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Litigation Cost Allocation Rules, Judicial Detection Skill, and the Propensity to International Trade

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Abstract

Abstract The paper analyzes the effects of different litigation cost allocation rules, detection skill of judges (judicial errors), and the mode of enforcement of foreign judgments on the home bias in trade and sheds a new light on the so-called border-effect puzzle. In our model the border effect or home bias is due to a violation of the contractual compliance constraint. Three types of transaction costs play a role in this context: costs of opportunistic suits (litigation opportunism), costs of legitimate suits and costs of cheating (contractual opportunism). Two rules of international procedural law regarding the enforcement of foreign judgments are considered: automatic enforcement of foreign judgments and enforcement after a judicial review. Our theoretical analysis suggests that both the British as well as the American rule of litigation cost allocation can, in principle, induce bilateral contractual compliance, but only if judges possess positive detection skill. It depends on the specification of the parameters of the international legal order and the features of a transaction which rule is the better one. Finally, the paper discusses a recent empirical study and data from a report by the World Bank which are consistent with the paper's theoretical findings.

I. Introduction

The paper analyzes the effects of different litigation cost allocation rules, detection skill of judges (judicial errors), and the mode of enforcement of foreign judgments on the home bias in trade and sheds a new light on the so-called border-effect puzzle. This puzzle refers to the question why there is too little international trade and too much intranational trade to be rationalized by models with zero or standard international trade costs such as tariffs, non-tariff barriers and transport costs (Obstfeld and Rogoff 2001). The mere presence of borders seems to impede trade even between countries that have almost completely liberalized trade and are similar in terms of culture, institutions and language.

We show that two constraints are crucial for the propensity to trade internationally. Firstly, a Pareto improvement is necessary for international trade to come about. This Pareto constraint is also taken into account by the traditional economics of international trade. The second constraint, not explicitly dealt with in traditional international economics, is the so-called contractual compliance constraint, which is the central topic of this paper.

In our model the border effect or home bias is due to a violation of the contractual compliance constraint. Three types of transaction costs play a role in this context: costs of opportunistic suits (litigation opportunism), costs of legitimate suits and costs of cheating (contractual opportunism).

We analyze the American and British rule of litigation cost allocation and derive conditions for successful international contracts in each case. Whereas under the American rule each party pays its own litigation costs independent of the case's outcome, under the British rule the loser of a lawsuit has to bear both parties' costs. With regard to the enforcement of foreign judgments we distinguish between two different regimes: In the first one, recognition and enforcement require a separate judicial decision. In the second regime foreign court judgments are automatically recognized and enforced, which means a free movement of court judgments. In essence, foreign judgments are treated by a sovereign nation as if they were issued by a domestic court. This is what, for example, the EU wants to establish in order to make progress in the creation of a truly internal market in Europe (see EU 2010; Commission of the EU 1995, Annexe, p. 331; Council Regulation (EC) No 44/2001 of 22 December 2000). In addition, we take into account the fact that due to the involvement of

multiple legal jurisdictions and imperfect competencies or biases of judges, enforcement of contracts is imperfect to an extent we do not observe in the national arena. This imperfection is a source of transaction costs limiting international trade considerably.

To the best of our knowledge, the question addressed in this paper has not been dealt with in the literature. The traditional literature concerned with international procedural law neglects the impact on international trade. By contrast, this impact is at the heart of this paper. Moreover, most of the literature on international procedural law as well as on conflict of laws in general is only concerned with after-the-conflict issues. By contrast, this paper focuses on the ex-ante decision: whether or not parties engage in international transactions and fulfill their contractual obligations (without filing opportunistic suits).

The conventional economic theory of international trade neglects that imperfect enforcement of contracts raises transaction costs and limits international trade. A serious analysis of the international *transaction* and the contractual hazards associated with it does not exist. As Anderson rightly mentions: “The received theory of international trade is curious because it contains no international traders; their actions and interactions take place offstage” (Anderson 2008, p. 141).

More recent studies identified differences in the legal and institutional set up of countries and in particular contract enforcement as an important determinant of comparative advantage. According to a study by Nunn differences in the quality of contract enforcement explain more of the pattern of trade with goods for which relationship-specific investments are important than physical capital and skilled labor combined (Nunn 2007). Nunn as well as other papers concerned with the effect that contract enforcement can have on comparative advantage referred to in his article surely investigate an important determinant of the pattern of international trade, but an in-depth analysis of the incentives to conclude and honor contracts in international trade in the shadow of the courts is still missing.

The literature concerned with the so-called “border effect puzzle” or “home bias in trade” puzzle and the mostly empirical literature testing gravity models (McCallum 1995; Anderson and Marcouiller 2002; Anderson and Wincoop 2004; Zwinkels and Beugelsdijk 2010; Baldwin and Taglioni 2006) recognize that the heterogeneity of legal systems can be the source of transaction costs leading to a home bias in trade. However, both strands of the modern literature on international trade, with the exception of an article by Turrini and van

Ypersele (2010), still focus on bilateral gross aggregate trade flows from one country to another.¹ Turrini and van Ypersele use a matching model to show that asymmetries in legal costs produce a home bias or border effect. But there is no investigation of the impact of alternative litigation costs allocation rules, judicial detection skill and international procedural law on the propensity to trade internationally.

Our paper deviates from this empirical literature with regard to five aspects: (1) Individual contracts are chosen as the elementary unit of economic research. (2) Contractual hazards are considered the driving force behind the border effect. (3) The paper takes into account the transaction costs created by the option to file opportunistic suits beside legitimate ones. Because of this expansion of the option set of litigants, judges are confronted with a much more complex problem than if they would know for sure that suits are legitimate. (4) Since the legal disputes we are interested in involve events that concern more than one legal system, rules of international procedural have to be considered. These rules accompanied by bilateral or multilateral agreements among sovereign states define the options available for filing a suit. They determine which court has jurisdiction and which law applies to a given legal dispute. It depends also on these rules whether or not a legal title can be enforced in a foreign country. Judgments are acts of state. The direct effects of these judgments end on national borders. To be able to have an effect outside of the state they are issued in, the cooperation of foreign countries is required which is not a matter of course. (5) Besides imperfections of legal rules due to the diversity and territoriality of law, imperfections on the side of judges can also create significant barriers to trade even if the legal costs of the enforcement of foreign judgments are assumed to be zero. As an analytical framework to capture these imperfections we introduce the concept of “judicial detection skill” (see Kirstein and Schmidtchen 1997).

Judicial detection skill is measured by two conditional probabilities: the probability that a plaintiff wins, given the suit is legitimate (has merit), and the probability of prevailing, given that the suit is opportunistic or frivolous. If the former probability is higher than the latter one, then the judge is said to have positive detection skill. Should the former be 1 and the latter 0, we would call this perfect detection skill. With imperfect positive detection skill a judge is able to distinguish between legitimate and opportunistic suits better than by pure

¹ It should be mentioned that as early as 1990 the heterogeneity of legal systems has been gametheoretically analyzed as a barrier to international trade and suggested as a solution to the “border effect” puzzle – without using this term (Schmidtchen and Schmidt-Trenz 1990; Schmidt-Trenz and Schmidtchen 1991).

chance, but not free of errors. However, if these two probabilities are equal, then the judge is said to have zero skill. In the latter case a judge decides no better than by pure chance, which means that the perceived probability of a decision in favor of the plaintiff does not depend on whether a suit is legitimate or opportunistic.² The observation that judges acquire through many years of training and experience in their profession may induce potential litigants to perceive that judges have imperfect positive detection skill. This concept is also applied when analyzing the effects of a judicial bias, either a domestic or a foreign bias. A domestic bias is said to exist if a judge is pro-plaintiff or pro-defendant when a suit is brought in the home country of the plaintiff or the defendant, respectively. We speak of a foreign bias if a judge is pro-defendant or pro-plaintiff when a suit is brought in the plaintiff's or defendant's home country, respectively.

To answer the central question of the paper we analyze an international trade game with perfect and complete information which consists of three parts: the contract stage, the litigation stage and the enforcement stage. In the contract stage the pre-conflict behavior of the contracting parties is chosen. In the litigation stage one of the parties is given the option to sue. Litigation is called legitimate if the other party has not complied with the contract. Litigation is called opportunistic if the potential defendant has actually fulfilled her obligation. Thus, the litigation stage consists of two proper subgames.

In the enforcement stage the foreign court judgments have to be recognized by a court of the country in which the judgment is to be enforced. The enforcement stage consists of two proper subgames: One following a legitimate suit, the other one following an opportunistic suit. Again judges are represented by two conditional probabilities: the probability of recognition and enforcement of the foreign judgement, given the suit was legitimate, and the probability of recognition and enforcement in case of an opportunistic suit.

We show that positive judicial detection skill is a necessary (but not sufficient) condition for inducing bilateral contractual compliance as well as for preventing litigation

² The basic idea of this approach is adapted from Heiner (1983,1985), who refers to the experimental psychology literature about imperfect detection of signals. In such experiments a person must decide repeatedly whether a signal is present or not. The judge is in a very similar position when he has to decide whether suits are opportunistic or not. Note that this approach substantially differs from the approach in Priest and Klein (1984) and Polinsky and Shavell (1989), who also use different probabilities. In their models, the two probabilities represent the plaintiff's and the defendant's beliefs concerning the chances of the plaintiff's victory.

opportunism. This has already been proven in Kirstein and Schmidtchen (1997), however, for the much simpler setting of a two-stage game without international dimensions.

Our theoretical analysis suggests that both the British as well as the American rule of litigation cost allocation can in principle induce bilateral contractual compliance if judges possess positive detection skill. However, the model does not allow for a definitive answer to the question “Which rule is better?”. All we can say is that it depends on the specification of the parameters of the international legal order and the features of a transaction, which are empirical questions.

The remainder of the paper is organized as follows. Section II analyses the three-stage game. We derive conditions for bilateral contractual compliance both for the British rule and the American rule of cost allocation, in each case distinguishing between enforcement of foreign judgments after a judicial review and automatic enforcement. Section III deals with the impact of both cost allocation rules on the propensity to trade internationally. In addition we compare both rules regarding their ability to induce bilateral contractual compliance and discuss a recent empirical study and data from a report by the World Bank which are consistent with our findings. We should stress that we only deal with the bare bones of both cost allocation rules. Actually these rules are much more complex than presented here (Katz 2000). But nevertheless, we find that the analysis of these basics is interesting in itself and justifies our reduction of complexity. Section IV discusses “constitutional uncertainty” as another solution to the border-effect puzzle. Section V provides a discussion of our results and section VI concludes.

II. International transactions in the shadow of courts

1. The international trade game with litigation

Consider a potential international transaction between two firms, A located in a -land and B located in b -land. Both parties are risk-neutral payoff maximizers. A promises to deliver a good which he values with X in exchange for a good, to be delivered by B, valued with Y by both. B’s valuation of the good delivered by A is denoted Z . We assume $Z > Y > X$

> 0 . Hence, the parties would mutually benefit if both promises were fulfilled.³ Having concluded the contract, the parties play a one-shot game, which we call contract game and which is common knowledge among the parties. Fig. 1 represents the extensive form of the game, where the first entry in the brackets denotes A's payoff and B's payoff is the second entry. A's decision nodes are labelled as *A*. B's node is labelled as *B*. Judges are represented by *J* and *E* for the litigation stage and the recognition and enforcement stage, respectively.

The model starts with the contract stage. At the root of the game tree A has two actions: $\{in, out\}$. Action *in* means concluding a contract with B and delivering the good as a first mover; action *out* can be interpreted as limiting oneself to a national transaction (among citizens of state *a*), which yields a net gain of zero. B has two strategies $\{cheat, honor\}$.⁴ In the second stage, the litigation stage, A, after having chosen option *in* and observed B's reaction, now has to decide whether to sue B for *Y*, with *Y* taken to be the value of the case or the value at stake. In the sequence of actions $(in, honor, lit^{opp})$ litigation is opportunistic, whereas on the sequence $(in, cheat, lit^{leg})$ it is legitimate. (The symbols $nlit^{opp}$ and $nlit^{leg}$ denote A's decision not to bring an action.)⁵ If A chooses to sue, the game reaches one of the nodes labeled *J*, which represent the involvement of a judge. In this paper we do not analyze the court's decision-making process itself, but represent it by the plaintiff's and the defendant's probabilities of prevailing. Note that we only focus on errors about the true facts of the case, but not on errors concerning the correct damage or the interpretation or the choice of legal rules.

[Figure 1 about here]

The judge decides an opportunistic suit in favor of the plaintiff A with probability w_i , action *Apr*, with $1-w_i$ the defendant B prevails, *Bpr*. In case of a legitimate suit the judge decides in favor of the plaintiff A, action *pr*, with probability r_i , with $1-r_i$ the defendant

³ For ease of exposition, we rule out third-party effects.

⁴ In this paper we assume that it is only B who has an option for a breach of contract. However, the results of our analysis do not depend on which party is considered to be the first mover. Moreover, asymmetric positions in international trade seem to be the most likely case despite the common usage of bank guarantees or documentary letters of credit. Public policies aimed at facilitating international transactions such as public support to export credit and insurance delivers additional evidence (Turrini and van Ypersele 2010). An analysis of a case with both parties moving simultaneously is presented in (Schmidt-Trenz and Schmidtchen 1991).

⁵ We do not analyze the much more complex case in which litigation is partly legitimate and partly opportunistic.

prevails, action npr . Index i indicates the nationality of the court to which action is brought, with $i \in \{a; b; k\}$, where a denotes A's home court, b denotes B's home court, and k denotes a court in another country.

If A prevails, then an additional problem arises. In a world with several sovereign states, a judgment that is spoken in a specific country is not automatically enforceable in another country, and if it is enforceable, there is no guarantee that payment of the amount awarded can be enforced.

Usually, recognition of foreign judgments and their enforcement requires a court decision (indicated in Fig. 1 by the two nodes E). Again, we represent this court by two probability distributions. We denote the probability that court E in country j acknowledges the foreign judgment of state i (and gives permission to enforce it) as w_{ij} (with $i, j \in \{a; b; k\}$), if the suit is opportunistic (upper node E), action enf . With probability $(1-w_{ij})$, this is denied, action $nenf$. If the suit is legitimate (lower node E) the respective probabilities are r_{ij} for action enf , and $1-r_{ij}$ for action $nenf$.

In case of the American rule, we denote with P_i the costs a plaintiff has to bear if litigation takes place, whereas D_i denotes the defendant's costs. With the British rule the loser of a case must in principle bear the litigation costs of both parties, denoted C_i . Litigation costs include both the costs of the engagement of lawyers and the involvement of a court.⁶ For ease of exposition, we assume that recognition and enforcement in country j do not produce additional costs.

The payoffs in the international trade game do not only depend on the contract parameters (X, Y, Z) , but also on the parameters (r_i, w_i) and (r_{ij}, w_{ij}) , and on the litigation costs P_i, D_i or C_i .

The payoffs for each path through the game are straightforward and indicated at the respective end nodes. Fig 1 represents the payoffs for the British rule. As for the American

⁶ We do not analyze rules according to which the losing party has to pay the court cost of both parties but not the expenses for lawyers engaged by the winning party. Those rules exist in some European countries (Katz 2000).

rule, the payoffs at the end nodes to the six litigation paths, denoted (1) – (6), are depicted in table 1 (for completeness only, the payoffs under the British rule are also included).

[Table 1 about here]

The aim of the subsequent analysis is to derive the conditions under which both parties are motivated to fulfill the contract and A is motivated to abstain from an opportunistic suit.⁷ We call this outcome *bilateral contractual compliance*. Bilateral contractual compliance occurs if the parameters $(r_i, w_i, r_{ij}, w_{ij}, C_i, P_i, D_i)$ and the cost allocation rule in a contract game are such that [*in; honor; nlit^{opp}*] is the unique subgame-perfect equilibrium path.

2. The British rule

We firstly analyze the British rule under the assumption that a judgment shall be enforced after it has been recognized and declared enforceable by a foreign judge. This is followed by an analysis assuming automatic recognition and enforcement of a foreign judgment.

2.1. Recognition and enforcement based on a judicial review

Applying the logic of backwards induction, it can be shown that bilateral contractual compliance requires the court handing down the judgment to make sure that three conditions are simultaneously fulfilled:

Firstly, A is motivated not to sue opportunistically. This condition is relevant if the path (*in, honor*) is being played and the game reaches upper decision node A. A will not initiate an opportunistic suit, if the following condition holds:

$$(1) \quad (Y-X) > w_i \cdot w_{ij} (2Y-X) + (1-w_i \cdot w_{ij})(Y-X-C_i).$$

This condition can be simplified to

$$(2) \quad w_i \cdot w_{ij} < C_i/(Y+C_i).$$

⁷ Of course, there exist two other scenarios: B files an opportunistic suit or both do. We don't analyze these cases. Moreover, in case of complex and incomplete contracts there exist a whole bunch of options to sue opportunistically. For example one could claim that the quality of the good delivered was inferior or the good was not delivered in a timely fashion or to the location agreed upon.

Thus, the chance of an opportunistic suit being successful, as measured by $w_i \cdot w_{ij}$, should not be too high.

Secondly, A is motivated to sue legitimately. This second condition is relevant after the path (*in, cheat*) has been played (lower decision node A). To give A an incentive to initiate a legitimate suit the following condition must be met:

$$(3) \quad r_i \cdot r_{ij}(Y-X) + (1-r_i \cdot r_{ij})(-X - C_i) > -X.$$

This is equivalent to:

$$(4) \quad r_i \cdot r_{ij} > C_i/(Y+C_i).$$

Thus, the chance of being successful when filing a legitimate action, as measured by parameter $r_i \cdot r_{ij}$, should not be too low. The likelihood of effective legal protection $r_i \cdot r_{ij}$ must exceed a threshold determined by the litigation costs C_i and the value of the case Y .

Thirdly, B is motivated to comply with the contract. As for the third condition, B is motivated to honor the contract (decision node B) if in addition to conditions (2) and (4) the following condition holds:

$$(5) \quad (Z-Y) > r_i \cdot r_{ij} (Z-Y-C_i) + (1-r_i \cdot r_{ij})Z$$

This is equivalent to

$$(6) \quad r_i \cdot r_{ij} > Y/(Y+C_i).$$

With conditions (2), (4) and (6) being met A can count on B playing *honor* after having chosen to play *in*, and B can be sure that A resists initiating an opportunistic suit after having played *honor*. Conditions (2), (4) and (6) are necessary and sufficient for bilateral contractual compliance, as the last step of backwards induction demonstrates: A has a choice at his first decision node between *out*, which brings him payoff 0, and *in*, which yields $(Y-X)$. He chooses *in*, since the payoff is greater than zero by assumption. This establishes our first proposition:

Proposition 1: *Given the British cost allocation rule in the international trade game, international procedural law allowing a plaintiff to bring suit in country $i \in \{a; b; k\}$, with the judgment recognized and enforced in country $j \in \{a; b; k\}$ after a judicial review of*

the judgment in country j , induces bilateral contractual compliance iff the following condition holds:

$$(7) \quad w_i \cdot w_{ij} < C_i/(Y+C_i) < r_i \cdot r_{ij} \text{ and } r_i \cdot r_{ij} > Y/(Y+C_i).$$

In this case the transaction proceeds smoothly, i.e., the courts are not employed: the international transaction proceeds in the shadow of the courts.⁸

Condition (7) implies that the option to sue in country i and the review for recognition and enforcement of a judgment from country i in country j induces bilateral contractual compliance if $r_i \cdot r_{ij} > w_i \cdot w_{ij}$. Without positive detection skill of the judge of at least one country it is impossible to meet this condition. Moreover, the condition is necessary but not sufficient for contractual compliance. The litigation costs as well as the value at stake define a threshold value which can be missed even if the judges in both countries possess positive detection skill. However, with $r_i \cdot r_{ij} > w_i \cdot w_{ij}$ it is possible to design the parties' litigation costs (C_i) such that condition (7) holds.

2.2. Automatic recognition and enforcement ($r_{ij}, w_{ij} = 1$)

Automatic enforcement means that a judgment handed down by a judge in state i will be recognized and enforced in state j without being subject to further scrutiny by a judge in state j . Consequently, parameters r_{ij} and w_{ij} in Fig. 1 have to be set equal to one. Given the results of the former section, the determination of the condition for bilateral contractual compliance if foreign judgments are automatically recognized and enforced is straightforward:

Proposition 2: *Assume the British cost allocation rule and automatic enforcement of foreign judgments in country $j \in \{a; b; k\}$. International procedural law that allows a plaintiff to file suit in country $i \in \{a; b; k\}$, induces bilateral contractual compliance iff*

$$(8) \quad w_i < C_i/(Y+C_i) < r_i \text{ and } r_i > Y/(Y+C_i)$$

holds.

⁸ One can also derive conditions for one-sided contractual compliance or for equilibria in which both parties cheat. But this is beyond the scope of this paper.

In this case the transaction proceeds smoothly, i.e., the courts are not employed: the international transaction proceeds in the shadow of the courts.

2.3. Comparing both regimes

Given the parameters Y and C_i are identical in both regimes of international procedural law, one can derive some conclusions as for the effect of a move from enforcement after a judicial review to automatic enforcement on bilateral contractual compliance.

Firstly, to figure out the effect of a switch from enforcement after review to automatic enforcement on bilateral contractual compliance, it suffices to compare the values of (r_i, w_i) with $(r_i \cdot r_{ij}, w_i \cdot w_{ij})$ if the threshold values remain the same.

With $1 > r_i > w_i > 0$ the winning probability of both legitimate and opportunistic suits is necessarily higher than the probability of success after a review in the enforcement stage, i.e., $r_i \cdot r_{ij} < r_i$ and $w_i \cdot w_{ij} < w_i$. This implies that under a procedural international law regime with judicial review of foreign judgments in the enforcement state j , it is, compared to an automatic recognition and enforcement, on one hand more difficult to meet the condition for bilateral contractual compliance, since $r_i \cdot r_{ij} < r_i$, and on the other hand easier because of $w_i \cdot w_{ij} < w_i$.

Three possibilities exist depending on the type of the judges:⁹

- The review of a judgment from country i in country j induces bilateral contractual compliance, whereas automatic enforcement does not. This happens, for example, if the judge in country i is pro-plaintiff such that condition (8) is violated (high w_i , say because of a domestic bias) and the judge in country j ensures that condition (7) holds (low w_{ij} and sufficiently high r_{ij}).

⁹ For a more comprehensive discussion of inefficient lawmaking by judges (see O'Hara/Ribstein 2000, pp. 8–9).

- The review of a judgment from country i in country j undermines bilateral contractual compliance that would result under automatic enforcement. This happens, for example, if the judge in country i is fair in the sense that condition (8) is met, but the judge in country j is pro-defendant (the detection probabilities are such that condition (7) is violated, i. e. low r_{ij} and/or high w_{ij}). A reason for this happening might be a domestic bias if B is located in state j .

- Of course, it is straightforward to see that under certain circumstances a switch to enforcement after a review does not change matters. Either bilateral contractual compliance still occurs or the failure to induce bilateral contractual compliance cannot be remedied.

Secondly, since higher values of Y relative to C_i increase the second threshold value in (7) and, necessarily, reduces the first one, we can state the following corollary to proposition 1:

Corollary: *Given the British cost allocation rule in the international trade game with international procedural law allowing a plaintiff to bring suit in country $i \in \{a; b; k\}$ and to enforce the judgment in country $j \in \{a; b; k\}$, automatic enforcement is more likely to induce bilateral contractual compliance than enforcement after the review the higher Y relative to C_i .*

3. American cost allocation rule

As in the section analyzing the British rule, we first analyze a regime with recognition and enforcement after a judicial review, which is then followed by an analysis of an automatic enforcement regime.

3.1. Recognition and enforcement after judicial review

According to the American cost allocation rule, each party has to bear its own litigation costs regardless of the outcome in court. A condition for bilateral contractual compliance can be derived in a similar manner as for the British rule. Let P_i denote the litigation costs to be borne by the plaintiff A, while D_i denotes B's (the defendant's) litigation costs. As with the British rule, bilateral contractual compliance can only occur if the court

handing down the judgment ensures that A is not motivated to bring an opportunistic suit, but has incentives to litigate legitimately, and that B is motivated to comply with the contract.

A is not motivated after the path (*in, honor*) to bring an opportunistic suit, if the following condition holds:

$$(9) \quad (Y-X) > w_i \cdot w_{ij} (2Y-X-P_i) + (1-w_i \cdot w_{ij})(Y-X-P_i).$$

This is equivalent to

$$(10) \quad w_i \cdot w_{ij} < P_i/Y.$$

Thus, the chance of winning an opportunistic suit as measured by $w_i \cdot w_{ij}$ should not be too high.

A is motivated after path (*in, cheat*) to bring a legitimate suit, if the following condition holds:

$$(11) \quad r_i \cdot r_{ij} (Y-X-P_i) + (1-r_i \cdot r_{ij})(-X - P_i) > -X.$$

This is equivalent to

$$(12) \quad r_i \cdot r_{ij} > P_i/Y.$$

Thus, the chance of being successful when bringing a legitimate suit as measured by $r_i \cdot r_{ij}$ should not be too low.

B is motivated at decision node B to honor the contract if in addition to conditions (10) and (12) the following condition holds:

$$(13) \quad (Z-Y) > r_i \cdot r_{ij} (Z-Y-D_i) + (1-r_i \cdot r_{ij})(Z-D_i)$$

This condition can be simplified to

$$(14) \quad r_i \cdot r_{ij} > (Y-D_i)/Y.$$

Thus, the chance of being successful when bringing a legitimate suit as measured by $r_i \cdot r_{ij}$ should not be too low.

Conditions (10), (12) and (14) are necessary and sufficient for bilateral contractual compliance as the last step of backwards induction demonstrates: A has a choice at his first

decision node between *out*, which brings him payoff 0, and *in*, which yields $(Y-X)$. He chooses *in*, since the payoff is greater than zero by assumption. This establishes our third proposition:

Proposition 3: *Given the American rule of cost allocation in the contract game, international procedural law allowing a plaintiff to bring suit in country $i \in \{a; b; k\}$ with the judgment recognized and enforced in country $j \in \{a; b; k\}$ after a judicial review of the judgment in country j , induces contractual compliance iff the following condition holds:*

$$(15) \quad w_i \cdot w_{ij} < P_i/Y < r_i \cdot r_{ij} \quad \text{and} \quad r_i \cdot r_{ij} > (Y-D_i)/Y.$$

The option to sue in country i and the review for recognition and enforcement of a judgment from country i in country j induces bilateral contractual compliance if $r_i \cdot r_{ij} > w_i \cdot w_{ij}$. Without positive detection skill of the judge of at least one country it is impossible to meet this condition. Moreover, $r_i \cdot r_{ij} > w_i \cdot w_{ij}$ is necessary but not sufficient for contractual compliance. The litigation costs as well as the value at stake define a threshold value which can be missed even if the judges in both countries possess positive detection skill. However, with $r_i \cdot r_{ij} > w_i \cdot w_{ij}$ it is possible to design the parties' litigation costs (P_i and D_i) such that condition (15) holds.

3.2. Automatic enforcement ($r_{ij} w_{ij} = 1$)

Given the results of the former section, the determination of the condition for bilateral contractual compliance if foreign judgments are automatically recognized and enforced is straightforward. Parameters r_{ij} and w_{ij} in Proposition 3 have to be set equal to one. This leads to proposition 4:

Proposition 4: *Given the American rule of cost allocation in the contract game, international procedural law allowing a plaintiff to bring suit in country $i \in \{a; b; k\}$ with the judgment being automatically recognized and enforced in country $j \in \{a; b; k\}$, induces bilateral contractual compliance iff conditions (10), (12) and (14) are simultaneously met, i.e.,*

$$(16) \quad w_i < P_i/Y < r_i \quad \text{and} \quad r_i > (Y-D_i)/Y.$$

Condition (16) reveals that positive detection skill ($I > r_i > w_i > 0$) is necessary for bilateral contractual compliance. Although positive detection skill is a prerequisite for this motivational impact, it might still be insufficient. The litigation costs as well as the value at stake define a threshold value which can be missed even if the judges in both countries possess positive detection skill.

3.3. Comparing both regimes

Given the parameters Y_i , P_i and D_i are identical in both regimes, one can derive some conclusions as for the effect of a move from enforcement after a judicial review to automatic enforcement on bilateral contractual compliance.

Firstly, to figure out the effect of a switch from enforcement after review to automatic enforcement on bilateral contractual compliance, it suffices to compare the values of (r_i, w_i) with $(r_i \cdot r_{ij}, w_i \cdot w_{ij})$. Reasoning and results are identical with those of the British rule.

Secondly, since higher values of Y relative to P_i increase the second threshold value in (15) and, necessarily, reduces the first one, we can state the following corollary to proposition (3):

Corollary: *Given the American cost allocation rule in the international trade game with international procedural law allowing a plaintiff to bring suit in country $i \in \{a; b; k\}$ and to enforce the judgment in country $j \in \{a; b; k\}$, automatic enforcement is more likely to induce bilateral contractual compliance than enforcement after the review the higher Y relative to P_i .*

III. The Propensity to Trade Internationally

In this section we derive some lessons as for the impact of the British and American rules of cost allocation on the propensity to trade internationally. Our model allows only for a dichotomous distinction of propensities between high and low. The propensity to trade internationally is high if the respective condition for bilateral contractual compliance is satisfied. It is low if this condition is violated. In the former case parties are motivated to

conclude an exchange contract and international trade occurs, in the latter one a contract does not come into existence and mutually beneficial trade does not happen.

To figure out the propensity to trade internationally and evaluate both rules with regard to the likelihood of inducing bilateral contractual compliance, we apply a two-step procedure:

The first step consists of a determination of threshold values for the value at stake in order to ensure a high propensity to trade internationally for both the British and the American rule (sections 1 and 2).

In the second step (section 3) we compare both rules according to their respective threshold values. The rule with the higher likelihood that the threshold values of the respective sub-conditions are met is the better one. This comparison is based on the assumption that the value at stake, Y , is given and identical for both rules. In addition, we assume that the total costs of a trial are equal under both rules, i.e. $C_i = P_i + D_i$.

It is helpful to reformulate our insights in transaction cost terms. Transaction costs are the costs of negotiating, drafting and enforcing contracts. They include search and information costs, bargaining and decision costs, safeguarding, policing and enforcement costs as well as efficiency losses that result when conflicts are not perfectly resolved. This paper is concerned with the enforcement costs and efficiency losses due to both the international dimension of the transaction and insufficient detection skill of judges.

In the following, we firstly identify the transaction costs of both cost allocation rules and their impact on the propensity to trade internationally focusing on the scenarios with enforcement and recognition after a judicial review. Subsequently, we compare both rules as for their ability to induce bilateral contractual compliance.

1. The British rule

Reformulating condition (7) allows us to isolate the transaction costs and to show their impact on bilateral contractual compliance. Condition (7) consists of three parts, which we analyze one by one. As for the first part, referring to opportunistic suits, consider

$$(7a) \quad w_i \cdot w_{ij} (Y+C_i) < C_i \Leftrightarrow w_i \cdot w_{ij} \cdot Y < (1 - w_i \cdot w_{ij}) \cdot C_i$$

The left-hand side of the second expression denotes the expected value of a trial and the right-hand side the expected cost. Inequality (7a) is equivalent to

$$(7b) \quad Y < \frac{1 - w_i \cdot w_{ij}}{w_i \cdot w_{ij}} \cdot C_i =: \overline{Y}_A$$

The right-hand side of inequality (7b) is the threshold value which governs A's decision of whether or not to pursue an opportunistic suit. If the amount at stake, Y , falls short of this threshold, then A is not motivated to sue opportunistically. This threshold depends on parameters determined by the expected transaction costs of international trade from A's point of view, if he deliberates behaving opportunistically. The expected transaction costs appear in the numerator of the threshold value: the higher $(1 - w_i \cdot w_{ij}) \cdot C_i$, the higher the threshold value \overline{Y}_A .

We can take the value of $w_i \cdot w_{ij}$ as an indicator of B's risk to be sued opportunistically. A higher $w_i \cdot w_{ij}$ leads to a lower threshold value. Note that cheating on the contract is a better option even if A is motivated to bring a legitimate suit. The terms $w_i \cdot w_{ij} \cdot (Z - 2Y - C_i)$ and $r_i \cdot r_{ij} \cdot (Z - Y - C_i)$ represent B's payoffs if A wins an opportunistic suit and a legitimate suit, respectively. Since $w_i \cdot w_{ij} \cdot (Z - 2Y - C_i) < r_i \cdot r_{ij} \cdot (Z - Y - C_i)$, B would be better off risking a legitimate suit. However, since $X > w_i \cdot w_{ij} \cdot (Z - 2Y - C_i)$, B will never enter into a contract.

A is motivated to sue legitimately if

$$(7c) \quad (1 - r_i \cdot r_{ij}) \cdot C_i < r_i \cdot r_{ij} \cdot Y$$

The left-hand side of this expression denotes the expected cost of a trial and the right-hand side its value. Inequality (7c) is equivalent to

$$(7d) \quad Y > \frac{1 - r_i \cdot r_{ij}}{r_i \cdot r_{ij}} \cdot C_i =: \overline{Y}_A$$

The right-hand side of inequality (7d) is the threshold value which governs A's decision situation as for a legitimate suit. If the amount at stake, Y , exceeds this threshold, then A is motivated to file a suit. This threshold depends on parameters determined by the expected transaction costs of international trade from A's point of view. The expected

transaction costs appear in the numerator of the threshold value: the higher $(1 - r_i \cdot r_{ij})C_i$, the higher the threshold value \bar{Y}_A .

As for B's incentive to honor the contract, consider the following part of condition (7)

$$(7e) \quad r_i \cdot r_{ij} > Y/(Y + C_i) \Leftrightarrow r_i \cdot r_{ij} \cdot C_i > (1 - r_i \cdot r_{ij})Y$$

The left-hand side of the second expression denotes the expected cost of cheating on the contract and the right-hand side its expected value. Inequality (7e) is equivalent to

$$(7f) \quad Y < \frac{r_i \cdot r_{ij}}{1 - r_i \cdot r_{ij}} \cdot C_i =: \bar{Y}_B$$

The right-hand side of inequality (7f) is a threshold value which determines whether or not B honors the contract. If the amount at stake, Y , exceeds this value, than B is not motivated to do so. B's threshold value depends on parameters determining the expected costs of cheating. These costs are $r_i \cdot r_{ij} \cdot C_i$. The lower $r_i \cdot r_{ij} \cdot C_i$, the lower are the expected cheating costs, and the higher is the threshold value \bar{Y}_B . Note that A's expected transaction costs are inversely related to B's expected cheating costs: the lower B's expected cheating costs, the higher are A's expected transaction costs (and vice versa). Since \bar{Y}_A is decreasing and \bar{Y}_B is increasing in $r_i \cdot r_{ij}$, a higher value of $r_i \cdot r_{ij}$ makes it more likely that condition (7f) will be fulfilled. Lower Y and higher C_i have an ambiguous effect. On the one hand, A's incentives to sue may suffer because Y falling short of the threshold value in (7f) is more likely. On the other hand B's incentives to honor the contract are strengthened.

Interpreting Y as the terms of trade allows for an interesting conclusion: for international trade to occur, two constraints must be met. First, the terms of trade have to fulfill the "Pareto constraint" $Y \in [X; Z]$, i. e., if $Y < X$ or $Y > Z$ it would not be a Pareto improvement to carry out the transaction. Additionally, the "contractual compliance constraint" must hold true, i. e., $\bar{Y}_A < Y < \min\{\bar{Y}_A, \bar{Y}_B\}$.

2. The American rule

Reformulating condition (15) allows us to isolate the transaction costs and to show their impact on bilateral contractual compliance, i. e., the propensity to international trade

internationally. As with the British rule, we analyze the three parts of condition (15) separately.

A is deterred to bring an opportunistic case if

$$(15a) \quad w_i \cdot w_{ij} < P_i/Y \Leftrightarrow w_i \cdot w_{ij} \cdot Y < P_i$$

The left-hand side of the second expression denotes the expected value, the right-hand side the cost of a trial. Inequality (15a) is equivalent to

$$(15b) \quad Y < \frac{P_i}{w_i \cdot w_{ij}} =: \tilde{Y}_A$$

The right-hand side of inequality (15b) is the threshold value which governs A's decision of whether or not to file an opportunistic suit. This threshold must exceed the value at stake, Y , in order to deter A from filing an opportunistic suit. The numerator P_i represents A's transaction costs. The composite probability $w_i \cdot w_{ij}$ can be interpreted as B's risk to be sued opportunistically. The higher this risk and the lower P_i , the lower is the likelihood that B honors the contract. Again it can be shown that, for B, cheating on the contract is a better option than honoring it even if A is motivated to file a legitimate suit. The terms $w_i \cdot w_{ij} (Z - 2Y - D_i)$ and $r_i \cdot r_{ij} (Z - Y - D_i)$ represent B's payoffs if A wins an opportunistic and a legitimate suit, respectively. Since $w_i \cdot w_{ij} (Z - 2Y - D_i) < r_i \cdot r_{ij} (Z - 2Y - D_i)$, B is better off risking a legitimate suit. However, as with the British rule B will never enter a contract since $X > w_i \cdot w_{ij} (Z - 2Y - D_i)$.

A brings a legitimate action if

$$(15c) \quad r_i \cdot r_{ij} > P_i/Y \Leftrightarrow r_i \cdot r_{ij} \cdot Y > P_i$$

The left-hand side of the second expression denotes the expected value, the right-hand side the cost of a trial. Inequality (15c) is equivalent to

$$(15d) \quad Y > \frac{P_i}{r_i \cdot r_{ij}} =: \hat{Y}_A$$

The right-hand side of inequality (15d) is the threshold value which governs A's decision of whether or not to file a legitimate suit. If the amount at stake, Y , exceeds this threshold, then A is motivated to file a suit. The numerator P_i represents A's transaction costs.

The higher P_i and the lower the composite probability $r_i \cdot r_{ij}$, the higher is the threshold value (and vice versa).

B honors the contract if

$$(15e) \quad r_i \cdot r_{ij} > (Y - D_i)/Y \Leftrightarrow D_i > (1 - r_i \cdot r_{ij}) \cdot Y$$

The left-hand side of the second expression denotes the defendant's cost of cheating – given a trial –, the right-hand side the expected value. Inequality (15e) is equivalent to

$$(15f) \quad Y < \frac{D_i}{1 - r_i \cdot r_{ij}} =: \tilde{Y}_B$$

The right-hand side of inequality (15f) is a threshold value which determines whether or not B honors the contract. If the amount at stake, Y , exceeds this value, B is not motivated to do so. B's threshold value depends on parameter D_i which represents B's expected cheating costs. The higher D_i and $r_i \cdot r_{ij}$, the higher is the threshold value (and vice versa). With higher D_i and $r_i \cdot r_{ij}$, B is more likely to honor the contract (and vice versa).

Interpreting Y as the terms of trade, the conclusion derived for the British rule is also valid for the American rule: For international trade to occur the terms of trade have to meet the "Pareto constraint" as well as the "contractual compliance constraint".

3. Which rule is better?

We are now in a position to compare the British and American rules with regard to their ability to induce bilateral contractual compliance.

Recall that for both rules the value at stake must exceed the threshold values in order to motivate A to bring a legitimate suit (see (7d) and (15d)), to fall short of the respective values in order to deter opportunistic suits (see (7b) and (15b)) as well as to induce B to honor the contract (see (7f) and (15f)). Since the value at stake is assumed to be given and identical for both rules, the following propositions are straightforward.

Incentive to sue legitimately:

Proposition 5: *Given identical values at stake Y and threshold values \hat{Y}_A and \bar{Y}_A , respectively, for the American and British rule of cost allocation, both rules motivate the plaintiff to a legitimate suit iff*

$$(17a) \quad Y > \bar{Y}_A \geq \hat{Y}_A \quad \text{or} \quad Y > \hat{Y}_A > \bar{Y}_A ;$$

only one rule motivates iff

$$(17b) \bar{Y}_A \geq Y > \hat{Y}_A \text{ (American rule) or } \hat{Y}_A \geq Y > \bar{Y}_A \text{ (British rule);}$$

neither rule motivates iff

$$(17c) \bar{Y}_A \geq \hat{Y}_A > Y \text{ or } \hat{Y}_A > \bar{Y}_A > Y.$$

As is implied by the formulas for the threshold values, better detection skill of the judges in the enforcement chain, i. e. higher $r_i \cdot r_{ij}$, would improve the performance of both rules. The reason is that the expected costs of a trial decrease. In addition, an increase in P_i favors the British rule, since, with $C_i = P_i + D_i$, the expected costs of a legitimate trial under the American rule increase relative to those under the British rule (see (7c) and (15c)). The opposite holds for a decrease in P_i .

Incentive to abstain from opportunistic suits:

Proposition 6: Given identical values at stake Y and threshold values \tilde{Y}_A and \bar{Y}_A , respectively, for the American und British rule of cost allocation, both rules deter opportunistic suits iff

$$(18a) Y < \bar{Y}_A \leq \tilde{Y}_A \text{ or } Y < \tilde{Y}_A < \bar{Y}_A;$$

only one rule deters iff

$$(18b) \bar{Y}_A < Y < \tilde{Y}_A \text{ (American rule) or } \tilde{Y}_A < Y < \bar{Y}_A \text{ (British rule)}$$

neither rule deters iff

$$(18c) \bar{Y}_A \leq \tilde{Y}_A < Y \text{ or } \tilde{Y}_A < \bar{Y}_A < Y.$$

As is implied by the formulas for the threshold values, better detection skill of the judges in the enforcement chain, i. e. lower $w_i \cdot w_{ij}$, improves the performance of both rules. The reason is that the expected costs of a trial increase. In contrast to the incentive to sue legitimately, with $C_i = P_i + D_i$, a rising of P_i now favors the American rule and vice versa (see (7a) and (15a)).

Incentive to honor the contract:

Proposition 7: Given identical values at stake Y and threshold values \tilde{Y}_B and \bar{Y}_B , respectively, for the American und British rule of cost allocation, both rules create the incentive to honor a contract iff

$$(19a) Y < \bar{Y}_B \leq \tilde{Y}_B \text{ or } Y < \tilde{Y}_B < \bar{Y}_B;$$

only one rule creates the incentive to honor a contract iff

$$(19b) \bar{Y}_B \leq Y < \tilde{Y}_B \text{ (American rule) or } \tilde{Y}_B \leq Y < \bar{Y}_B \text{ (British rule);}$$

neither rule creates the incentive to honor a contract iff

$$(19c) \bar{Y}_B \leq \tilde{Y}_B < Y \text{ and } \tilde{Y}_B < \bar{Y}_B < Y.$$

As with the incentives to bring a legitimate case, the threshold values imply that better detection skill of the judges in the enforcement chain, i. e. higher $r_i \cdot r_{ij}$, improves the performance of both rules. The reason is that the expected value of cheating on the contract by the defendant decreases. An increase in D_i favors the American rule, since, with $C_i = P_i + D_i$, the defendant's expected costs of a trial under the American rule increase relative to those under the British rule (see (7c) and (15c)). The opposite holds for a decrease in D_i .

[Table 2 about here]

Table 2 presents a summary of our results. Columns “both”, “one” and “none” indicate, for each rule as listed in the first column, the conditions regarding their performance.

As it turns out, the model does not facilitate finding a definitive answer to the question of which rule is the better one. This is due to the fact that the threshold formulas defined in sections III.1 and III.2 are determined by two factors: a cost factor and a skill factor. The skill factor of the American rule exceeds that of the British rule for all sub-conditions, which on one hand favors the American rule with regard to the deterrence of opportunistic suits and the incentive to honor contracts, and puts it on a disadvantage as for the incentive to sue legitimately. However, depending on their magnitudes, the cost factors P_i , D_i and C_i can lead to a reversal of this ranking. The agnostic result of our analysis coincides with the view that the vast theoretical modelling literature on litigation cost allocation rules has reached; there is no consensus regarding their effects on primary behavior, in our paper international trade, and efficiency (Eisenberg and Miller 2010; Katz 1999). We need empirical data in order to figure out which rule is actually the better rule.

4. The border effect

According to a large body of empirical literature, the mere presence of national borders can sharply reduce trade volumes between countries. Several explanations have been offered in the literature: regulatory asymmetries across countries, technical and informational barriers to trade, business and social networks (intra-national border effect), vertical integration, multistage production, contract incompleteness and imperfect enforcement of contracts due to weak institutions and widespread corruption.¹⁰ Our explanation of the home bias in trade is

¹⁰ For a short overview and assessment see Turrini and Ypersele 2010.

complementary to that offered by Turrini and Ypersele (2010): the heterogeneity of judicial systems or, as we would call it, the diversity and territoriality of law (Schmidtchen and Schmidt-Trenz 1990, Schmidt-Trenz and Schmidtchen 1991, Schmidtchen and Schmidt-Trenz 2006). In our approach – taking into account the effects of different rules of litigation cost allocation - it is the violation of the contractual compliance constraint which is at the root of the home bias in trade.

Consider our model. Recall that it starts with the contract stage. At the root of the game tree A has two actions: $\{in, out\}$. Action *in* means conducting an international transaction; action *out* can be interpreted as limiting oneself to a national transaction (among citizens of state *a*). From the payoff structure of the game it follows that A prefers the national transaction to the international one when the contractual compliance constraint is violated – a clear example of the home bias in trade.

5. Empirical evidence

Empirical evidence on the performance of litigation cost allocation rules is relatively sparse (Eisenberg and Miller 2010, p.14). A careful review of the literature leads the authors to conclude that academic research produced few clear-cut results “other than the (obvious) conclusion that the English Rule is relatively more risky than the American Rule, and the (somewhat less obvious) proposition that the English Rule will stimulate greater expenditures on litigation” (Eisenberg and Miller 2010, p. 16). To fill the void, the authors adopt an ingenious new approach “by examining what choices sophisticated parties *actually make* with respect to the allocation of legal fees in disputes over contracts” (Eisenberg and Miller 2010: 16). The underlying premise is very convincing: “(A)t the time of entering into a contract sophisticated parties have incentives to adopt terms that maximize joint value... Thus, if such parties are well-informed and other barriers to contracting are not present, we can expect that the decisions actually made will tend to reflect the efficient ex ante solution to contracting problems. This principle holds true for contractual provisions for dispute resolution” (Eisenberg and Miller 2010, p. 3). Indeed, if the international procedural law does not prescribe the (legal) domicile, then the contracting parties can specify the court of law where any disputes arising under the contract are to be decided (prorogation of jurisdiction). Forming expectations as for the winning and the enforcement probabilities as well as the litigation costs, rational parties will determine the terms of trade, i.e. *Y*, the (legal) domicile as

well as the litigation cost allocation in a way that bilateral contractual compliance results, i.e., joint value is maximized.

Eisenberg and Miller examined 2,350 material contracts contained in Form 8-K “current report” filings with the SEC in 2002 and coded them for a variety of contract terms. From the contracts containing explicit provisions on attorney compensation about two-fifth opted for the English rule, about two-fifth of the contracts either did nothing or specified the American rule and the remaining contracts opted out of the American rule and adopted some modified form of loser-pays arrangement (Eisenberg and Miller 2010, pp. 5, 23). In most of the twelve contracting areas analyzed, neither the American nor the British rule dominates (Eisenberg and Miller 2010, pp. 24-25).

What is of particular relevance for our paper is a test of the hypothesis that fee-shifting provisions will be more frequently observed in international contracts (Eisenberg and Miller 2010: 18). As it turns out this hypothesis should be rejected: “The results are surprising in that there is little systematic evidence that contracts with a non-U.S. party tend to opt out of the American Rule more than contracts with domestic parties” (Eisenberg and Miller 2010, p. 25). In the sample of contracts that chose either the American or the British rule the former rule was with 55.8% compared to 52.4% more prominent in international contracts than in domestic ones (Eisenberg and Miller 2010, p. 25; the difference is not statistically significant). Finally, focusing on comparable contracts in the domestic and the international arena, “no striking difference emerged in the rate at which they specified the American or English Rules” (Eisenberg and Miller 2010, p. 26).

The Eisenberg and Miller-study suggests that the British rule is presumably the efficient rule in the one-shot game analyzed in our paper. This one-shot game is governed by a spot-contract or one-off contract. Often interactions do not take place once, but repeatedly: traders play iterated games, governed by relational contracts. Eisenberg and Miller confirmed the hypothesis that “*(l)oser-pays rules will be less frequently observed in relational contracts than in one-off contracts*” (Eisenberg and Miller 2010, p. 19): Whereas in non-relational contracts the English rule dominates (43.8% vs. 35.9%), the opposite result holds for relational contracts: 45.8% chose the American and only 12.4% the British rule (Eisenberg and Miller 2010, p. 29).

Finally, industry-specific patterns do not have a significant influence on the chosen fee clause type (Eisenberg and Miller 2010, p. 34), and results of regressions are consistent with the non-regression or bivariate results (Eisenberg and Miller 2010, p. 34-37).

Overall, despite of a number of potential caveats mentioned by Eisenberg and Miller (2010, p. 40-43) their results seem to support our view that no litigation cost allocation rule dominates in all contexts - at least if attorney fees are supposed to drive the litigation costs in our model. We would subscribe to the conclusion that “(t)he quest for a single, most efficient fee-shifting regime may be futile in light of the evidence suggested by sophisticated parties’ practices” (Eisenberg and Miller 2010, p. 5).

Recall that our threshold formulas defined in sections III.1 and III.2 are determined by two factors: a cost factor and a skill factor. Under the assumption that an increase in formalities of legal procedures as well as the duration of trials is likely to reduce the risk of error, one may use information from the World Bank’s Doing Business Report (Doing Business Data; Historical Data Sets and Trends Data) for a cautious comparison of the American and British rules.¹¹ Regarding the procedures (number of steps) the Data for 2010 and 2004 are as follows, with the first figure referring to 2010 (The World Bank 2010): United States 32 (33), France 29 (30), United Kingdom 28 (30) and Germany 30 (30); regarding time (days) the figures are as follows: United States 300 (300), France 331 (331), United Kingdom 399 (404) and Germany 394 (403). These figures do not suggest the existence of a big difference regarding judicial competencies between jurisdictions with a loser-pays rule (United Kingdom, Germany) and countries applying the American rule or some form of it, like the United States and France.

By a simple rearrangement of terms in the formulas (7b), (7d), (7f) and (15b), (15d), (15f) we can isolate the cost factor as a percentage of the claim, i.e. Y . The World Bank reported the following figures for this cost factor: United States 14.4% (14.4%), France 17.4% (17.4%), United Kingdom 23.4% (21.9%) and Germany 14.4% (14.4%). Again these figures do not seem to indicate a systematic difference between the jurisdictions applying different litigation cost allocation rules.¹² However, this conclusion might be misleading in the sense that the reported figures refer to the sum of the costs of the plaintiff and the defendant. For a comparison of the litigation cost allocation rules we must split up these cost figures accordingly. In the absence of further information a 50:50 split seems reasonable. Thus, the cost factor of the American rule (P_i or D_i) would be generally less than that of the British rule, i.e. C_i . Unless the total litigation costs associated with the American rule significantly exceed

¹¹ Of course, one might as well hold the view that more formalism is associated with higher expected duration of judicial proceedings, lower perceived consistency, honesty and fairness, and that formalism serves as a useful indicator of the inefficiency of a legal system (Djankov et al. 2003, p. 139). Djankov et al. (2003) and Balas et al. (2009) find that procedural formalism is significantly higher in civil law countries than in common law countries in 1950 and widened by 2000.

¹² Note that there are cost drivers which have nothing to do with the litigation cost allocation rule; regarding the United Kingdom see Judiciary of England and Wales (2009).

those of the British rule our model would suggest that the British rule beats the American rule regarding the deterrence of opportunistic suits and the incentive to honor contracts, whereas the American rule creates better incentives for filing legitimate suits.

IV. Constitutional uncertainty and the border effect

Our model takes into account the uncertainty created by imperfect but positive judicial detection skill of judges. Apart from this type of uncertainty, the diversity and territoriality of law create another kind of uncertainty which has been called constitutional uncertainty (Schmidtchen and Schmidt-Trenz 2006). Constitutional uncertainty should not be considered as being another kind of risk but rather as an instance of true or Knightian uncertainty. Due to the complexities of international procedural law as well as the rules of conflict of laws it is far from clear which court has jurisdiction, which law applies and which are the exact values of r_i , r_{ij} , w_i , w_{ij} , P_i , D_i or C_i . This kind of uncertainty increases the transactions costs of international trade dramatically and contributes to the home bias in trade (see Rühl 2010). In addition, the determination of the value at stake might differ as might be the case for the breach remedies (expectation damages, reliance damages or restitution damages – whatever the court awards). Even if the parties to the contract write breach remedies into their contract, courts do not always enforce what players write into their contracts. They often impose transfers on the basis of certain legal principles.

Taking the diversity and territoriality of law and enforcement as given, one might conclude that international trade, at least when activities are asynchronous, as they usually are, does not come about at all. No international trader can be sure to get a return for that which he has given up in advance. That raises a question which might somewhat perplex believers in the existence of a home bias in trade: how is it that private international trade does take place in spite of these unfavourable conditions?

The answer is that rational parties will not rely on court ordering alone to overcome contractual hazards in international trade but will additionally apply means of private ordering. Thus, mitigating the home bias in trade.¹³

Private ordering refers to self-help, conventions and agreements on rules for settling disputes that could otherwise be brought to court (see Rühl 2010; Schmidt-Trenz and

¹³According to the view presented here, constitutional uncertainty can be traced back to problems in rendering and executing judgments – two problems that do not arise in this form in the domestic economy. Also the so-called sovereignty risk, for instance in the form of risks of expropriation and repudiation (see Schnitzer [2002]; general Herring [1984]), is a part of constitutional uncertainty.

Schmidtchen 1991; Schmidtchen and Schmidt-Trenz 2006) as well as to making strategic moves credible (see ch. 6 in Dixit and Nalebuff 1991).

As for the firstly mentioned aspect of private ordering the evolution of the Law Merchant or *Lex Mercatoria* as a kind of so-called “spontaneously created law” and its relation with international arbitral jurisdiction, the multinational firm (foreign subsidiaries), joint ventures, repeated transactions, the Incoterms and the information services provided by the International Chamber of Commerce (ICC) may serve as evidence (see Schmidtchen and Schmidt-Trenz 2006). Regarding credible commitments an example might suffice for illustration. Consider our well known standard transaction between firm A and firm B. If, for example, rules of conflict of laws or international procedural law in country *a* as well as in country *b* require that action can only be brought in the other state, it is impossible to meet condition (7) or (15). Or consider the case where the judge in *b-land* has got a strong domestic bias and foreign judgments are subject to a review. Neither the right to bring a case in *b-land* nor to sue in *a-land* with subsequent review of the judgement in *b-land* can induce bilateral contractual. However a firm located in *b-land* can reduce transaction costs and ensure bilateral contractual compliance by locating assets in *a-land*. A sufficient amount of an investment and a fair judge in *a-land* would suffice to enable enforcement of an *a-judgement* in country *a*. Such an investment would be a kind of a hostage or a credible commitment to honour the contract.

Although the distinction between “private ordering” on the one hand and “legal centralism” or “court ordering” on the other is crucial, in reality any order is usually based on a mixture (see Rühl 2010).

The interplay of both kinds of governance structures for international transactions might be an important topic for future research. In particular, it might be instructive to examine whether the introduction of settlement changes the paper’s results about the relative effectiveness of the different cost allocation rules.

V. Discussion

In this section we discuss four issues: the focus of the model, the simplifying assumptions, the interdependence of conditional probabilities and restrictions due to international procedural law.

Focus of the model. The objective of this paper is to analyze the effect of different litigation cost allocation rules and the detection skill of judges on the incentives to honor contracts in international trade (bilateral contractual compliance). One might wonder whether

the model does actually consider the elements that are most relevant to the realm of international trade and whether the findings are really about the incentives to trade internationally rather than the incentives to trade in general. However, a look at the three key elements making a difference between the enforcement of contractual claims from international and national transactions and which are at the heart of the paper reveals that the paper is concerned with the key elements pertinent to international trade: Firstly, a plaintiff can file suit in different jurisdictions: the domicile of the plaintiff, the domicile of the defendant or a third country. Secondly, a plaintiff can try to enforce a judgment in whatever country a defendant holds assets. Thirdly, in many cases a foreign judgment has to be recognized before it can be enforced, which is not a matter of course. The trick used in the paper is simply to allow enforcement probabilities r_i and w_i different than one. Note that the model with automatic recognition and enforcement does not consider a national transaction in a strict sense, since, in contrast to suits regarding national transactions, suits can be filed in foreign countries.

Simplifying assumptions. We purposefully restricted our attention to a model with perfect and complete information and applied a rather stylized litigation model. This allowed us to highlight the basic structure of the problem of bilateral contractual compliance. This is also the reason why we made a lot of other simplifying assumptions. The costs of enforcing a judgment in a foreign country were assumed to be zero and the terms of trade are taken as the value at stake. It is straightforward to see that positive enforcement costs reduce the transaction costs of doing international business since opportunistic suits become less attractive. On the other hand, the incentive to sue legitimately suffers. A value at stake below the terms of trade does not only reduce the incentive to sue opportunistically and to cheat on the contract but it also damages the incentive to sue legitimately. We did not analyze the contracting process in which the terms of trade as well as the specificity of the contracts (degree of completeness) are determined. Whether the goods to be exchanged are standardized goods, goods which are traded in thick possibly organized markets, or specific goods, goods which are tailor-made for the individual transaction, clearly matters regarding both aspects (Nunn 2007). Be that as it may, the Pareto constraint as well as the contractual compliance constraint must be met in order for international trade to come about. Finally, we modeled judges as outside players represented by two probability distributions. The reason is that a model with judges as true players in addition to the two other players would have been analytically much more difficult to manage.

Interdependence of conditional probabilities? The paper assumes that the conditional probabilities that the plaintiff prevails in the litigation stage given a frivolous and meritorious suit (w_i and r_i , respectively) are independent. An alternative assumption is that both probabilities are dependent on judicial skill or judicial bias. Thus, a skillful court that is likely to find for the plaintiff if the plaintiff's suit is meritorious, is likely to find for the defendant if the plaintiff's suit is frivolous. On the other hand, a biased court that is likely to find for the plaintiff if the plaintiff's suit is frivolous is also (or even more) likely to find for the plaintiff if the plaintiff's suit is meritorious. A similar argument applies to the enforcement stage. However, note that our concept of judicial detection skill allows for all types of courts, since each type can be represented by a specific combination of conditional probabilities. What matters is that the parties to a transaction have beliefs according to the pertinent probabilities.

Similar to the previous point, the paper assumes that the conditional probabilities that the plaintiff prevails in the litigation stage and in the enforcement stage are independent. An alternative assumption is that these probabilities are dependent on either judicial skill or judicial bias. For example, if courts are competent and unbiased and the plaintiff rightfully prevails in the litigation stage, then the plaintiff is also likely to prevail in the enforcement stage. On the other hand, one might assume that, because of judicial bias, courts always prefer domestic litigants. Again, note that our model allows for all kinds of interdependence represented by a specific combination of conditional probabilities for the litigation and enforcement stage.

Restrictions due to international procedural law. All propositions in this paper have been derived under the assumption that the plaintiff can choose where to litigate and where to try to get a judgment recognized and enforced. However, an entirely free choice of where to litigate and where to enforce a judgment is often ruled out by the international procedural law.¹⁴ Therefore it is possible that no court accepts jurisdiction or that several courts claim jurisdiction. Thus, the option sets as for places to litigate as well as regarding places for enforcement of judgments are often rather limited. This fact reduces the likelihood that the condition for bilateral contractual compliance can be fulfilled.

VI. Conclusion

The paper considers the effects of litigation cost allocation rules, judicial detection skill (errors), and the mode of enforcement of foreign judgments on the incentive to trade

¹⁴ The European Union is an exception; see Council Regulation 44/2001.

internationally. Distinguishing between two different international procedural law regimes – one, in which foreign court judgements are automatically recognized and enforced and one, in which recognition and enforcement requires a separate judicial decision by a foreign judge – the paper finds necessary and sufficient conditions for bilateral contractual compliance, and to enter a contract in the first place, both for the British and the American rules of cost allocation. Theory and empirical evidence suggest that the rule which performs better depends on the specification of the parameters of the international legal order and the peculiarities of the transaction. Although the analysis was concerned with an international trade relationship, we feel that the basic results of the analysis also hold for other kinds of international transactions governed by contracts. Properly extended and interpreted, the new approach could even be applied to matters of regulation and other areas of the law.

With its focus on the conditions for bilateral contractual compliance the paper also sheds a new light on the “border effect puzzle”. This is not to say that the results derived in this paper should be seen as substitutes for those originating from the traditional theory; they are rather complements. In our model the border effect or home bias is due to a violation of the contractual compliance constraint. Three types of transaction costs play a role in this context: costs of opportunistic suits (litigation opportunism), costs of legitimate suits and costs of cheating (contractual opportunism). Whereas rising transaction costs for litigation and contractual opportunism are to be welcomed, decreasing the costs of legitimate suits is better for bilateral contractual compliance. Thus, the widely held view that a general reduction of transaction costs facilitates international trade has to be questioned.

This paper has applied a game-theoretical analysis of important aspects of international procedural law and set up a new fundament upon which an economic theory of international procedural law can be erected. However, the new approach should not be taken as a substitute for a careful reading of complex legal material. To the contrary, the parameters of the international legal order have to be derived from the contents of the legal rules and empirical evidence as for judicial decision making. In this sense, the new approach opens up a new perspective for the interpretation of the law (see also Rühl 2010):

Firstly, it presents a framework useful for considering international procedural law questions from an ex ante point of view. Most of the literature on international procedural law as well as on conflicts of law in general is only concerned with after-the-conflict issues (see Rühl 2010). It does not discuss the link to the underlying behaviour. From an economic point of view, however, what happens *after* a breach of contract is only relevant to the extent to which its expectation influences the incentives for bilateral contractual compliance. What matters is the ex-ante decision whether or not parties engage in a transaction and fulfil their contractual obligations without pursuing illegitimate lawsuits.

Secondly, the approach presented in this paper allows answering both the question of how changes in legal rules influence behavior and whether this influence fosters efficiency.

Although not derived from the model some conjectures regarding the policy implications seem in order. From an efficiency point of view, rules of international procedural law and conflict of laws should be evaluated with respect to how they facilitate international transactions. Using bilateral contractual compliance as a proxy for efficiency, those rules should be formulated such that they increase the likelihood of bilateral contractual compliance. Consequently, one would recommend that the parties to an international transaction should be permitted to choose the court of law where any disputes arising under the contract are to be decided. In view of the expected winning and the enforcement probabilities as well as the litigation costs and other characteristics of procedural law, rational parties will determine the terms of trade and the (legal) domicile in a way that bilateral contractual compliance results. However, there is a caveat: freedom to choose maximizes the private welfare of the parties involved; however, private welfare does not necessarily coincide with social welfare in the presence of third-party effects. If third-party effects exist, they should be properly taken into account through restrictions on the option set available to the parties to the transaction.

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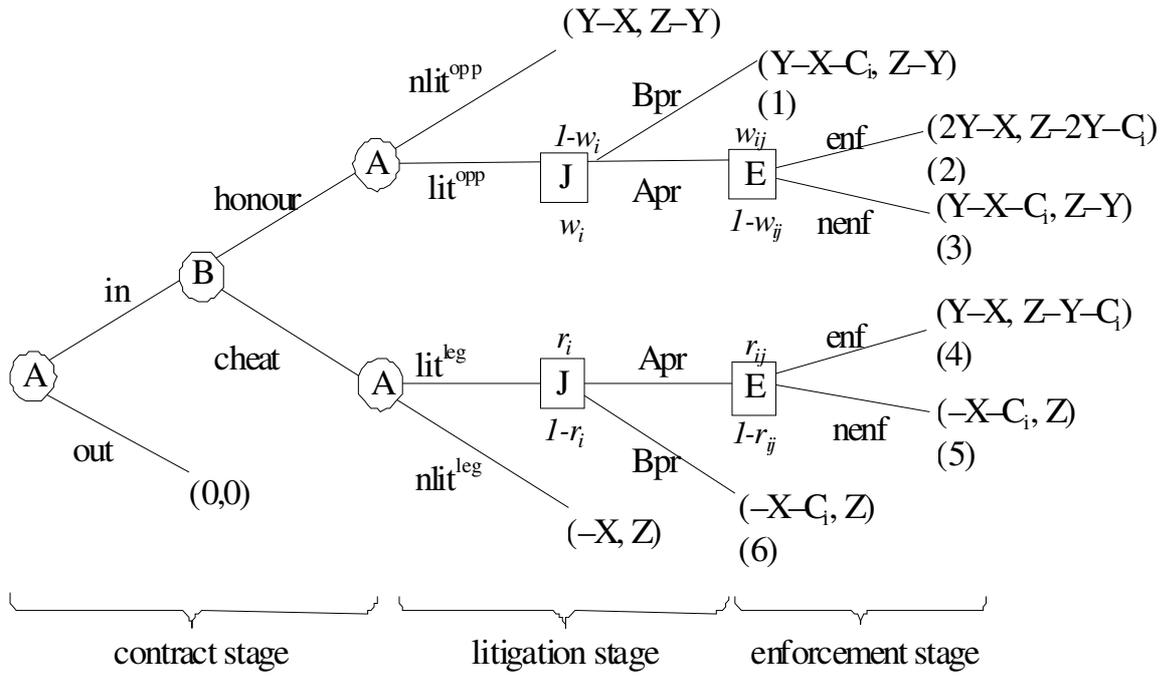


Fig.1: The international trade game

Endnode	British rule		American rule	
	A	B	A	B
1	$Y-X-C_i$	$Z-Y$	$Y-X-P_i$	$Z-Y-D_i$
2	$2Y-X$	$Z-2Y-C_i$	$2Y-X-P_i$	$Z-Y-D_i$
3	$Y-X-C_i$	$Z-Y$	$Y-X-P_i$	$Z-Y-D_i$
4	$Y-X$	$Z-Y-C_i$	$Y-X-P_i$	$Z-Y-D_i$
5	$-X-C_i$	Z	$-X-P_i$	$Z-D_i$
6	$-X-C_i$	Z	$-X-P_i$	$Z-D_i$

Table 1: Payoffs British and American rule

Rules	Both	One	None
<i>Motivation legitimate suit</i>			
American	$Y > \bar{Y}_A \geq \hat{Y}_A$	$\bar{Y}_A \geq Y > \hat{Y}_A$	$\bar{Y}_A \geq \hat{Y}_A > Y$
British	$Y > \hat{Y}_A \geq \bar{Y}_A$	$\hat{Y}_A \geq Y > \bar{Y}_A$	$\hat{Y}_A \geq \bar{Y}_A > Y$
<i>Deterrence opportunistic suit</i>			
American	$Y < \bar{\bar{Y}}_A \leq \tilde{Y}_A$	$\bar{\bar{Y}}_A \leq Y < \tilde{Y}_A$	$\bar{\bar{Y}}_A \leq \tilde{Y}_A < Y$
British	$Y < \tilde{Y}_A \leq \bar{\bar{Y}}_A$	$\tilde{Y}_A \leq Y < \bar{\bar{Y}}_A$	$\tilde{Y}_A \leq \bar{\bar{Y}}_A < Y$
<i>Incentive honor contract</i>			
American	$Y < \bar{Y}_B \leq \tilde{Y}_B$	$\bar{Y}_B \leq Y < \tilde{Y}_B$	$\bar{Y}_B \leq \tilde{Y}_B < Y$
British	$Y < \tilde{Y}_B \leq \bar{Y}_B$	$\tilde{Y}_B \leq Y < \bar{Y}_B$	$\tilde{Y}_B \leq \bar{Y}_B < Y$

Table 2: Performance of the rules

