 0$. Thus, in case of $\varepsilon \geq \varepsilon_{\text{opp}}$, an appeal is always filed independent of the true state of the claim. In case of $\varepsilon < \varepsilon_{\text{opp}}$, only legitimate appeals are filed. Court errors which lead to such a legitimate appeal occur with probability ε .

Proof of Proposition 2

The end state $\varepsilon < \varepsilon_{\text{opp}}$ in the optimizing problem (17) is always preferred by the RJ. Show $\Pi_{\text{RJ}}(\varepsilon < \varepsilon_{\text{opp}}) > \Pi_{\text{RJ}}(\varepsilon \geq \varepsilon_{\text{opp}})$:
 $(1-\varepsilon)U_1 + \varepsilon^2U_2 + \varepsilon(1-\varepsilon)U_3 > (1-\varepsilon)^2U_2 + \varepsilon(1-\varepsilon)U_3 + \varepsilon^2U_2 + \varepsilon(1-\varepsilon)U_3$. This can be simplified to $U_1 > U_2 + \varepsilon(U_3 - U_2)$. As $U_3 - U_2$ is always negative, the statement $U_1 > U_2$ is correct. Given $\Pi_{\text{RJ}}(\varepsilon < \varepsilon_{\text{opp}})$, the impact of the incentives dispute resolution and aversion to appeal on overall utility adhere to $\frac{\partial \Pi}{\partial U_1} = (1-\varepsilon) > \frac{\partial \Pi}{\partial U_3} = \varepsilon(1-\varepsilon)$. The higher U_1 , the lower the error $\varepsilon_{\text{RJ}}^*$, as

$$\lim_{U_1 \rightarrow \infty} \left(\frac{-\sqrt{(8[U_3 - U_2]c_1 + [U_3 - U_1]^2)} - [U_3 - U_1]}{4[U_2 - U_3]} \right) = 0.$$

Proof of Proposition 3

The CJ prefers 'always appeal'. Show $\Pi_{\text{CJ}}(\varepsilon < \varepsilon_{\text{opp}}) < \Pi_{\text{CJ}}(\varepsilon \geq \varepsilon_{\text{opp}})$:
 $(1-\varepsilon)U_1 + \varepsilon^2U_2 + \varepsilon(1-\varepsilon)U_3 < (1-\varepsilon)^2U_2 + \varepsilon(1-\varepsilon)U_3 + \varepsilon^2U_2 + \varepsilon(1-\varepsilon)U_3$. This can be simplified to $U_1 - \varepsilon U_3 < (1-\varepsilon)U_2$. The CJ will seek 'always appeal', if the required reputational gain is

sufficient, $U_2 > \frac{U_1 - \varepsilon U_3}{1 - \varepsilon}$. The lower the judicial error, the lower is the required reputational gain to compensate for the risk of appellate review. The CJ will implement the corner solution ε_{opp} , if

$$\varepsilon_{\text{CJ}}^* = \frac{1}{4} \left[1 - \sqrt{\frac{4c_1 + [U_3 - U_2]}{[U_3 - U_2]}} \right] \leq \frac{A}{D + 2A}, \text{ otherwise he produces a slightly higher error.}$$

Proof of Proposition 4

Assume the RJ : $U_1 > U_2$ and define $U_1 := A$; $U_2 := B$; $U_3 := C$. Assume the CJ : $U_2 > U_1$ and define $U_2 := A$; $U_1 := B$; $U_3 := C$. Assert the preference for the alternate endstates is equally strong for both judges, $A > B > C$, and the desired utility of the preferred endstate is sufficient as defined by Proposition 3 with $A > \frac{B - \varepsilon C}{1 - \varepsilon}$. Then show $m_{\text{CJ}}(\varepsilon) < m_{\text{RJ}}(\varepsilon)$:

$B - A + 2\varepsilon(1 - \varepsilon)[A - C] + f(h^*_{\text{CJ}}) < \varepsilon A - \varepsilon^2 B - \varepsilon(1 - \varepsilon)C + f(h^*_{\text{RJ}})$. This can be modified to $(1 + 2\varepsilon^2 - \varepsilon)A > (1 + \varepsilon^2)B - (1 + \varepsilon)\varepsilon C + f(h^*_{\text{CJ}}) - f(h^*_{\text{RJ}})$. As $f(h^*_{\text{CJ}}) - f(h^*_{\text{RJ}}) \leq 0$, we simplify to $A > \frac{(1 + \varepsilon^2)B - (1 + \varepsilon)\varepsilon C}{1 + 2\varepsilon^2 - \varepsilon}$. Given Proposition 3, this condition is always fulfilled for A. The term

$$\frac{(1 + \varepsilon^2)B - (1 + \varepsilon)\varepsilon C}{1 + 2\varepsilon^2 - \varepsilon} < \frac{B - \varepsilon C}{1 - \varepsilon} \text{ simplifies to } (-\varepsilon^2 + 3\varepsilon^3)C < (\varepsilon^2 + \varepsilon^3)B, \text{ and holds for } B > C.$$

Proof of Proposition 5

The social net value of conciliation is $n \cdot B_C - m$ for n transactions, which are executed in the shadow of the mediating court, and mediative costs m . The net value of court proceedings is $n \cdot B_R - f(h^*) - 2L - 2\varepsilon_R A$. Conciliation is beneficial, if $f(h^*) + 2L + 2\varepsilon_R A - m > n \cdot [B_R - B_C]$.

Proof 1 Allocative irrelevance of the out-of-trial settlement

Assume out-of-trial settlement costs s for each party with $s < L$. If the agent anticipates a court ruling, he will expect the payoff $(1 - \varepsilon)P(q) + \varepsilon P(\bar{q}) - L$. Thus, a powerful principal may offer an out-of-trial settlement payment $S \geq (1 - \varepsilon)P(q) + \varepsilon P(\bar{q}) - L + s$. Being compensated for the additional settlement costs, the agent is at least indifferent between accepting and rejecting the offer. A settlement is advantageous for the principal, as it cuts the stipulated payment by L (agent's costs) and additionally saves own litigation expenses L (principal's costs). As the powerful

principal has to bear the total settlement costs $2s$, this is only favorable as long as $s < L$ applies.

Contracting upon this settlement offer does not affect the FOC with $V'(q) - \frac{(1-\varepsilon)C'(q)}{1-2\varepsilon} = 0$.

Proof 2 Effort h^* is a local maximum (Case I)

Show $\Pi_J''(h) < 0$: $\left[8(1-F_0)e^{-2h} - 2(1-F_0)e^{-h}\right]U_2 + 2\left[(1-F_0)e^{-h} - 4(1-F_0)^2e^{-2h}\right]U_3 < 0$.

Completing-the-Square yields the condition $e^{-2h} < \frac{1}{4(1-F_0)}$. Inserting h^* , this condition is

fulfilled if $\left[-\sqrt{\frac{4c_1 + [U_3 - U_2]}{[U_3 - U_2]}} + 1\right] < 1$. The other case $\left[+\sqrt{\frac{4c_1 + [U_3 - U_2]}{[U_3 - U_2]}} + 1\right] < 1$ cannot be

fulfilled. Consequently, the depicted h^* is a unique local maximum. We can rule out the case $4c_1 + [U_3 - U_2] = 0$ as any $U_3 > U_2$ would contradict our assumptions about judicial behavior. No solution, and thus no h^* , exists when the square root is negative.

Proof 3 Effort h^* is a local maximum (Case II)

Show $\Pi_J''(h) < 0$: $(1-F_0)[U_3 - U_1]e^{-h} + 4(1-F_0)^2e^{-2h}[U_2 - U_3] < 0$. Completing-the-Square

yields the condition $e^{-h} < -\frac{[U_1 - U_3]}{4(1-F_0)[U_2 - U_3]}$. Inserting h^* , this condition is fulfilled if

$-\sqrt{-8[U_2 - U_3]c_1 + [U_3 - U_1]^2} < 0$. Consequently, any h^* of the solution set is a unique local maximum: We do not have to consider the case $-8[U_2 - U_3]c_1 + [U_3 - U_1]^2 < 0$, as in this case, a solution h^* does not exist. This can be interpreted as follows: If no solution h^* exists, because the latter inequation is fulfilled, then there is no marginal gain from increasing work effort (careerist case).

Proof 4 Irrelevance of appeal (ex-ante perspective)

Consider the expected payoff by the agent, if he anticipates both stages of litigation, e.g. he will challenge an incorrect verdict of the first instance, but a valid court decision will also be appealed by a fraudulent adversary: $\Pi_A = (1-\varepsilon)^2P(q) + (1-\varepsilon)\varepsilon P(\bar{q}) + \varepsilon(1-\varepsilon)P(q) + \varepsilon^2P(\bar{q}) - L - A$. This simplifies to $(1-\varepsilon)P(q) + \varepsilon P(\bar{q}) - L - A$. The same reasoning applies for the perspective of the principal. Due to the additional appeal costs A , the decision to appeal is ex ante not a favorable strategy.

Proof 5 The Optimal Contract

Given (2) and (2), solved for $P(q)$ and inserted into (1), we differentiate with respect to q , identify the First-Order Condition $V'(q) - \frac{(1-\varepsilon)C'(q)}{1-2\varepsilon} = 0$, and determine the optimal quality q^* . To

determine the optimal price: The contract is incentive compatible if any deviation from the target optimum q^* is never favorable, $P(q^*) - P(q) \geq \frac{C(q^*) - C(q)}{1-2\varepsilon}$. We specify $\bar{q} = 0$ in condition (3) and

determine the price function $P(q) = \frac{C(q)}{1-2\varepsilon} - \frac{\varepsilon C(q^*)}{1-2\varepsilon} + L$. The optimal price function which

$$\text{implements } q^* \text{ is then } P^*(q) = \begin{cases} \frac{C(q)}{1-2\varepsilon} - \frac{\varepsilon C(q^*)}{1-2\varepsilon} + L & , \text{if } 0 \leq q \leq q^* \\ \frac{(1-\varepsilon)C(q^*)}{1-2\varepsilon} + L & , \text{if } q > q^* \end{cases} .$$

Proof 6 Judicial Detection Skill

Assume the judge evaluates the given evidence with his judicial detection skill s , with $s \in [0,1]$, to distinguish between legitimate and opportunistic claims. The judicial output function then is $\varepsilon(h) = (1-F_0)(1-s)e^{-h}$. The higher the skill s is, the more a judge is qualified to reliably detect the true end state of a contract and produce a lower probability of error. Consequently, a judge who always expects appeal to be filed, $\varepsilon \geq \varepsilon_{\text{opp}}$, will choose the effort

$$h^* = \frac{\ln \left[\left[-\sqrt{\frac{4c_1 + [U_3 - U_2]}{[U_3 - U_2]}} + 1 \right] \frac{1}{4(1-s)(1-F_0)} \right]}{-1} .$$

A judge who expects only legitimate appeals,

$$\varepsilon < \varepsilon_{\text{opp}}, \text{ will exert the optimal effort } h^* = \frac{\ln \left[\frac{-\sqrt{(-8[U_2 - U_3]c_1 + [U_3 - U_1]^2)} - [U_3 - U_1]}{4(1-s)(1-F_0)[U_2 - U_3]} \right]}{-1} .$$

Inserted into the output function above, the resulting probability of error for both cases proves to be independent from the skill of the judge: A higher detection skill s leads to lower judicial effort h^* , and reduces fact finding costs for the judge, but does not affect the “optimal error”. The rational judge fully internalizes the beneficial effects derived from a higher detection skill.

Proof 7 **RJ seeks to avoid reversal only ($U_1 = U_2$)**

Assume $U_1 = U_2 > U_3$ for the RJ. The optimization problem simplifies to

$$\Pi_{RJ} = \begin{cases} (1-\varepsilon)[(1-\varepsilon)U_1 + \varepsilon U_3] + \varepsilon[\varepsilon U_1 + (1-\varepsilon)U_3] - f(h) & \text{if } \{Ruling\} \wedge \varepsilon \geq \varepsilon_{opp} \\ (1-\varepsilon + \varepsilon^2)U_1 + \varepsilon(1-\varepsilon)U_3 - f(h) & \text{if } \{Ruling\} \wedge \varepsilon < \varepsilon_{opp} \end{cases}.$$

Thus, the RJ with $U_1 = U_2 > U_3$ chooses to constitute the judicial error

$$\varepsilon_{RJ}^* = \begin{cases} \frac{1}{4} \left[1 - \sqrt{\frac{4c_1 + [U_3 - U_1]}{[U_3 - U_1]}} \right] & \text{if } \{Ruling\} \wedge \varepsilon \geq \varepsilon_{opp} \\ \frac{-\sqrt{(-8[U_1 - U_3]c_1 + [U_3 - U_1]^2)} - [U_3 - U_1]}{4[U_1 - U_3]} & \text{if } \{Ruling\} \wedge \varepsilon < \varepsilon_{opp} \end{cases}.$$

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