Strengthening International Courts
and the Early Settlement of Disputes

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September 26, 2007

Abstract

We construct a formal model of interstate disputes and find that increasing the probability that a court will review cases on their merits reduces incentives for states to reach early settlements and increases the likelihood that costly litigation will take place. Similarly, we find that strengthening the enforcement of court rulings also increases the use of the court in equilibrium. We evaluate the plausibility of our results by examining the use of the International Court of Justice.

1 Introduction

The recent growth in international courts has renewed interest in the study of international law and legalization. An important feature of international legalization is the creation of third-party adjudication bodies for the resolution of disputes arising under international law.[1] One of the most important functions of these courts is to prompt disputants to settle their disputes *before* the court issues a ruling on the case. As Hudec (1993, 360) argues: "No functioning legal system can wait until [the final verdict] to exert its primary impact." Courts are typically inefficient means of settling disputes. If the two states could jointly anticipate the expected outcome of litigation, then they could resolve their dispute through bilateral negotiations and avoid the time and cost involved in adjudication. However, as our model highlights, if the players possess asymmetric information about the anticipated outcomes of adjudication, then the threat of inefficient litigation is necessary in order for players to share their private information.[2]

We employ a formal model to show that strengthening international courts *reduces* the likelihood of early settlements because strong courts magnify the bargaining problems arising from incomplete information about the quality of the disputants' legal claims. We make this argument with reference to two important measures of court 'strength.' The first is the probability that the court will agree to review the case on its merits. Like all courts, international adjudicatory bodies face limits on their ability and willingness to rule on cases and it is the courts themselves that determine whether they can or cannot decide a case on its merits. While disputants may have initial uncertainty regarding the strength of their legal claims in a given dispute, they also have uncertainty

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[1]This is often referred to as "delegation" and is listed as one of the three main determinants of legalization by Goldstein et al. (2000).

[2]Additionally, as Reinhardt (2000) and Busch and Reinhardt (2000, 2003, 2005) argue, the absence of an adjudicatory body may make players completely unwilling to negotiate a settlement to their dispute. This is empirically demonstrated in Busch, Raciborski and Reinhardt (2007).

regarding whether an international court will be willing to rule on the substantive issues in question. International courts also vary with respect to the strength of their enforcement regimes. While some adjudicatory bodies, such as the WTO/GATT dispute settlement procedure, have well-established mechanisms that authorize retaliation in order to induce compliance (an enforcement mechanism), other legal institutions, such as the International Court of Justice, have relatively weak modes of enforcement. This variation in enforcement regimes affects the degree to which judicial decisions constrain disputants in future interactions, including bargaining interactions that take place after a court has ruled on a decision (Johns, 2007; Fang, 2006).[3]

In the model below, two states are involved in a dispute over an asset that the defendant possesses. The plaintiff has private information regarding the strength of its legal claim to the asset.[4] This corresponds to the probability that the court will award the asset to the plaintiff if the court is willing to rule on the merits. The plaintiff begins by offering a settlement to the defendant, but if this offer is rejected, costly litigation ensues. Both players are uncertain about whether the court will be willing to rule on the merits of the case, and the strength of the court's enforcement regime determines the magnitude of the effect of a court ruling on the merits. That is, a court with a "perfect" enforcement regime can effectively ensure that the winner of a ruling on the merits gains full control over the asset, while a favorable ruling will have less of an impact on final outcomes when the court has less enforcement power.

The model yields several substantively important results. First, increasing the likelihood that the court will rule on the merits—for example, by strengthening the jurisdiction of the court—ensures that players are less likely to reach settlements and more

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[3]As emphasized in Johns (2007), this conceptualization of enforcement regimes corresponds to the concept of "obligation" identified in Goldstein et al. (2000) and Abbott et al. (2000).

[4]Different institutions vary in the names that they give to the legal disputants. For example, in the International Court of Justice, the disputant who files the initial claim is the "applicant," while the state against which the claim is lodged is called the "respondent." In order to avoid confusion, we use the common terms of "plaintiff" and "defendant."

likely to engage in costly litigation. Increasing the enforcement powers of the court (that is, increasing the costs incurred for noncompliance with the court's rulings) has the same effect. Most interestingly, these effects hold regardless of the strength of the plaintiff's legal case. Increasing the enforcement and jurisdictional powers of the court increases the use of the court even for cases in which the plaintiff has a relatively weak legal claim.

Both of these results stem from the same underlying cause. As the court becomes stronger (whether by increasing the probability it will judge the case on its merits or increasing its enforcement powers or both), the plaintiff's probability of winning the case becomes more important to the final outcome. So asymmetric information about the probability that the plaintiff will win on the merits has a larger effect on the disputants' behavior and increases the likelihood that the defendant will reject the plaintiff's settlement offers. In contrast, when the court has a low probability of deciding the case on the merits or when the court's rulings have little impact on the post-adjudication outcome (which can occur due a lack of enforcement), the plaintiff's probability of winning on the merits is largely irrelevant. As such, asymmetric information about this probability has little effect on bargaining between the disputants and they can more easily reach an early settlement.

The paper is organized as follows. In the next section we discuss in more detail our conceptualization of the "strengthening" of international courts. In section 3 we describe the model and characterize the separating equilibrium of the game. We provide intuitive explanations for the key comparative statics identified in the model and reserve formal proofs for the Appendix. After discussing the robustness of the model results, we then take our analytical findings to the data in section 4 and examine whether the results of the model are supported by the history of jurisprudence of the International Court of Justice. Finally, we conclude with a discussion of areas for future research.

2 Strengthening International Courts

We focus on two dimensions of international courts: the ability and willingness of a court to review a case on its merits, and the enforcement of the court's rulings (Smith, 2000). We discuss each of these dimensions in turn and then address the role of enforcement in affecting bargaining behavior after the court has ruled.

2.1 Jurisdiction

Courts may choose not to review a case on its merits for any numbers of reasons. All of these factors fall under the general rubric of what legal scholars call the "justiciability" of a case. For example, the court may decide that the plaintiff does not have standing before the court, or it may find that ruling on a case would be improper because the dispute is a political (and not a legal) matter or because any ruling would be moot. In the international context, a particularly important reason for dismissal of a case is a finding of lack of *jurisdiction* of the court. As a result of these considerations, whether or not a court will choose to review a case on its merits is a matter of great uncertainty even for legal experts.[5] As Pomerance (1997, 308) argues:

> [the] line dividing ... the 'non-justiciable' from the 'justiciable' remains undefined and probably undefinable except by some of the tautological and circuitous formulae which tend to be quoted and requoted unthinkingly.

Consider the following three well-known examples from the docket of the International Court of Justice (ICJ).

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[5]For example, see White (1999).

In 1984, Nicaragua filed a complaint against the United States in the ICJ alleging that the US had illegally mined Nicaraguan harbors and engaged in other acts of war. Nicaragua based its case in part on a unilateral declaration from 1946 in which the US accepted the jurisdiction of the Court.[6] However, the US declaration was subject to reservations, one of which specified that the US recognized ICJ jurisdiction for cases involving a multilateral agreement only if all other affected members of the agreement were also impleaded. The US argued that jurisdiction did not exist for the dispute with Nicaragua because the Court had excluded El Salvador, an affected party under the agreement in dispute, from the proceedings.[7] Nonetheless, the court ruled that it did in fact have jurisdiction under customary law—a startling claim to many legal scholars.[8]

The *South West Africa* case illustrates a similar point with an opposite result. In 1960, Ethiopia and Liberia filed cases with the ICJ alleging that South Africa had violated its UN mandate over the South West Africa territory (which is present-day Namibia) by introducing a policy of apartheid. The court initially ruled in 1962 that it had jurisdiction over the case. However, the court dismissed the case in 1966, stating that Ethiopia and Liberia had no "legal right or interest in the subject-matter."[9] This latter judgment came as an unexpected "volte-face" in light of the Court's earlier ruling (Janis, 1987, 144).[10]

Finally, consider the lawsuit brought by the Republic of Cameroon against the United Kingdom in 1961. Cameroon alleged that the United Kingdom had violated its duties under a UN Trusteeship Agreement as a Administering Authority for the Northern

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[6]This basis of jurisdiction is commonly referred to by the misnomer of "acceptance of compulsory jurisdiction" under Article 36 (2) of the ICJ Statute. See Gill (2003, 74-77).

[7]See *Case Concerning Military and Paramilitary Activities in and Against Nicaragua* (Nicaragua v. United States of America), Order of 4 October 1984.

[8]For example, see D'Amato (1987).

[9]*South West Africa Case* (Ethiopia v. South Africa; Liberia v. South Africa), Judgment of 18 July 1966, p. 51.

[10]Also see Pomerance (1999) and Falk (1967).

Cameroons territory. Shortly after the lawsuit was filed, Northern Cameroons joined the independent state of Nigeria and the relevant trusteeship agreement was dissolved. The court refused to hear the case, reasoning that:

> even if the Court...finds that it has jurisdiction, the Court is not compelled in every case to exercise that jurisdiction. There are inherent limitations on the exercise of the judicial function which the Court, as a court of justice, can never ignore. There may thus be an incompatibility between the desires of an applicant, or indeed, of both parties to a case, on the one hand, and on the other hand the duty of the Court to maintain its judicial character. The Court itself, and not the parties, must be the guardian of the Court's judicial integrity.[11]

The key claim made by the Court is that ruling on the merits would violate judicial propriety: since the relevant agreement was no longer in effect, any ruling "would be inconsistent with [the Court's] judicial function" because its judgment would be "devoid of purpose."[12]

While the ICJ made different legal arguments in the three cases above, they all had the same effect: no substantive ruling was made on the merits of the case. Basic principles of international law provide courts with a variety of reasons for refusing to rule on the merits of a given case. First, the court can find that it lacks jurisdiction or competence to rule in a given dispute. Second, if jurisdiction exists, the court can find that the given claims are inadmissible for reasons such as excessive delay in initiating a lawsuit or non-exhaustion of local remedies. Finally, even if jurisdiction exists and a case is admissible, a court may decline to issue a ruling if it believes that such a ruling would

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[11] *Case Concerning the Northern Cameroons* (Cameroon v. United Kingdom), Judgment on Preliminary Objections, 2 December 1963, p. 29.

[12] *Ibid.*, pp. 37 and 38.

violate judicial propriety, as in the *Northern Cameroons* case above.[13]

Jurisdictional uncertainty can also play a role in other international courts. For example, one of the most prominent aspects of the creation of the WTO/GATT dispute settlement procedure in 1995 was that it substantially strengthened the jurisdictional basis for the WTO/GATT's adjudicatory mechanism. Whereas the GATT DSM was designed to address only disputes under the GATT agreement (and there were different dispute resolution procedures under the separate Tokyo Round Codes (Jackson, 1997)), the WTO's DSM explicitly claims jurisdiction over all "covered" agreements, which include the agreements not only on the trade of goods, but also trade in services, intellectual property, government procurement and others. Additionally, the WTO text affirms the right of a plaintiff to initiate the dispute resolution process, whereas under the GATT, such a process could be blocked by the potential defendant.

As these examples illustrate, whether or not a court claims the authority to rule in a dispute can be an added source of uncertainty for disputants in an international conflict. Not only are disputants uncertain about the validity of their legal claims, they are also uncertain as to whether the court will be willing to issue any substantive ruling whatsoever. We model the strengthening of a court as an increase in the probability that the court will rule on the merits.

2.2   Enforcement

Just as courts can vary in the extent of their jurisdiction, they can also vary in the extent to which their rulings are enforced (Smith, 2000). Obviously no international police force exists to actively enforce the rulings of any international court. Instead, by "enforcement" we mean the imposition of costs/punishments on states that fail to

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[13]For a more extensive introduction to these three classes of rulings, see Brownlie (1998, 479-510, 713-725).

carry out the court's rulings. In the absence of an international police force, these costs must be imposed on any violator by either other states or by domestic constituencies. Imposing these costs must be incentive compatible for the enforcing states and domestic audiences, meaning that the net benefits of placing these costs on violators must be higher than the net benefits of not doing so.

Johns (2007) offers a model of a court with multilateral enforcement by states. In her model, if a state fails to comply with the court's ruling other states choose whether or not to impose noncompliance costs on the violator. Both the severity of the costs and whether they are imposed is endogenous to the model. Imposing these costs on the violator is also costly for the enforcer, so why would third party states impose them? In Johns (2007), if a state refuses to impose the costs it is branded an enforcement "free-rider." Other states are not obligated to enforce rulings in favor of free-riders in the future. Thus if a state fails in its role as enforcer, the court becomes effectively useless to it as a plaintiff; even if a free-rider were to win a judgement in court, other states would be under no obligation to enforce the ruling. Allee and Huth (2006) provide an alternative conception of enforcement, in which domestic constituencies find political concessions more palatable when they are made following a legal ruling than when they are made in bilateral negotiations. As such, domestic audiences impose punishments on leaders who refuse to comply with court rulings.[14] Another approach is that of Rosendorff (2005) where the offending country voluntarily accepts a limited punishment (or maybe even imposes it on itself) in order to temporarily abrogate the treaty, yet preserve its reputation as a cooperator. The court (in this instance, the dispute settlement mechanism at the WTO) functions as an information revelation mechanism. That domestic politics can be crucial to maintaining a state's cooperative stance when it comes to international agreements has been explored by Mansfield,

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[14]Like most accounts of domestic audience costs, Allee and Huth (2006) do not provide clear microfoundations for why domestic audiences would be willing to behave in this way (Smith, 1998). They appeal to the "legitimacy" of international courts in order to rationalize domestic constituent behavior.

Milner and Rosendorff (2000, 2002) and by McGillivray and Smith (2000, 2004).

As documented extensively in Fang (2006) and Paulson (2004), countries often face meaningful costs from refusing to comply with an international court's judgments. The costs vary both in form and substance, and may have as their source international or domestic political pressures. For instance, Australia and New Zealand sued France in May 1973, challenging the legality of French atmospheric nuclear tests in the South Pacific. On June 22, 1973, the ICJ ordered France to cease all future tests until the dispute had been resolved.[15] France quickly announced that it would not comply, prompting formal opposition from governments all over the world, including the United Kingdom and numerous countries in the South Pacific and Latin America (Trumbull, 1973). Domestic constituency groups exerted pressure both internally and externally: the French clergy attacked military policy, while British trade unions boycotted French goods (Lewis, 1973; Robertson, 1973). Additionally, French noncompliance was highly criticized within international organizations (Trumbull, 1973). France soon bowed to the pressure and pledged to refrain from any future atmospheric nuclear tests, illustrating that even powerful states often find compliance with an ICJ judgment to be less costly than defiance (Stiles, 2000).

2.3   Post-Adjudicative Bargaining

In our model, the enforcement dimension of court strength operates through post-adjudicative bargaining. A finding of the court, while legally binding on the parties, is unlikely to initiate complete compliance. Countries involved in interstate disputes continue to negotiate with each other even after a finding of the international tribunal. Consider the WTO's archetypal case at the dispute settlement mechanism (DSM): the dispute between the US and Venezuela regarding gasoline that started in 1995.

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[15] *Nuclear Test Case*, Order on Interim Measures of Protection of 22 June 1973.

The Clean Air Act of 1990 permitted the government to regulate the chemical characteristics of gasoline produced and imported into the US. In 1994, the US mandated restrictions on imported gasoline that it did not apply to domestically-refined gasoline. Venezuela argued before the DSM that this action violated the "national treatment" principle and could not be justified under exceptions to normal WTO rules for health and environmental conservation measures. The dispute panel agreed with Venezuela (and Brazil, which by now had joined the case). After the ruling was made, the United States reopened negotiations with Venezuela in order to find regulations that were mutually acceptable.[16] More generally, even if a finding of the appellate board of the DSM authorizes compensation or the suspension of concessions, the procedure encourages the reopening of negotiations to find mutually acceptable implementation strategies.

Similarly, many cases in which the International Court of Justice allocates an asset to a particular state result in subsequent negotiations in which the winner of the court's judgment makes concessions to the loser without either party being punished for deviating from the court's ruling. Many ICJ cases consist of two states making competing claims over which legal principles should hold in allocating ownership of an asset. Once the Court has ruled on such principles, the disputants must subsequently return to the bargaining table in order to negotiate a final settlement.[17] Indeed, ICJ judgments often contain explicit provisions urging litigants to return to negotiations and reach a new settlement in accordance with the principles established by the Court.[18]

After a finding is handed down by the court, disputants often continue to bargain over the division of the asset. However, the adjudicatory process changes the bargaining strengths of the parties, and the degree to which it does is our measure of the strength of the institution's enforcement regime. The strength of the enforcement regime varies

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[16]http://www.wto.int/english/thewto_e/whatis_e/tif_e/disp3_e.htm

[17]E.g., *North Sea Continental Shelf*, Judgment on the Merits of 20 February 1969.

[18]E.g., *Case Concerning the Gabcikovo-Nagymaros Project*, Judgment on the Merits of 25 September 1997, para. 155 (2) (B).

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across international institutions (Smith, 2000). One of the interesting comparative statics we explore with our model is how variation in noncompliance costs, through their effects on post-adjudicative bargaining, can explain the propensity of disputants to settle their disputes out of court.

3 The Model

Primitives and Structure

The model is an extension of Reinganum and Wilde (1986). There are two unitary-actor nation-states, a plaintiff (P) and a defendant (D). The defendant has taken some action such that ownership of an asset is in dispute. The value of the asset to the plaintiff and defendant, v_P and v_D, respectively, is common knowledge. The plaintiff possesses private information about the strength of her case regarding a legal right over the asset, denoted as her expected probability of success at trial $\pi \in [0,1]$. The defendant does not know the strength of the plaintiff's case, but has prior beliefs that π is distributed with full support along the unit interval according to a density function f.

[INSERT FIGURE 1 HERE.]

One way to interpret this information structure is that the action of the defendant has caused some damage or loss to the plaintiff and the actual value of the loss is known perfectly to the plaintiff who has filed the case, while the magnitude of this loss is less certain to the defendant. For institutions in which the plaintiff must prove a loss in order to prevail in litigation, the plaintiff will have an informational advantage. When the information is revealed, either in settlement negotiations or in court, this

information affects the likelihood of the court finding in favor of the plaintiff. For example, consider a typical antidumping case at the WTO's DSM, where a country has raised a barrier to the imports from a trading partner - say the US on steel imports from Brazil and others. In order for a finding of a violation to be obtained, Brazil must show that its domestic steel industry has suffered injury as a result of the US's action - described as "nullification and impairment" of the concessions it has made in the GATT/WTO texts. Brazil is likely to be more aware of (or have better information about) the political and economic costs of this reduction in its ability to export steel than is the US. Hence Brazil will have better information about the strength of its case than will the US.[19] We model this informational asymmetry by permitting the plaintiff to know perfectly the strength of its case, while the defendant is imperfectly informed.

An alternative interpretation of the information structure is that while political elites of the defendant state may be aware of their own past transgressions, they may be uncertain about the plaintiff's ability to produce evidence in court of the illegality of past behavior. For example, the U.S. foreign policy and military elite surely possessed complete information about the extent of U.S. involvement in the Nicaraguan conflict in the 1980s. However, they were likely uncertain about the extent to which Nicaragua could produce compelling evidence to the ICJ in order to prove its allegations of the illegal use of force. As the recent controversial ICJ ruling on Bosnian allegations of genocide by Serbia illustrates, even cases with well-documented violations of international law can fall apart if the plaintiff is unable to meet the evidentiary demands of the Court.[20] As such, our model struture is compatible with many different interpretations

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[19]The Dispute Settlement Understanding actually explicity declares that when a case is filed, and an infringement is established, this is "considered prima facie to constitute a case of nullification or impairment. This means that there is normally a presumption that a breach of the rules has an adverse impact on other Members parties to that covered agreement, and in such cases, it shall be up to the Member against whom the complaint has been brought to rebut the charge." This suggests that the defendant is at a disadvantage, in that it may not have the necessary information at its disposal to make its case. The demands on the plaintiff to make its case are weaker. (Article 3 para 8.)

[20]See *Application of the Convention on the Prevention and Punishment of the Crime of Genocide* (Bosnia and Herzegovina v. Serbia and Montenegro), Judgment on the Merits, 26 February 2007, and Simons (2007).

of the uncertainty inherent in the legal process.

Figure 1 displays a game tree of the model. After the plaintiff privately learns the true value of π, she has the opportunity to offer a settlement to the defendant. This settlement consists of a division of the asset, where $s \in [0, 1]$ is the share of the asset that the plaintiff asks to receive. The defendant must then decide whether or not to accept the plaintiff's offer. If he accepts, then the asset is divided according to the settlement offer and the dispute is resolved. In contrast, if the defendant rejects the plaintiff's settlement offer, the dispute is referred to the court. The legal process is costly for both players, where the cost of litigation is denoted by $k > 0$. Both players are uncertain about whether the court will be willing to rule on the merits, but have common beliefs about the probability that the court will issue such a ruling, denoted $q \in [0, 1]$. Alternatively, the court may decline to issue a ruling on the merits and instead dismiss the case due to a lack of jurisdiction, inadmissibility of the plaintiff's claims, or a lack of judicial propriety. If the case is dismissed on such procedural grounds, then the court makes no determination regarding which player has a legal "right" to the asset. In contrast, if the court is willing to issue a ruling on the merits, then the plaintiff's legal right to the asset is upheld with probability π.

Following all possible court judgments, players have the opportunity to engage in post-adjudicative bargaining. Most ICJ rulings result in further diplomatic negotiations between states (Johns, 2007). Such post-adjudicative bargaining can take place because litigants must negotiate the formal terms of a settlement following the establishment of legal principles by the court, or because the winner of a court judgment may have incentive to make concessions to the loser in order to ensure compliance with the final outcome.[21] A bargaining outcome consists of a share of the asset $x \in [0, 1]$ that the plaintiff receives, while the defendant receives the share $1 - x$. Let $x = a$ if the plaintiff wins a ruling on the merits, $x = b$ if the case is dismissed, and $x = c$ if the defendant

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[21]See Paulson (2004) for numerous examples.

wins a ruling on the merits. We assume throughout that $a > b > c$, which ensures that successful litigation results in the winner of a court ruling on the merits having a privileged bargaining position. While the plaintiff and defendant can differ in the value that they derive from possessing the asset (as reflected in the parameters v_P and v_D), both disputants prefer to secure as large a share of the asset as possible. So the plaintiff's value from its share of the asset is xv_P, while the defendant derives the value $(1 - x)v_D$ from its complementary share of the asset.

Rather than explicitly modeling the post-adjudicative bargaining process, we present a general framework that is consistent with many different bargaining protocols. For example, Johns (2007) shows that if the Nash bargaining solution is adopted and losers of litigation are punished for engaging in conflict over the asset, it follows that $a > b > c$. Alternatively, we might assume that post-adjudicative bargaining has a protocol of take-it-or-leave-it offers or alternating offers where the winner of a court ruling on the merits is given the role of first proposer, and either player is equally likely to be chosen as the first proposer when the case is dismissed by the court. This framework is also consistent with the assumption that $a > b > c$.

The game structure ensures that the plaintiff's strategy is a mapping, $s : [0, 1] \rightarrow [0, 1]$, where $s(\pi)$ denotes a settlement offer conditional on π. The defendant's strategy is a mapping, $r : [0, 1] \rightarrow [0, 1]$, where $r(s)$ denotes the probability that an offer s will be rejected, which is equivalent to the probability that litigation takes place. We restrict attention to the unique separating equilibrium, in which the plaintiff's offer, $s(\pi)$, fully reveals her private information about the likelihood that she will prevail in litigation.[22] In order for such an equilibrium to exist, it must be the case that the plaintiff is always

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[22]More formally, our solution concept is a perfect Bayesian equilibrium in which $s(\pi)$ is strictly monotonic. As is common in signalling games, this separating equilibrium is unique with regard to the strategic behavior that it induces, but not with regard to beliefs since it can be supported with multiple systems of off-the-equilibrium-path beliefs. However, adopting an appropriate equilibrium refinement, such as universal divinity (Banks and Sobel, 1987), ensures that this equilibrium is also unique with regard to beliefs. We discuss other possible equilibria, including pooling and semi-separating equilibria, below.

willing to initiate litigation when her settlement is rejected and the defendant would always rather engage in litigation than completely abandon her share of the asset.[23]

Before turning to our results, a few simplifying assumptions warrant further discussion. First, we assume that the probability that the court will rule on the merits of a given case is an exogenous parameter. In practice this parameter is certainly partly endogenous since states have the ability to craft the international agreements that are used as a basis for jurisdiction.[24] Nonetheless, there is always some residual uncertainty about the likelihood that a court will rule on a case, regardless of the strength of jurisdiction of the court, because challenges to admissibility and judicial propriety often rely on subjective interpretations of the facts of a given dispute.[25] Also, even if states possess the ability to manipulate the likelihood that a court will dismiss cases due to a lack of jurisdiction, we must first understand the implications of changing this parameter before we can examine the issue of manipulating jurisdiction. That is, in order to understand why states will agree to a particular level of jurisdiction (i.e. a particular level of q), we must first understand the implications of changing the strength of the court's jurisdiction on the strategic behavior of states. Second, we also treat the strength of an institution's enforcement regime as exogenous. We do not endogenize the provision of enforcement of court judgments because the creation of endogenous enforcement regimes for international courts is addressed at length in Johns (2007) and because this is secondary to our key issue of interest, namely the effect of a given level of enforcement and jurisdiction on final outcomes and disputant behavior.

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[23]This implies that the cost of trial is sufficiently low that the threat of litigation is always credible. As such, we set aside issues stemming from the legal capacity of states (Busch, Reinhardt and Shaffer, 2007). These conditions are met if and only if: $k < E[x|\pi = 0]v_P = [(1-q)b + qc]v_P$ and $k < [1 - E[x|\pi = 1]]v_D = [(1-q)(1-b) + q(1-a)]v_D$.

[24]Johns (2007) includes an extensive analysis of such endogenous jurisdiction.

[25]For example, an international court can rule a claim inadmissible if there is an excessive delay between the time of an alleged violation and the time at which a lawsuit is initiated. However, international law generally lacks firm guidelines regarding what constitutes an excessive delay (Brownlie, 1998, 506-507).

Results

Equilibrium characterization

Conditional on knowing the true value of π, each player's expectation about the final division of the asset that will result from the legal process is

$$E[x|\pi] = (1-q)b + q\pi a + q(1-\pi)c \tag{1}$$

for the plaintiff. In a separating equilibrium, each value of the parameter π induces the plaintiff to make a distinct settlement offer, $s(\pi)$. So when the defendant is offered a particular settlement s, he can perfectly infer the true value of π. Let $\pi(s)$ denote the defendant's posterior belief about the true value of π after hearing a settlement offer s.[26] Then the defendant's expected utility from rejecting P's offer is:

$$EU_D(r(s) = 1|s) = (1 - E[x|\pi(s)])\, v_D - k$$

The defendant is indifferent between accepting and rejecting an offer if and only if:

$$s = E[x|\pi(s)] + \frac{k}{v_D} \tag{2}$$

The defendant will strictly prefer to reject any offer larger than this value of s, and accept any offer less than this value. In order for the plaintiff to adopt a separating strategy, it must be the case that equation (2) holds for all offers made in equilibrium.

The plaintiff's expected utility from an offer s is:

$$EU_P(s) = r(s)\left\{E[x|\pi(s)]v_P - k\right\} + (1 - r(s))\left\{sv_P\right\}$$

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[26]More formally, in a separating equilibrium, the function $s(\pi)$ is invertible, ensuring the existence of an inverse function $\pi(s)$, where $\pi(\hat{s}) = \hat{\pi}$ if and only if $s(\hat{\pi}) = \hat{s}$.

This means that the optimal offer s must satisfy the following first-order condition:

$$s = E[x|\pi(s)] - \frac{k}{v_P} + \frac{1 - r(s)}{r'(s)} \tag{3}$$

Since both equations (2) and (3) must simultaneously hold in equilibrium, this ensures that:

$$-r'(s)\left[\frac{k}{v_D} + \frac{k}{v_P}\right] + 1 - r(s) = 0$$

Solving this differential equation yields the following equilibrium characterization.

Theorem: There exists a unique separating equilibrium in which:

$$s^*(\pi) = E[x|\pi] + \frac{k}{v_D}$$

$$r^*(s) = \begin{cases} 0 & \text{for all } s < s^*(0) \\ 1 - exp\left(-\frac{s - s^*(0)}{\frac{k}{v_D} + \frac{k}{v_P}}\right) & \text{for all } s \in [s^*(0), s^*(1)] \\ 1 & \text{for all } s > s^*(1) \end{cases}$$

$$\pi^*(s) = \begin{cases} 0 & \text{for all } s \leq s^*(0) \\ \frac{s - (1-q)b - qc - \frac{k}{v_D}}{q(a-c)} & \text{for all } s \in [s^*(0), s^*(1)] \\ 1 & \text{for all } s \geq s^*(1) \end{cases}$$

The proofs of all results are in the Appendix. This equilibrium has several interesting features. First, since it is a fully separating equilibrium, the defendant can always infer the strength of plaintiff's legal case based on the size of her settlement offer. This means that by the time the defendant is deciding whether to accept or reject the plaintiff's offer, there no longer exists an informational asymmetry. Nonetheless, the defendant always rejects the settlement with some positive probability for all but the very weakest of cases; that is, there is always a positive probability of trial anytime that $\pi > 0$. So cases are submitted to the court in equilibrium even though both disputants have symmetric information about the expected outcome of litigation by the time that

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submission decisions are made.

Second, it is the availability of costly litigation that makes the plaintiff's settlement offer credible to the defendant. So even when disputes are not submitted to the court (because the defendant accepts the plaintiff's offer), the institution still affects final outcomes because the possibility of costly adjudication induces the plaintiff to make offers that credibly reveal her private information. This means that the availability of the institution affects outcomes, even if it is not actually used (Fang, 2006).

Before proceeding to comparative statics on equilibrium behavior, note that while $r^*(s^*(\pi))$ denotes the equilibrium probability that a given offer $s^*(\pi)$ will be rejected by the defendant, we are also substantively interested in the overall likelihood that litigation takes place. As such, we are interested in the *ex ante* probability that a trial takes place, which can be mathematically characterized as:

$$t^* \equiv \int_0^1 r^*(s^*(\pi))f(\pi)d\pi$$

Comparative Statics

We now explore some of the relationships between the parameters of the model and equilibrium outcomes and behavior.

> Proposition 1: The optimal settlement offer, s^*, is increasing in the strength of the plaintiff's case, π, and the probability that the defendant rejects a settlement offer, $r^*(s)$, is increasing in the size of the offer.

The interpretation of the first part of this result is straightforward: as the strength of the plaintiff's case increases, her own expected utility from litigation increases while

her opponent's expected utility from a trial decreases. This means that it is optimal for the plaintiff to demand a larger share of the asset in pre-trial negotiations.

The second component of this result is less intuitive. Since higher settlement offers, s, indicate that the plaintiff has a stronger case, one might expect that the defendant is more likely to accept higher offers in order to avoid litigation. However, the probability that a trial takes place must be increasing in the size of the settlement offer in order for the plaintiff to have incentive to credibly convey the strength of her case. This serves to "discipline" the plaintiff and ensures that she does not have an incentive to raise her offer in an attempt to convince her opponent that her case is stronger than it is in reality.

To understand the intuition behind this latter result, suppose that the probability that the defendant rejects the offer (i.e. that litigation takes place) is *decreasing* in the settlement offer. Consider a plaintiff who has a relatively weak case. If she raises her settlement offer and "mimics" the behavior of a plaintiff with a stronger case, then the defendant will believe that the plaintiff's case is stronger that it is in reality. This in turn will mean both that costly litigation is less likely to occur and that the plaintiff can extract more when her settlement is accepted. Clearly, such a situation does not create incentives for the plaintiff to credibly reveal her private information: when the plaintiff has a relatively weak case, she will want to bluff and pretend that her case is stronger than it really is. So the defendant must reject higher offers with a higher probability in order to forestall this bluffing and ensure that the only plaintiffs who have an incentive to make large demands are those that really do have higher chances of winning the case.

> Proposition 2: An increase in jurisdiction, that is the probability that the court will rule on the merits, q:

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- increases settlement offers when the plaintiff has a sufficiently strong case, but decreases offers when the plaintiff's case is weak; and

- raises both the probability that the defendant will reject a given settlement offer, as well as the overall probability that a trial takes place.

State disputants are often uncertain about whether an international court will be willing to issue a ruling on the merits, or will dismiss the case on procedural grounds. Some of this uncertainty results from basic facts of the case, such as how much time has passed from the original dispute to the initiation of litigation. However, there is also uncertainty regarding the court's strength of jurisdiction and its own conception of legal propriety, which vary across both institutions and time. As Proposition 2 highlights, such an increase in the jurisdiction of an adjudicatory body has a non-monotonic effect on settlement offers, yet it unambiguously decreases the probability that two disputants will settle out of court and increases the probability that a trial will take place.

Strengthening the jurisdiction of a court (by increasing the value of q) magnifies the variation in settlements that are offered by the plaintiff. When the plaintiff has a relatively strong legal case, increasing the probability that the court will rule on the merits induces her to make larger demands in the pre-litigation phase. In contrast, when the plaintiff has a relatively weak case, increasing the jurisdiction of the court will lead her to temper her demands by making lower settlement offers. Consider a plaintiff with a weak case. If jurisdiction rises, the likelihood the court will take the case rises, and the expected value of an adjudicated outcome falls. In order to counter the increased likelihood of a court case, the plaintiff will moderate its settlement offer. On the other hand if the plaintiff's case is strong, the increased jurisdiction reinforces this strong situation for the plaintiff. So it does not have to be so concessionary in the pretrial settlement negotiations.

It is this very increase in the variation of settlement offers that ensures that increases in jurisdiction raise both the probability that a given offer is rejected and the overall probability that a trial takes place. As plaintiffs with a relatively weak case lower their demand and plaintiffs with a relatively strong case raise their demand, the temptation of weak plaintiffs to mimic the offers of strong players increases. This ensures that in order for the plaintiff to credibly reveal her private information via her settlement demand, the defendant must impose more discipline by increasing the likelihood that a given offer will be rejected and that a trial will take place.

> Proposition 3: As litigation becomes more costly, settlement offers increase, the probability that a given offer is rejected decreases, and the overall probability that a trial takes place decreases.

It is not surprising that increasing the cost of litigation makes use of the court less desirable. However, even though both the plaintiff and the defendant must bear equivalent costs in the event of a trial, it is interesting to note that increases in litigation costs allow the plaintiff to demand more in pre-litigation settlements and these higher settlement offers are more likely to be accepted by the defendant. This is ensured by the sequential structure of the game. A decision by the defendant to reject an offer is equivalent to a guarantee that litigation will take place. When k increases, the range of settlements that the defendant would prefer as an alternative to litigation expands for every possible value of π. Even though full separation continues to occur and the defendant is still able to infer the strength of the plaintiff's case based on her settlement offer, the plaintiff is able to demand more and knows that these demands will be accepted with a higher probability than if litigation costs were lower.

We can now consider the effect of enforcement regimes on the likelihood of trial and the settlements reached "in the shadow of the court." While enforcement of court judgments

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is not explicitly characterized in this model structure, note that the post-adjudicative bargaining outcomes implicitly capture the strength of the court's enforcement regime. When a increases, the plaintiff derives greater benefit from prevailing in a judgment on the merits of the case and the defendant pays more dearly. Similarly, when c decreases, the plaintiff suffers increased harm from losing a judgment on the merits and the defendant's payoff from successful litigation increases. Such changes implicitly capture the strengthening of an enforcement regime since higher punishments for noncompliance with a court ruling on the merits serve to increase the post-adjudicative bargaining power of the winner of litigation (Johns, 2007). So an increase in the strength of the court's enforcement regime corresponds to an increase in the quantity $a - c$. For example, in a perfect enforcement regime, in which court judgments are always implemented fully, litigation would be a "winner-takes-all" system in which $a - c = 1$. In contrast, when there is imperfect enforcement of the court's ruling, the winner of the court's ruling should still derive some advantage in post-adjudicative bargaining, but she may need to surrender part of the asset in order to ensure compliance; that is, $0 < a - c < 1$. Regardless of the specific strength of the enforcement regime, the following results hold.

Proposition 4: In equilibrium:

- as the plaintiff's share in any of the post-adjudicative bargaining outcomes (a, b, or c) increases, settlement offers increase;

- a change in the bargaining outcome following dismissal of the case (b) has no impact on the likelihood that a settlement will be rejected or that a trial will take place;

- as the plaintiff's share after winning a court judgment (a) increases, the probability that a settlement is rejected or that a trial takes place increases; and

- as the plaintiff's share after losing a court judgement (c) increases, settlements are rejected less frequently and trial incidence falls.

As laid out in the first part of Proposition 4, the settlements offered by the plaintiff are increasing in all of the post-adjudicative bargaining outcomes. Recall from the theorem above that $s^*(\pi) = E[x|\pi] + \frac{k}{v_D}$ and we see that the settlement rises in a, b, or c. Also, increases in all three serve to increase the expected utility of litigation for the plaintiff and decrease the defendant's expected utility from a trial. As such, the plaintiff finds it beneficial to demand more in the pre-litigation phase of the game. However, there is no clear effect of changes in enforcement regimes on settlement offers since changes in the quantity $a - c$ have an ambiguous effect on equilibrium settlement offers.

The second part of Proposition 4 establishes that changes in the final outcome following dismissal of the case (e.g. via a finding of lack of jurisdiction) have no effect on the likelihood of trial. While increases in b mean that the plaintiff will offer higher settlements, this has no impact on the overall likelihood that the defendant will accept the offer or that a trial will take place.

Finally, the third and fourth parts of Proposition 4 establish that the overall probability of litigation is increasing in a and decreasing in c. As the strength of the court's enforcement regime increases, the quantity $a - c$ grows, which in turn means that litigation is *more* likely to occur. So the prospect of strong enforcement of court judgments does not encourage pre-litigation settlement: it makes players even more willing to bear the costs of litigation.

The role of strength of enforcement $(a - c)$ in the model is quite similar to that of the probability that the court will rule on the merits (q): both magnify the effect of incomplete information over π. Recall that when q is small, the quality of the plaintiff's legal claims (π) is not very important to the disputants' expected welfare because the case will likely be dismissed before trial. When q is large, the importance of π to the disputants' welfare increases; therefore the effect of the incomplete information over π is greater. The effect of enforcement $(a - c)$ is equivalent. When $a - c$ is small,

π is not very important to the disputants' welfare because the plaintiff's share of the asset after post-adjudicative bargaining is almost the same whether she wins the trial or not (the same applies to the defendant). When $a - c$ is large, π becomes more important to the disputants' welfare because the difference in their shares of the asset after post-adjudicative bargaining are significantly larger when they win the trial than when they lose it.

In summary, our model leads to the conclusion that strengthening courts exacerbates the effect of the disputants' asymmetric information regarding the quality of the plaintiff's legal claim. If the court does not have jurisdiction or if its rulings do not appreciably change the bargaining outcomes between the disputants, then the plaintiff's private information about its legal claim is irrelevant. Asymmetric information about the validity of legal claims is important only when the court has an impact on the final outcome. In a manner of speaking, stronger courts magnify the importance of a source of asymmetric information (namely over the validity of the disputants' legal claims) that would otherwise be irrelevant. It is this added source of asymmetric information that reduces the probability that the disputants will settle their conflict without resorting to costly litigation.

Robustness

It is important to note that all of the comparative statics results above held in the separating equilibrium. As with most costly signaling games, there are other possible equilibria of the model, which fall into one of two classes. In pooling equilibria, all types of the plaintiff behave identically and make the same settlement offer, regardless of their private information. As such, the plaintiff's offer conveys no meaningful information to the defendant. In semi-separating equilibria (also known as semi-pooling equilibria), the defendant is able to infer some (but not all) information about the plaintiff's type.

Since the plaintiff has an infinite number of settlements that she can choose to offer—namely, any share $s \in [0, 1]$—existence of all of these possible alternative equilibria is contingent upon the defendant's beliefs after observing settlement offers that are off of the equilibrium path of play.

Since such equilibria often rely upon highly implausible assumptions about the defendant's beliefs after such unexpected offers, we can restrict attention to equilibria that satisfy the equilibrium refinement of "universal divinity" (Banks and Sobel, 1987). This criterion puts restrictions on out-of-equilibrium beliefs that are relatively unobjectionable. Suppose that the plaintiff makes an unexpected offer that is not chosen in a given strategy profile. What should the defendant believe about the strength of the plaintiff's case? Universal divinity requires that the defendant put positive weight only on those types of plaintiff who have the most to gain from the observed deviation. Under this refinement, which takes explicit account of the strategic incentives of the plaintiff to deviate from a prescribed course of action, all other equilibria are ruled out and the separating equilibrium described above is unique; there does not exist a pooling or semi-separating equilibrium that satisfies the refinement of universal divinity.[27] This uniqueness of the separating equilibria when beliefs are constrained strengthens our results considerably.

An alternative rationale for restricting attention to the separating equilibrium concerns the impact of the court on information revelation by the disputants. In the separating equilibrium, the threat of litigation ensures perfect information revelation. This is precisely the circumstance in which states should be the least likely to resort to costly litigation due to informational problems: the initial informational asymmetry is completely eliminated by the time that the defendant must decide whether to engage in litigation. Nevertheless, we show that even when the maximum amount of information is communicated in equilibrium, states will be unable to escape the inefficiencies

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[27]Results are available upon request in a Technical Appendix.

generated by engaging in litigation. So states can never truly escape the informational problems created by asymmetric information, even when institutions are designed such that the level of information provision is maximized.

Are the results robust to changes in the information structure? Here we have the informed party making the settlement offer.[28] It is conceivable that the asymmetry could run in the opposition direction, where the uninformed party makes the settlement offer. This would have more in common with screening games and, following Stiglitz and Weiss (1994) with added restrictions, the outcomes in screening games of this sort are subsets of the outcomes in the signaling versions. As for the possibility of two-sided asymmetric information, Schweizer (1989) shows in games of litigation and settlement that universal divinity rules out all equilibria other than the separating equilibrium as in this game. Nonetheless, it is worth noting that the information structure above ensures that more information is revealed in equilibrium than if the uninformed party (i.e. the "defendant") made the settlement offer. As such, the information structure that we adopt is necessary to ensure perfect information revelation, which, by the argument above, sets a higher bar for institutional efficacy.

4   Empirical Discussion

In this section we probe the plausibility of the key comparative statics of our model. First, we examine cases filed in the International Court of Justice in order to analyze the correlation between the likelihood that the court will rule on the merits and the likelihood that cases are settled prior to court judgments. We then turn to establishing the hypothesized correlation between strength of enforcement and the probability of litigation by examining the empirical work of Allee and Huth (2006). We emphasize

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[28]The labels "plaintiff" and "defendant" are used only as convenient labels.

at the outset that given the difficulties of measuring both of these concepts, we do not claim that these empirical results are proper and systematic tests of our model. Rather, they are meant to probe the plausibility of our theoretical findings.

4.1 Strength of jurisdiction (q) and early settlement

We examine whether cases for which the Court has a stronger basis for jurisdiction (i.e. a higher value of q) are less likely to settle and more likely to proceed fully through the legal process. Note that while the model above was framed in terms of settlements offered prior to litigation, the analysis above is equivalent to a model in which a case has already been filed (resulting in sunk costs for one or both parties) and the plaintiff and defendant are deciding whether to settle their case or continue on with costly litigation. While we believe that individual ICJ disputants possess common *ex ante* beliefs that the Court will be willing to rule on the merits (q), these beliefs are not directly observable and any attempt to systematically code such beliefs would likely be biased by the analyst's *ex post* knowledge about how the Court ruled in matters of admissibility, jurisdiction, and judicial propriety. As such, we use two different proxies for the likelihood that the Court will rule on the merits: types of jurisdictional claims and challenges to jurisdiction and/or admissibility.

We begin by examining the difference in litigation behavior across two different categories of jurisdictional claims. There are three main ways for jurisdiction of the ICJ to be established in a dispute. First, two disputants can write a special agreement in which they jointly establish the authority of the Court to hear a particular dispute. Second, a country can make a unilateral declaration accepting jurisdiction of the Court under Article 36 (2) of the ICJ (also known as the "Optional Clause"). If both disputants have made such declarations, an appeal to the Court is possible. Finally, international treaties often contain provisions known as compromissory clauses, which

establish the authority of the Court to resolve disputes arising from the interpretation and/or application of the treaty. When cases are filed on the basis of a special agreement, both disputants have explicitly agreed to give the Court jurisdiction over the case.[29] While the Court can still decline to rule on the merits on the basis of judicial propriety, it is difficult for the Court to dismiss the claim on grounds of lack of jurisdiction or inadmissibility. So the probability that the Court will rule on the merits is high, but still less than one. In contrast, when cases are filed on the basis of a compromissory clause in an international treaty or a unilateral declaration of jurisdiction made under the Optional Clause, there is greater ambiguity about whether the Court will rule that jurisdiction does in fact exist. Countries often challenge jurisdiction of such cases by arguing that either the particular dispute does not fall under the purview of the treaty cited as a basis of jurisdiction, or their unilateral declaration was subject to reservations that destroy the Court's basis of authority. As mentioned above, when the U.S. was sued in the *Nicaragua* case it argued that its reservation regarding third party involvement invalidated jurisdiction on the basis of its unilateral declaration. So clearly the probability that the Court will ultimately rule on the merits is lower when cases are not filed under special agreements because there is more ambiguity about whether jurisdiction does in fact exist.

Table 1 contains numerous descriptive statics of cases filed in the ICJ.[30] While the Court has heard 83 closed cases in its history, only 64 of them have actually completed the legal process, with 27 cases dismissed on the grounds of lack of jurisdiction, inadmissibility, or lack of judicial propriety, and 37 cases decided on the merits. The remaining 19 cases were settled by the disputants and withdrawn from the Court's

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[29]A similar situation arises when a case is filed under Article 38 (5) of the Rules of the Court, in which an applicant invites a respondent to establish jurisdiction for a particular dispute, but no formal special agreement is drafted by the parties. There are no such cases in our data: there are no closed cases in which jurisdiction was established this way, and we exclude unreciprocated invitations since it is clear that $q = 0$ and no court proceedings take place for such disputes.

[30]Data was compiled by the authors from Gill (2003) and ICJ records. Data and codebook are available upon request.

docket.[31] Of these 83 total cases, 15 were filed under special agreements, while 68 were filed under either compromissory clauses or unilateral declarations under the Optional Clause. Since we argue that cases filed under special agreements have a lower *ex ante* probability of being dismissed by the Court (i.e. a higher value of q), our model predicts that such cases should be less likely to be settled and withdrawn from the Court's docket than cases filed under another basis of jurisdiction. Indeed, all 15 cases filed under special agreements were resolved via legal rulings on the merits and were not settled by the litigants. In contrast, 19 of the 68 cases filed under another basis of jurisdiction were settled and withdrawn by the disputants. Table 2 shows that this difference is statistically significant: there is a strong negative correlation between special agreement status and the probability that the cases will be settled prior to a trial. This relationship is significant at the 0.02 level.

We also compare cases in which the defendant has chosen to raise challenges to jurisdiction and/or admissibility with cases in which it has not raised such challenges. In the latter, disputants have tacitly consented to the jurisdiction of the Court and admissibility of the claims. While the case can still be dismissed on procedural grounds, the Court is much less likely to do so if the defendant does not raise such claims himself. As shown in Table 1, 56 of the 83 total closed cases resulted in challenges to jurisdictional or admissibility. The last two columns of Table 2 show that there is a strong negative correlation between the absence of a jurisdictional challenge and the probability that the disputants will settle. The p-value on the χ^2-test is zero to three decimal places.[32] Once again, this provides strong support for the plausibility of the model.

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[31]In such cases, the Court issues a formal order of discontinuance at the request of the parties.

[32]Note that six cases are missing from this calculation in Table 2. These are cases that were withdrawn before the defendant had the opportunity to challenge jurisdiction and admissibility. In effect, these are censored cases because we do not observe whether disputants would have challenged the jurisdiction of the court had the case proceeded to that state.

4.2 Strength of enforcement $(a - c)$ and early settlement

Rather than focusing on cases that have already been filed, Allee and Huth (2006) conduct empirical analysis of the initial decision about whether to initiate adjudication, as opposed to continuing existing bilateral negotiations. Because of the difficulty of systematically examining all latent cases—i.e. disputes that could potentially be submitted to the court, but were not—they restrict attention to the analysis of territorial disputes in which active negotiations took place. In accordance with their theoretical mechanism of enforcement of court judgments via domestic audience costs, they measure the impact of the strength of domestic political opposition, democratic accountability, ethnic ties, and enduring rivalry on the likelihood that litigation is initiated by the disputants. Increases in each of these factors corresponds to an increase in the expected enforcement of court judgments by domestic constituencies. They find strong support for the argument that an increase in the enforcement of court judgments corresponds to an increase in the likelihood that cases will be submitted to the court, rather than resolved through bilateral negotiations. While further empirical testing of a more comprehensive set of disputes is necessary in order to fully evaluate our theoretical framework, the work of Allee and Huth (2006) suggests the initial plausibility of our arguments.

5 Conclusion

The importance of law and legal approaches to international dispute settlement is evident by the wide variety of international legal fora available for disputing states. International institutions that formerly took a diplomatic, negotiating track to solve conflicts are now relying more on legal, adjudicatory processes. Moreover, these institutions exhibit wide variation in their structure and use, varying from "hard" to "soft,"

from the more legalistic to the more politically and diplomatically driven (Smith, 2000). This paper addresses the effects of jurisdiction, strength of enforcement, and asymmetric information, as well as the costs of litigation, on the likelihood of pre-adjudicatory settlement and on the incidence of litigation. Both increased jurisdiction and increased strength of enforcement increase the likelihood that settlement offers are rejected and litigation ensues. However, the effect of jurisdiction and enforcement strength on the size of the initial settlement offer is more subtle: increases in jurisdiction will increase offers if the strength of the plaintiff's case is high, and cause the offer to fall otherwise. Increases in the strength of enforcement raises settlement offers, but also raises the chance that these offers will be rejected.

Goldstein et al. (2000) characterizes the level of international legalization along three dimensions: delegation, obligation, and precision. Delegation refers to the degree to which impartial third party bodies have been empowered to interpret rules, find facts, and judge state policy in the context of an international agreement. To some degree, this notion of delegation corresponds to our use of the term "jurisdiction"—the degree to which the court in question has standing to adjudicate the dispute in question, q. Obligation refers to the degree to which states are bound by the rules. This corresponds to our notion of the "strength of enforcement," $a - c$. Finally, precision refers to the degree of uncertainty that surrounds the rules. When precision is low, the rules permit a variation of interpretations, and this is likely to create uncertainty about the strength of a plaintiff's case, π.

When precision is low, asymmetric information about π is more likely to be relevant. In such a case, we find that greater delegation (high q) and obligation (large $a - c$) will make pre-trial settlement of the dispute less likely. The implication is that greater delegation and obligation are best suited to bodies of law that are more precise. However, even when law is precise the disputants may still possess asymmetric information

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about the *facts* of a given case. Precise law can lessen but not eliminate asymmetric information about π and therefore greater delegation and obligation always have the potential of reducing the probability of pre-trial settlements.

We find that the effects of enforcement strength and jurisdiction affect outcomes in the same direction: they magnify the effect of the asymmetry of information about the strength of the plaintiff's case. Recall that when the court has low jurisdiction, the strength of the case is somewhat immaterial to the final outcome because the case will likely be dismissed before trial. When the court has clear and strong jurisdiction, the effect of the uncertainty is more significant in affecting the final outcome of the dispute settlement process. Similarly, when enforcement strength is small, the power of the institution is limited, and the final outcome is determined largely by the post-adjudicative bargaining and not affected by the low enforcement institution. On the other hand, when the organization has enforcement power, the effect of the uncertainty on the case becomes more significant, affecting the level of the initial settlement offer, and the likelihood of its being declined and the case proceeding to litigation. In addition, we show that as the costs of litigation rise, settlement offers decline and the incidence of litigation falls.

Explorations of the outcomes at the International Court of Justice provide preliminary support for these claims. More detailed data collection and analysis is necessary, but in the cases where jurisdiction is well established, settlement is indeed less likely than in cases where jurisdiction is arguable. Additionally, Allee and Huth (2006) show that as the strength of enforcement increases, cases are more likely to be submitted to litigation. Preliminary analysis of available data lends plausibility to our results.

A key contribution here, together with Johns (2007), is that the court is not assumed to have either perfect or no enforcement power. Post-adjudicative bargaining is a core element of the analysis; the court influences those negotiations by changing the

bargaining power and positions of the disputants. Moreover, we permit this influence of the court to vary exogenously in order to explore the effect of this variation on settlement and litigation outcomes.

Our analysis shows that strengthening courts by increasing their jurisdiction and enforcement exacerbates the effect of the disputants' asymmetric information regarding the quality of the plaintiff's legal claim. If the court does not have jurisdiction or if its rulings do not appreciably change the bargaining outcomes between the disputants, then the plaintiff's private information about its legal claim is irrelevant. Asymmetric information about that validity of legal claims is important only when the court has an impact on the final outcome. In a manner of speaking, stronger courts magnify the importance of a source of asymmetric information (namely over the validity of the disputants' legal claims) that would otherwise be irrelevant. It is this added source of asymmetric information that reduces the probability that the disputants will settle their conflict without resorting to costly litigation. As international courts are endowed with increased authority, we should expect to see less settlement, more resources dissipated on litigation, and increased apparent conflict between states in these fora. States may still prefer to strengthen courts for other reasons—presumably international law is created in the first place to pursue particular normative ends, and the availability of strong legal fora for dispute resolution ensures that real-life outcomes can more closely resemble the outcomes prescribed by the law.[33] Nonetheless, the point of this paper is to show that such an institutional change comes at a cost.

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[33]We thank Erik Voeten for highlighting this point in personal communications.

Appendix

Define: $T \equiv \frac{k}{v_D} + \frac{k}{v_P}$ and $\Delta_\pi \equiv E[x|\pi] - E[x|\pi = 0] = q\pi(a - c)$.

<u>Proof of Theorem:</u>

- (*Existence*): Fix $s^*(\pi)$ and $\pi^*(s)$. Then D is indifferent over all $r(s) \in [0, 1]$ for $s \in [s^*(0), s^*(1)]$. If $s > s^*(1)$, then eqm beliefs ensure that D believes $\pi = 1$, so her unique best response is $r^*(s) = 1$. If $s < s^*(0)$, then eqm beliefs ensure that D believes $\pi = 0$, so her unique best response is $r^*(s) = 0$. Fix $r^*(s)$ and $\pi^*(s)$. Note that $\frac{1 - r^*(s)}{r'^*(s)} = T$, which ensures that $s^*(\pi) = E[x|\pi] + \frac{k}{v_D}$. Finally, fix $s^*(\pi)$ and $r^*(s)$, and note the consistency of $\pi^*(s)$ for equilibrium offers.

- (*Uniqueness*): See Reinganum and Wilde (1986: 565). □

<u>Proof of Proposition 1:</u>

$$\begin{aligned}
\frac{\partial s^*}{\partial \pi} &= \frac{\partial}{\partial \pi} E[x|\pi] = q(a - c) > 0 \\
\frac{\partial r^*}{\partial s} &= \frac{\partial}{\partial s}\left[1 - exp\left(-\frac{s - s^*(0)}{T}\right)\right] = exp\left(-\frac{s - s^*(0)}{T}\right)\left[\frac{1}{T}\right] > 0 \quad \square
\end{aligned}$$

<u>Proof of Proposition 2:</u>

$$\begin{aligned}
\frac{\partial s^*}{\partial q} &= \pi a + (1 - \pi)c - b \\
&\Rightarrow \frac{\partial s^*}{\partial q} > 0 \text{ for } \pi > \frac{b - c}{a - c} \equiv \hat{\pi} \in (0, 1), \text{ and } \frac{\partial s^*}{\partial q} < 0 \text{ for } \pi < \hat{\pi} \\
\frac{\partial r^*(s^*(\pi))}{\partial q} &= \frac{\partial}{\partial q}\left\{1 - exp\left(-\frac{\Delta_x}{T}\right)\right\} = exp\left(-\frac{\Delta_x}{T}\right)\left[\frac{1}{T}\right]\frac{\partial}{\partial q}\Delta_x \\
&\Rightarrow \frac{\partial r^*(s^*(\pi))}{\partial q} > 0 \text{ if } \pi > 0, \text{ and } \frac{\partial r^*(s^*(\pi))}{\partial q} = 0 \text{ if } \pi = 0 \quad \Rightarrow \frac{\partial t^*}{\partial q} > 0 \quad \square
\end{aligned}$$

Proof of Proposition 3:

$$
\begin{aligned}
\frac{\partial s^*(\pi)}{\partial k} &= \frac{1}{v_D} > 0 \\
\frac{\partial r^*(s^*(\pi))}{\partial k} &= \frac{\partial}{\partial k}\left\{1 - exp\left(-\frac{\Delta_x}{T}\right)\right\} = -exp\left(-\frac{\Delta_x}{T}\right)\left[\frac{\Delta_x}{T^2}\right]\frac{\partial T}{\partial k} \\
&\Rightarrow \frac{\partial r^*(s^*(\pi))}{\partial k} < 0 \text{ if } \pi > 0, \text{ and } \frac{\partial r^*(s^*(\pi))}{\partial k} = 0 \text{ if } \pi = 0 \;\Rightarrow\; \frac{\partial t^*}{\partial k} < 0 \quad \square
\end{aligned}
$$

Proof of Proposition 4:

$$
\begin{aligned}
\frac{\partial s^*(\pi)}{\partial a} &= q\pi \geq 0 \quad \text{and} \quad \frac{\partial s^*(\pi)}{\partial b} = 1 - q > 0 \quad \text{and} \quad \frac{\partial s^*(\pi)}{\partial c} = q(1-\pi) \geq 0 \\
\frac{\partial r^*(s^*(\pi))}{\partial b} &= \frac{\partial}{\partial b}\left\{1 - exp\left(-\frac{\Delta_x}{T}\right)\right\} = exp\left(-\frac{\Delta_x}{T}\right)\left[\frac{1}{T}\right]\frac{\partial}{\partial b}\Delta_x = 0 \;\Rightarrow\; \frac{\partial t^*}{\partial b} = 0 \\
\frac{\partial r^*(s^*(\pi))}{\partial a} &= \frac{\partial}{\partial a}\left\{1 - exp\left(-\frac{\Delta_x}{T}\right)\right\} = exp\left(-\frac{\Delta_x}{T}\right)\left[\frac{q\pi}{T}\right] \\
&\Rightarrow \frac{\partial r^*(s^*(\pi))}{\partial a} > 0 \text{ if } \pi > 0, \text{ and } \frac{\partial r^*(s^*(\pi))}{\partial a} = 0 \text{ if } \pi = 0 \;\Rightarrow\; \frac{\partial t^*}{\partial a} > 0 \\
\frac{\partial r^*(s^*(\pi))}{\partial c} &= \frac{\partial}{\partial c}\left\{1 - exp\left(-\frac{\Delta_x}{T}\right)\right\} = exp\left(-\frac{\Delta_x}{T}\right)\left[\frac{-q\pi}{T}\right] \\
&\Rightarrow \frac{\partial r^*(s^*(\pi))}{\partial c} < 0 \text{ if } \pi > 0, \text{ and } \frac{\partial r^*(s^*(\pi))}{\partial c} = 0 \text{ if } \pi = 0 \;\Rightarrow\; \frac{\partial t^*}{\partial c} < 0 \quad \square
\end{aligned}
$$

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Table 1: Descriptive Statistics for Settlement and Litigation in the ICJ

	Pooled Cases	Jurisdictional Claim	
		Special Agreement	Other Basis
Cases initiated	83	15	68
Jurisdiction challenged	56	1	55
Cases settled	19	0	19
Cases not settled	64	15	49
- Case dismissed	27	0	27
- Substantive ruling	37	15	22

Note: Requests for interpretation and revision, open cases, and unreciprocated claims under Article 38 (5) of the Rules of the Court are excluded. "Other Basis" includes claims raised under compromissory clauses and/or Article 36 (2) of the ICJ Statue.

Table 2: Hypothesis Tests with Two Measures of Strength of Court Authority to Rule (q)

| | | Proxy for q | | |
| | Special Agreement | | Jurisdictional Challenge | |
	Yes	No	Yes	No
Settle	0	19	12	1
Don't Settle	15	49	44	20
Total	15	68	56	21
Pearson χ^2	5.435		25.756	
p-value	0.020		0.000	

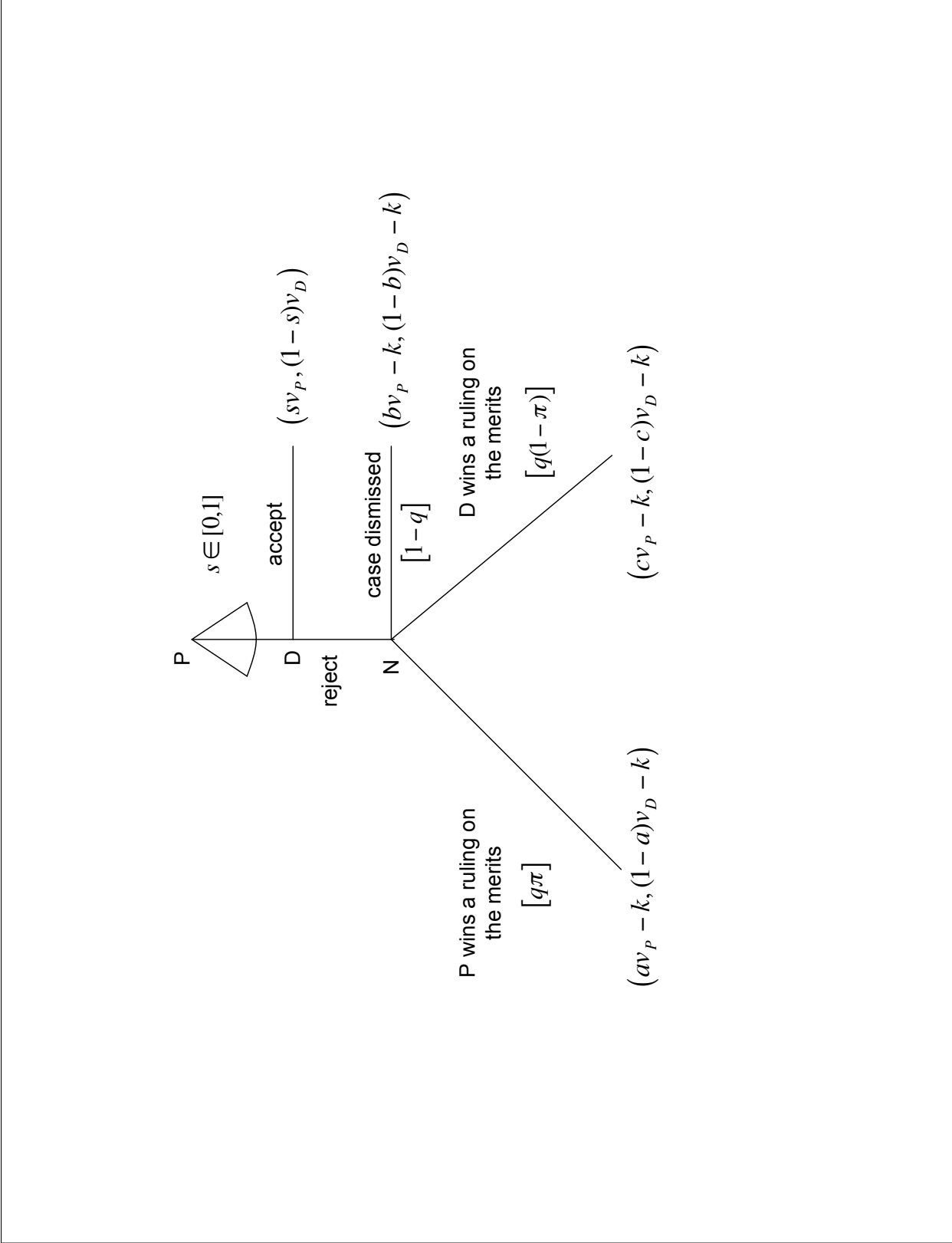Note: The total number of cases under "Jurisdictional Challenge" adds to 77 rather than 83 because six cases were settled before jurisdictional challenges could be lodged.

Figure 1: Structure of the Model