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Conference Paper

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Beiträge zur Jahrestagung des Vereins für Socialpolitik 2017: Alternative Geld- und Finanzarchitekturen - Session: Foreign Direct Investment I, No. B14-V3

Provided in Cooperation with:

Verein für Socialpolitik / German Economic Association

Suggested Citation: Janeba, Eckhard (2017) : Regulatory Chill and the Effect of Investor State Dispute Settlements, Beiträge zur Jahrestagung des Vereins für Socialpolitik 2017: Alternative Geld- und Finanzarchitekturen - Session: Foreign Direct Investment I, No. B14-V3, ZBW - Deutsche Zentralbibliothek für Wirtschaftswissenschaften, Leibniz-Informationszentrum Wirtschaft, Kiel, Hamburg

This Version is available at:

<https://hdl.handle.net/10419/168255>

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Regulatory Chill and the Effect of Investor State Dispute Settlements

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November 4, 2016

Abstract

Legal conflicts between multinational firms and host governments are often decided by international arbitration panels - as opposed to courts in the host country - due to provisions in international investment agreements known as Investor State Dispute Settlements (ISDS). Critics fear that ISDS panels favor multinational firms, and thus make governments reluctant to adopt appropriate policies (regulatory chill). In this paper I develop an economic model to define regulatory chill and to analyze the effects of ISDS. Regulatory chill occurs when losses from regulatory mismatch are intermediate rather than very high. Moreover, if national courts are more likely to decide in favor of the host government than an international court, a unilateral shift to ISDS by one country is welfare worsening for the country. The net welfare change is more favorable, and sometimes - but not always - positive, when i) (symmetric) countries switch together to an ISDS based system, and when ii) foreign investment responds elastically to profit conditions.

JEL Classification: F23, F53, H25

Keywords: Investor State Dispute Settlement, TTIP, Regulatory chill, International Investment Agreement, Foreign Direct Investment

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1 Introduction

“Except in rare circumstances, non-discriminatory regulatory actions by a Party that are designed to protect legitimate public welfare objectives, such as public health, safety and the environment, do not constitute indirect expropriations.” Bilateral Investment Treaty Columbia/USA

Legal conflicts between multinational firms and host governments about policy changes are widespread. Increasingly, these conflicts are decided through international arbitration by a panel of expert lawyers, known as Investor State Dispute Settlement (ISDS), instead of courts in the host country. International arbitration is agreed upon in international investment agreements, of which by the end of 2014 there were 3268 in place. In recent years between 40 and 60 ISDS cases have been decided annually, some of which involve substantial amounts of money (UNCTAD, 2015a,b).

Many conflicts center around the issue of indirect expropriation, which refers to government actions that have a substantial adverse impact on a firm without nationalizing a firm outright. It is difficult to define precisely what indirect expropriation means in practice, in particular since the law shall not prevent a government from rightful regulation. The conceptual vagueness is shown exemplary in the bilateral investment treaty between Columbia and the US, as cited above (see, Nikiema (2012) for a detailed description and legal analysis of similar clauses in other treaties). Courts therefore have some leeway in deciding cases brought to them by firms.

Critics of ISDS from the scientific community (e.g., Gerstetter and Meyer-Ohlendorf, 2013; Tienhaara, 2011) or international advocate groups such as *attac* fear that international arbitration panels decide more often than national courts in favor of multinational firms. This is seen as problematic for the host country government not only because the government is required to pay compensation or revert its policy if it loses the case in court, but mostly because it may prevent governments from carrying out legitimate policy changes in the future, a situation known as *regulatory chill*.

This paper provides a formal economic framework for the analysis of regulatory chill in the presence of foreign direct investment (FDI). While recent research has looked into the effects of ISDS, discussed in detail below, to the best of my knowledge there is no formal work on regulatory chill and the explicit modelling of court challenges in the context of FDI. Such a framework is needed to analyze the normative question, which is at the center of this paper: Should national courts or international expert panels decide on legal conflicts between host governments and foreign investors? The question is highly policy

relevant, as negotiators of the Transatlantic Trade and Investment Partnership (TTIP) between the US and the EU consider implementing an ISDS based arbitration panel. The issue appears also in other recent bilateral or regional trade agreements, such as CETA and TTP.

I show that the key parameter in the analysis of regulatory chill is the *loss from regulatory mismatch*, which is defined as the loss in welfare for the host government when an inappropriate regulation is in place, e.g., the loss in welfare if a safety or environmental standard is not invoked. A first insight of the paper holds that the likelihood of regulatory chill (in terms of parameter values) is weakly decreasing in the loss from regulatory mismatch. In the limit, regulatory chill does not happen when the loss is infinitely large, as long as the host country government has a chance of winning in court. The intuition for this result is straightforward and is in the spirit of Becker's (1968) economic analysis of crime, in which the costs and benefits of actions influenced by the legal system drive individual behaviour. Assuming that the filing of a lawsuit by the multinational firm against an unfavorable policy is credible, the host government weighs the expected benefit of having the ideal policy in place, but which will be challenged in court, against an alternative policy which involves the loss from regulatory mismatch with certainty but saves on the cost of litigation. A high loss from regulatory mismatch makes the alternative policy unattractive and therefore the threat of a lawsuit has no deterrence effect.

A paper's main result deals with the normative question: Who should decide on conflicts between multinational firms and host governments?¹ The question assumes that there exists a relevant difference between a national and an international tribunal. I assume that a national court is more likely to decide in favor of the host government than an international (ISDS) panel, because panelists on ISDS tribunals have stronger ties to multinational firms from prior work as counselors for investors than judges on national courts (see Gaukrodger and Gordon (2012)). Alternatively, a reason for the assumption is the advantage of a multinational firm to file a lawsuit under ISDS on top of one in national court, which gives a higher total probability of winning the case even if there is no bias in the decision making of either of the two courts. An example for this strategy is the Swedish energy company Vattenfall, that has filed lawsuits in Germany and under ISDS (ICSID) against the German government's revocation of nuclear power plant licences after the nuclear power incident in Fukushima, asking for compensation in the amount of 3.7 billion Euros.²

¹See Kleinheisterkamp (2014) and Bronckers (2015) for an analysis from a legal scholar's perspective.

²The Economist, The arbitration game, October 11, 2014

Under this assumption, I show that the host government always loses when *unilaterally* delegating the decision power over legal conflicts from a national court to an international, ISDS-based court. The switch becomes more favorable for the host government however - and sometimes but not always advantageous - when (symmetric) countries simultaneously move to an international court (e.g., as part of a bilateral investment treaty or trade agreement like TTIP). A *bilateral* switch is more advantageous than a unilateral one because national welfare includes the profit from own firms engaged in outward FDI. A bilateral switch is advantageous if the losses from regulatory mismatch are not too high.

A unilateral switch may still prove to be beneficial from a national/host country perspective if foreign direct investment responds elastically to profit conditions. If the international court leads to regulatory chill, net profits of firms are higher and thus trigger more FDI. This generates both more losses from regulatory mismatch but also more general benefits from FDI. If the former effect is not too large, domestic welfare rises.

Taken together, a somewhat surprising picture emerges from the analysis: When the loss from regulatory mismatch is large, switching to an ISDS-based court - unilaterally or bilaterally - is not in the interest of a single government even though regulatory chill is not likely to occur. The increase in firm profits under a bilateral switch does not outweigh the loss from regulatory mismatch that materializes if the government loses in court. By contrast, with moderate mismatch losses regulatory chill is more likely to occur, yet a bilateral (but not unilateral) switch can be beneficial from a national welfare perspective. The gain in firm profits from outward FDI compensates for the loss from regulatory mismatch that materializes with a switch to an ISDS-based international court.

In contrast to regulation, I also consider the case of rent extraction. In this case the government changes its tax policy to extract a larger portion of the rent. From a normative perspective taxation is not as problematic because tax payments wash out in the global welfare measure (for given FDI). For this reason the key focus is on the wasteful legal cost that vary with the type of court that is in place. A bilateral switch may or may not improve national welfare.

Literature. The paper is related and contributes to different types of literatures. First, there exists only a small theoretical literature on regulatory chill and the effect of ISDS. Bagwell and Staiger (2001a,b) argue that concerns over regulatory chill are not valid in the case of trade agreements that deal with regulatory policies relating to traded goods (as opposed to FDI), provided that market access is properly guaranteed. Closely related to my work is recent research by Kohler and Stähler (2016) who compare in a theoretical

framework the effects of ISDS and national treatment clauses. They argue that ISDS can reduce the holdup problem, but affects inefficiently the regulatory standard setting over time. National treatment creates an entry distortion for domestic firms but may welfare dominate ISDS if the share of domestic firms is large enough. Stähler (2016) and Konrad (2016) analyze optimal ISDS mechanism. In Konrad (2016) an ISDS system can help to overcome a policy failure due to time-consistency, but at the same time generates uneven benefits for firms and consumers/taxpayers.

In terms of modeling court challenges, the present work is related to Maggi and Staiger (2011) who analyze the role and mandate of the WTO's Dispute Settlement Body (DSB) for trade conflicts between member countries. Like them, the present paper identifies the incomplete contract framework as the core of the underlying problem that gives courts and arbitration centers a role to play.³

There is substantially more work in other social sciences relating to ISDS and regulatory chill, for example, Dietz and Dotzauer (2015) in political science, and Alschner (2013), Bronkers (2015) and Pauwelyn (2015) in law. However, case studies and empirical analyses dominate and therefore do not directly speak to the trade off between non-optimal policies and the benefits of foreign investment.

Finally, the present paper relates to the literature on the determinants of FDI (e.g., Blonigen and Piger, 2011) of which institutional quality in the host country is one important factor. A number of papers has analyzed the role of bilateral investment treaties, and ISDS provisions in particular, for inward FDI. In a series of papers, Busse et al. (2010), Berger et al. (2011, 2013), and Neumayer et al. (2016) find little or no evidence for stricter ISDS provisions to promote FDI, using aggregate FDI data in a gravity-type regression framework. By contrast, Egger and Merlo (2012) - using micro data from the universe of German multinational firms - find a positive and significant effect of BITs on the number flows and FDI magnitude in host countries.

The rest of the paper is organized as follows. In the next section I introduce the model, characterize the first best allocation as a benchmark and the equilibrium outcome in the absence of courts (Prop. 1). In section 3 I introduce a generic court into the analysis and describe the equilibrium policy choice and the firm's legal decision (Prop. 2). This allows me to formally define regulatory chill (Prop. 3). Section 4 focuses on moving the decision power from a national court to an international court (Prop. 4 and 5 for unilateral and bilateral changes, and Prop. 6 for the situation with endogenous FDI). Section 5 considers the case of rent extraction (Prop. 7). Section 6 concludes.

³For a legal perspective on the incompleteness of bilateral investment treaties see Alschner (2013).

2 The Model

The world consists of two countries. In each country there exists a multinational firm that has the option to invest in the other country, called FDI. For simplicity, I assume that the two firms do not interact economically and therefore the profit maximizing choices are independent. In the following I describe the issue from the home country perspective (the host country), to which the (foreign) firm may enter via FDI.

The firm is risk neutral and wants to maximize its profits. The outside option of not investing at all gives a payoff of zero. FDI requires a fixed cost F which cannot be recovered. Investment in the host country gives the firm a net profit of

$$\pi_p^n = \pi_p - F, \tag{1}$$

where π is the firm's gross profit. The subscript p refers to a specific government policy, which is explained below.

After the FDI decision, nature determines the state $s \in \{0, 1\}$, where $s = 0$ can be understood as the status quo which occurs with probability $1 - q$, while $s = 1$ means a new state which happens with probability q . The state is observable to firm and host government, but is not contractible. This is a key assumption of the model and allows me to capture the difficulty to assess whether a regulatory action by a government amounts to indirect expropriation or not. To simplify matters, I assume that the profit π depends only on policy p , and not on state s directly. Of course, the government's policy may depend on the state and thus indirectly affects the firm's profit.

After observing the state the government chooses policy $p \in \{0, 1\}$, where $p = 0$ (also called policy 0) corresponds to the status quo policy, while $p = 1$ stands for a new policy (also called policy 1). A policy describes the regulation of the firm by the host government (e.g., through permits, rules for compliance with product, environmental and safety standards), which affect the firm's gross profit. Specifically, policy $p = 0$ corresponds to gross profit π_0 , while policy $p = 1$ carries a lower gross profit

$$\pi_1 < \pi_0.$$

Hence the firm is harmed by policy 1 compared to policy 0, as also the net profit declines: $\pi_1^n < \pi_0^n$. The Vattenfall case mentioned in the introduction is a good example of a regulatory policy. The German government terminated the license to operate a

nuclear power plant (basically equivalent to $\pi_1 = 0$).⁴

Policy p does not have to match state s . If the two do not match, the host country incurs a loss from *regulatory mismatch* however. Let z_{sp} be the loss when in state s policy p is implemented. I assume

$$z_{00} = z_{11} = 0; \quad \{z_{01}, z_{10}\} > 0. \quad (2)$$

A loss occurs only when a non-state matching policy is chosen. This element is crucial for defining regulatory chill and analyzing its consequences. At the core of the legal conflict, to be discussed further down, will be the issue whether the government policy is in line with the state of the world, that is whether the regulatory policy is “appropriate”.

The government benefits from the presence of a multinational firm. Let b be the benefit to the host government and country, such as the wages paid to local citizens or contributions to tax revenues. The government payoff is assumed to be additive in the general benefit from FDI and the loss from regulatory mismatch

$$U_{sp} = b - z_{sp} + \pi_{p^*}^*. \quad (3)$$

The last term refers to the profit of the home country’s firm investing in the foreign country (indexed by $*$). This term can be ignored for those parts of the analysis where only the policy and legal setup in the home country change.

To discuss the normative implications of the model, I define world welfare W as the sum of firm profits and government welfare:

$$W = W_{sp} + W_{s^*p^*}^* = (\pi_p^n + U_{sp}) + (\pi_{p^*}^{n^*} + U_{s^*p^*}^*) = b + \pi_p - z_{sp} + b^* + \pi_{p^*}^* - z_{s^*p^*}^* - 2F. \quad (4)$$

Since there is no interaction between the welfare generated from FDI in the home country and the FDI in the foreign country, I can focus on the home country w.l.o.g. Assuming for the moment that FDI has taken place, a policy maximizing W_{sp} requires $p = 0$ when $s = 0$ because $W_{00} = \pi_0 > \pi_1 - z_{01} = W_{01}$. When $s = 1$, on the other hand, policy 1 is better than policy 0 if and only if $W_{11} = \pi_1 \geq \pi_0 - z_{10} = W_{10}$, which is equivalent to

$$z_{10} \geq \pi_0 - \pi_1. \quad (5)$$

⁴In section 5 I consider the case of rent extraction, under which policies 0 and 1 represent different tax rates, while holding the gross profit constant.

The choice of the globally optimal policy thus involves a comparison of the loss from policy mismatch with the difference in the firm's gross profit.

No court: I conclude this section by comparing the welfare (W_{sp}) maximizing policy with the equilibrium outcome in the absence of courts. When the state is $s = 0$ it is easy to see that the government never prefers $p = 1$ over $p = 0$ because of the regulatory mismatch loss z_{01} . By contrast, for $s = 1$, the government prefers $p = 1$ over $p = 0$ because under the latter a loss from regulatory mismatch would occur. This leads to

Proposition 1. *Assume that the firm has entered the host country.*

i) In the absence of a court, the government sets its policy as follows:

$$p = \begin{cases} 1 & \text{if } s = 1 \\ 0 & \text{if } s = 0 \end{cases}$$

ii) The home country policy that maximizes global welfare (W_{sp}) is given by

$$\bar{p} = \begin{cases} 1 & \text{if } \{s = 1 \text{ and } z_{10} \geq \pi_0 - \pi_1\} \\ 0 & \text{else} \end{cases}$$

Proposition 1 shows that in the absence of a court the equilibrium outcome is not always efficient. The government chooses to often policy 1 because it ignores the effect on firm profit. In this case equilibrium profits are lower than what is socially optimal.

Corollary. *In the absence of courts the host government policy is not welfare optimal in state $s = 1$ when $z_{10} \in [0, \pi_0 - \pi_1]$.*

The Corollary makes clear that from a world welfare perspective the introduction of a court may improve upon the no court situation. Yet, if the decisions of courts are subject to error or bias, as will be assumed below, the comparison is not a priori clear.

3 Court Challenges and Regulatory Chill

I now introduce a court into the above analysis, which allows me to define regulatory chill. The court is a non-strategic player and makes a rules-based decision when the firm challenges the government after it announces a policy in stage 3.⁵ I add to the previous

⁵If the court were a strategic player it obtains a signal about state s when the firm goes to court. This should be taken into account if the court tries to identify the true state. The present paper follows a different approach by focusing on the conflict between the firm and the host government, and the

game stages 4 and 5 so that the timing becomes

1. Firm decides on FDI. If no FDI, the game ends, otherwise the game continues with
2. Nature draws state $s \in \{0, 1\}$, which is observed by firm and government
3. Government announces policy $p \in \{0, 1\}$
4. Firm decides whether to challenge government policy. If no challenge, the policy announced in stage 3 is implemented. If challenged, then the game continues with
5. Court decides on legality of government policy announced in stage 3.

The firm challenges the government's announced policy by arguing that the government's policy does not match the state of the world. In this sense, the policy is not "appropriate". Yet, it is not always obvious whether a certain policy is appropriate or not. In the theoretical model this lack of clarity comes from the stochastic nature of state, which cannot be verified by a court (or other outside institution other than firm and government). When the court believes that the announced policy does not match the state, the government is forced to revert to the policy that is consistent with the court's declared state. In monetary terms the policy reversion is equivalent to a compensation of the firm by an amount that is equal to the change in profits. A potential difference between policy reversion and monetary compensation lies in the regulatory mismatch loss (which is noted below when relevant).

To illustrate policy reversion, suppose the government announced policy 1 in stage 3 (based on the claim that the state is $s = 1$), the firm challenges the policy in stage 4, and in stage 5 the court sides with the firm and declares $s = 0$ to be the true state. The government then needs to implement policy $p = 0$ (or pay the difference in profits as compensation to the firm; for the firm the two remedies are equal), and may face a loss from regulatory mismatch in state $s = 1$.⁶ If, on the other hand, the court decides in favor of the government and believes s to be 1, the announced policy $p = 1$ is confirmed.

I assume that a challenge in court is costly to the loser of the case, where the loser is determined by the court's decision. If the government is forced to revert its announced policy, it is the loser. Otherwise it is the firm that has to pay the court cost. Losing a court case costs $c \geq 0$.⁷

difference between an international tribunal and a national court.

⁶Monetary compensation and policy reversion give qualitatively the same result, see footnote 9.

⁷Cost of litigation in a ISDS system may be quite substantial. Gaukrodger and Gordon (2012) report that expenses are mostly for legal counsels. ICSID arbitrators are paid around 3,000 USD per day. Depending on the legal frame cost of litigation may be left to the international panel's final award

It is now straightforward to see that a court that always identified the true state s would make legal challenges obsolete: Either because the firm anticipates correctly to lose its case (which is costly), or because the government does not pick a non-state matching policy that would be successfully challenged subsequently. To make things interesting and empirically relevant (because court challenges do occur), I model imperfection in the judicial system as follows: Let $\lambda \in [0, 1]$ be the probability that the court sides with the government when a case comes to court. A high value of λ makes it likely that the government wins the case if the firm challenges, while the opposite is the case when λ is low. The value of λ is known to the government and firm. This assumption appears plausible. Past decisions of courts are observable to both sides and give an indication of a court's leaning. To look ahead, I will assume that the value of λ differs between a national and an international court. So the parameter λ is a key element of the model.⁸

The option to challenge in court affects the government's incentive to pick one policy over the other. The welfare effects of this option are a priori unclear. The option could reduce inefficient government policies, but may also prevent optimal policies from being implemented. I consider the cost from court challenges to be wasteful from a global welfare perspective.

Throughout section 3 I assume that FDI has occurred (which is relaxed in section 4.2). I begin with an analysis of stages 3 to 4 and then define regulatory chill. Stage 5 is residual because the court is not a strategic player. The court's decision can be directly represented by a probabilistic outcome .

3.1 Stages 3 and 4: Policy announcement and court challenge

Solving the game from the back, I start with stage 4.

Stage 4. For the firm the state s does not matter, as its profit depends only on the policy and possible court cost. When the government has announced policy $p = 0$ in stage 3, the firm does not file a lawsuit because doing so lowers its profit in expectation. If instead the government announced $p = 1$, the firm files a lawsuit if and only if

$$E\pi_1^n[chall.] = \lambda[\pi_1 - c] + (1 - \lambda)\pi_0 \geq \pi_1 = E\pi_1^n[no\ chall.]$$

decision (as under ICSID) or to the "unsuccessful party" (as under UNCITRAL). The latter is in line with the present paper. While in public international law typically parties pay their own way, recently a trend towards shifting costs has been observed. What matters for the formal analysis is that losing a court case is costly, either because the loser pays all court cost, or because meeting in court in the first place is costly.

⁸Later, I also consider a different type of court decision making later, where the court is assumed to know the true state with some probability. Results for the existence and characterization of regulatory chill are very similar.

The right hand side of the inequality is the certain payoff when not challenging policy 1 in court. By contrast, the left hand side gives the expected profit when challenging. With probability λ the court sides with the government, and the firm has to pay the court cost in addition to facing policy 1. With probability $1 - \lambda$, however, the court sides with the firm, implying that the firm gets the better policy and does not pay the cost c . The condition for court challenge is equivalent to

$$\lambda \leq \hat{\lambda} := \frac{\pi_0 - \pi_1}{\pi_0 - \pi_1 + c} \in [0, 1]. \quad (6)$$

Intuitively, the firm challenges policy 1 if the court is sufficiently likely to make a favorable decision for the firm.

Stage 3. Two cases need to be distinguished depending on whether condition (6) holds or not.

i) *No court challenge.* If (6) does not hold, the government's policy decision in stage 3 depends on state s because of the regulatory mismatch loss, but is independent of court costs. When $s = 0$, the government announces $p = 0$, thereby avoiding regulatory mismatch and court challenges. On the other hand, when $s = 1$ the government selects policy 1 in order to avoid regulatory mismatch.

ii) *Court challenge.* By contrast, when condition (6) does hold, the government still announces $p = 0$ in state $s = 0$ for the same reason as above. The situation is different, however, when $s = 1$. The government announces $p = 1$, if and only if $(1 - \lambda)[-c - z_{10}] \geq -z_{10}$, which is the same as⁹

$$\lambda \geq \tilde{\lambda} := \frac{c}{z_{10} + c}. \quad (7)$$

$\tilde{\lambda}$ is thus the threshold at which the government switches its decision from announcing policy 0 to policy 1. In short, the government announces policy 1 in state $s = 1$, when its probability of winning in court is sufficiently high.

Proposition 2. *In stage 3 the government never announces policy $p = 1$ in state $s = 0$, but does so in state $s = 1$ if either conditions (6) and (7) hold [leading to a lawsuit], or condition (6) does not hold [no lawsuit]. In all other cases the government announces $p = 0$ and the firm does not challenge.*

⁹Condition (7) assumes policy reversion in case the government loses in court. With monetary compensation instead of policy reversion, the payoff from choosing policy 1 becomes $(1 - \lambda)[-c - (\pi_0 - \pi_1)]$ because the true state is $s = 1$ and therefore no mismatch loss occurs. Under monetary compensation the condition (7) reads $\lambda \geq (c - z_{10} + \pi_0 - \pi_1)/(c + \pi_0 - \pi_1)$, which is qualitatively very similar and declining in z_{10} , as in (7).

3.2 Regulatory Chill

Regulatory chill refers to a situation in which the government announces in stage 3 a non-state matching policy because of the threat of a lawsuit. A first insight is straightforward: Regulatory chill cannot happen in state $s = 0$. If the government announces $p = 0$, which is the state-matching policy, the firm never challenges because the firm is always better off under policy 0. Therefore the government is never prevented from choosing policy 0 in state $s = 0$.

The situation is different, however, when $s = 1$ because of a conflict of interest between firm and government. A precise definition of regulatory chill has the following components:

- In stage 4 the firm goes to court if in stage 3 the government announced policy $p = 1$ (i.e., condition (6) holds; $\lambda \leq \hat{\lambda}$). In other words the firm's lawsuit is credible;
- In stage 3 the government announces policy $p = 0$ if policy $p = 1$ would be challenged by the firm in stage 4 (i.e., condition (7) is violated; $\lambda < \tilde{\lambda}$): In short, the firm's court challenge has a deterrence effect;
- In stage 3 the government announces $p = 1$ if the firm did not challenge the policy in stage 4 (which holds by assumption $z_{10} > 0$; see also Prop. 1).

The last condition is intuitive. If the government preferred policy 0 even in the absence of a lawsuit, policy 1 would never be optimal from the government viewpoint. In that case one should not be concerned about a non-state matching policy.

Putting the conditions for $s = 1$ together, the overall condition for regulatory chill can be compactly written:

$$\lambda < \min\{\hat{\lambda}, \tilde{\lambda}\} = \min\left\{\frac{\pi_0 - \pi_1}{\pi_0 - \pi_1 + c}, \frac{c}{z_{10} + c}\right\} \in [0, 1). \quad (8)$$

Condition (8) carries several implications: First, regulatory chill cannot happen when either $\lambda = 1$ (the court always sides with the government), or $c = 0$ (lawsuits are costless). Second, regulatory chill is impossible when $z_{10} \rightarrow \infty$, as long as $\lambda > 0$. In other words, the loss from regulatory mismatch cannot be too large. Moreover, the set of parameter values consistent with regulatory chill (weakly) declines in z_{10} . When the loss from regulatory mismatch becomes large, the government chooses policy $p = 1$ even if it is threatened with a lawsuit by the firm, as long as the government has some chance of winning in court. The analysis of regulatory chill is thus based on a cost-benefit calculus by government and firm, that takes in the spirit of Becker (1968) the parameters of the legal system rationally into account.

The findings are summarized in

Proposition 3. *Regulatory chill*

a) *does not happen in state $s = 0$.*

b) *occurs in state $s = 1$ if and only if condition (8) holds, which requires $c > 0$ and $\lambda < 1$.*

c) *does not happen in state $s = 1$ if the value of the regulatory mismatch loss z_{10} goes to infinity as long as $\lambda > 0$.*

d) *is not globally welfare optimal in state $s = 1$ for $\hat{\lambda} > \tilde{\lambda}$ when regulatory mismatch loss falls in the range $z_{10} \in [\pi_0 - \pi_1, \frac{(1-\lambda)c}{\lambda}]$.*

Proof of Prop. 3d): Consider the condition for regulatory chill (8). $\hat{\lambda}$ is independent of mismatch loss, while $\tilde{\lambda}$ is a function of z_{10} . If $\hat{\lambda} > \tilde{\lambda}$, the second part of (8) is binding and (8) can be rewritten to obtain $z_{10} < \frac{(1-\lambda)c}{\lambda}$. Policy 1 is welfare optimal according to Prop. 1 if $z_{10} > \pi_0 - \pi_1$. This leads directly to the stated result.

Above I addressed the question whether inefficiencies can arise in the absence of courts, such that the policy chosen by the government does not match the globally optimal policy. It was shown that the government chooses too often policy 1, which happens for values of regulatory mismatch z_{10} below $\pi_0 - \pi_1$. In the presence of a court, I ask a similar question, namely under what conditions regulatory chill is not optimal. The question is not trivial as regulatory chill avoids costly lawsuits, which reduce world welfare, even though otherwise inefficient policies might be chosen. In the presence of a court the range of mismatch loss z_{10} for which the equilibrium policy is inefficient differs from the case without a court. In particular, the range of mismatch loss has shifted upwards. This is not surprising. In the absence of courts, it is the government that picks too often policy $p = 1$ that is harmful to the firm and global welfare. By contrast, in certain cases of regulatory chill the government abstains from a policy that should be chosen from a world welfare perspective but is not because of the threat of lawsuit. Hence there is too little regulation (= policy 1).

3.3 State dependent court decisions

In the base model the decision of a court was unrelated to the (true) state s . While this is convenient way of capturing bias I briefly consider an alternative approach: A court identifies the true state s with probability $\theta \in [0, 1]$, and makes its ruling on any challenge accordingly. In the limit, when $\theta = 1$, the court is perfectly efficient and correctly identifies the true state. The reverse holds when $\theta = 0$. Higher values of θ thus correspond to a more efficient court.

In this environment, the analysis of regulatory chill is basically identical to the one just presented. The reason is that a conflict of interest between the firm and the host government arises only in state $s = 1$. For the decision of the firm in stage 4 only the probability of winning in court matters, not the true state. Therefore the firm decision rule is the same as described in (6), replacing λ by θ . Conditional on being in state $s = 1$, the government’s cost benefit analysis of selecting policy 1 over policy 0 is the same as in the base model as well, thus mirroring condition (7). Therefore the structure of the condition for regulatory chill is identical to (8).¹⁰For the following analysis of national and international courts it is more suitable to work with the initial model formulation, as this allows me to model the international court as more firm-friendly.

4 Which Court? The effect of ISDS

I now consider the effects of moving the decision power for legal conflicts from a domestic to an international court. An ISDS based international panel differs from a national court. Specifically I assume that a court under ISDS is more likely to side with the firm, while a national court is more probable to confirm the government’s view, that is,

$$\lambda_N > \lambda_I, \tag{9}$$

where the subscripts N and I stand for national and international (ISDS) court, respectively.

There are two reasons why condition (9) may hold. First, the international court may have a bias towards firms because the panelist on an international tribunal are often drawn from private law firms with more working relationships to them than professional judges in national courts. Gaukrodger and Gordon (2012) report that 50% of ISDS arbitrators acted as counsels for investors in other ISDS cases, whereas only 10% of arbitators worked as counsels for governments previously.¹¹Second, the Vattenfall case referred to in the introduction highlights the firm’s strategy to file a lawsuit in national court in addition to an international tribunal. So even if the two courts had the same inclination to side with

¹⁰A difference between the court that makes state dependent decisions and the one who does not arises in state $s = 0$, if the government announced policy 1 in stage 3 and the firm challenges. The former court rules in favor of the government with probability $1 - \theta$, while the court described in section 3 rules in favor of the government with probability λ . The two probabilities are not the same in general.

¹¹Government defense counsels are typically not selected as arbitrators, and government investment treaty negotiators do not act as arbitrators. In comparison to the WTO Dispute Settlement Mechanism arbitrators in ISDS are typically highly paid star lawyers from prestigious international law firms, while in the WTO many government bureaucrats get appointed without extra pay (Pauwelyn, 2015).

the government, a multinational firm had two chances to win in the presence of an ISDS based international panel.

The difference in the courts' probability of siding with the host government matters for *decisions* taken by the firm and the government only when the probability λ of the national and international court fall on different sides of at least one of the two thresholds $\hat{\lambda}$ and $\tilde{\lambda}$. If this were not the case, difference in *payoffs* could still occur, because in case of lawsuits the expected payoff depends on the probability of winning in court. I focus on the case with different decisions, however, which appears to be more interesting. Differences in decisions under the national and international court may take place in stage 3 and/or stage 4, which leads to the following cases.

Case I: In stage 4 the firm never challenges $p = 1$ under the national court, but the firm does challenge under the international court, i.e.

$$\lambda_N > \hat{\lambda} > \lambda_I. \quad (10)$$

There are two subcases depending on government decisions in stage 3 under the international court in state $s = 1$. The government announces $p = 1$ in stage 3 when $\lambda_I \geq \tilde{\lambda}$ (Case Ia), or sticks to $p = 0$ when $\lambda_I < \tilde{\lambda}$ (Case Ib).¹²

Case II: In stage 4 the firm challenges $p = 1$ under both the national and international court

$$\hat{\lambda} > \max\{\lambda_N, \lambda_I\}. \quad (11)$$

To preserve the ranking (9), and to have differences in decisions under the two courts, the condition

$$\lambda_N > \tilde{\lambda} > \lambda_I$$

must hold: under the national court the government announces $p = 1$ in stage 3 when $s = 1$, while under the international court the government stays with $p = 0$ in that situation (regulatory chill).¹³

In the remainder various setups are considered. I start with the case of exogenous FDI, relegating the case of endogenous entry into a foreign market to section 4.2. Within section 4.1 I distinguish between a unilateral and a bilateral switch to an international court, where the former involves only one country handing decision power to an international

¹²Condition (10) can also be expressed in terms of the loss from regulatory mismatch. Note that only $\tilde{\lambda}$ is dependent on z_{10} . In Case Ia the condition becomes $z_{10} > (1 - \lambda_i)c/\lambda_i, i = I, N$, while in Case Ib $(1 - \lambda_I)c/\lambda_I > z_{10} > (1 - \lambda_N)c/\lambda_N$.

¹³Expressing (11) in terms of the regulatory mismatch loss, the condition mirrors exactly the one under Case Ib (the difference in the two cases relates to the ranking relative to $\tilde{\lambda}$, which is independent of z_{10}).

court, while in the latter case two countries jointly make that change. In the former case changes in national and global welfare come solely from changes of W_{sp} , while in the latter case also $W_{s^*p^*}$ is affected.

4.1 Exogenous FDI

4.1.1 Unilateral Switch

Case I: I first characterize the outcome under the national court: From an ex ante perspective (after FDI but before state s is known) the payoffs under a national court are

$$E\pi_N^n = q\pi_1 + (1 - q)\pi_0 \quad (12)$$

and

$$EU_N = b \quad (13)$$

Under a national court state matching policies get selected and no regulatory mismatch occurs.¹⁴

By contrast, under an international tribunal the outcome becomes

$$E\pi_I^n = \begin{cases} (1 - q)\pi_0 + q[\lambda_I(\pi_1 - c) + (1 - \lambda_I)\pi_0] \\ \pi_0 \end{cases} = \pi_0 - \begin{cases} q\lambda_I[\pi_0 - \pi_1 + c] & \text{if } \lambda_I \geq \tilde{\lambda} \\ 0 & \text{if } \lambda_I < \tilde{\lambda} \end{cases} \quad (14)$$

$$EU_I = b - \begin{cases} q(1 - \lambda_I)(c + z_{10}) & \text{if } \lambda_I \geq \tilde{\lambda} \\ qz_{10} & \text{if } \lambda_I < \tilde{\lambda} \end{cases} \quad (15)$$

If $\lambda_I < \tilde{\lambda}$ (Case Ib), as indicated in the second line, the situation is one of regulatory chill. The firm obtains high profit π_0 . No court challenge occurs, but a regulatory mismatch loss materializes with probability q . In the first line (Case Ia), $\lambda_I \geq \tilde{\lambda}$, the government announces policy 1 in the new state and gets challenged in court. The firm loses in court with probability λ_I (in state $s = 1$) and thus suffers a loss in profit in addition to bearing the cost of court.

¹⁴Again, I ignore the profit term from outward FDI, which is constant under a unilateral switch.

The effects on firm profits and government payoff from a unilateral switch from national court to an international court can be derived by evaluating the difference between the relevant expressions in (12) to (15).

$$\begin{aligned}
\Delta E\pi^n &= E\pi_I^n - E\pi_N^n \\
&= \begin{cases} q[(1 - \lambda_I)(\pi_0 - \pi_1) - \lambda_I c] & \text{if } \lambda_I \geq \tilde{\lambda} \\ q(\pi_0 - \pi_1) & \text{if } \lambda_I < \tilde{\lambda} \end{cases} \\
&> 0
\end{aligned} \tag{16}$$

The firm always benefits ($q > 0$). To see this, note that in Case Ia (the upper line) the change in net profit is falling in λ_I . Evaluating the expression at the maximum level consistent with Case I, see (10), gives $\Delta E\pi^n|_{\lambda_I = \tilde{\lambda}} = 0$. For lower values of λ_I the firm therefore benefits strictly.

For the government the comparison turns out to be harmful

$$\begin{aligned}
\Delta EU &= EU_I - EU_N \\
&= \begin{cases} -q(1 - \lambda_I)(z_{10} + c) & \text{if } \lambda_I \geq \tilde{\lambda} \\ -qz_{10} & \text{if } \lambda_I < \tilde{\lambda} \end{cases} \\
&< 0.
\end{aligned} \tag{17}$$

The loss is rising in the regulatory mismatch cost z_{10} as well as the probability q of state $s = 1$.

Case II. In this case the firm always challenges policy 1 in stage 4. The two courts differ, however, in terms of the induced stage 3 decision. As argued above, $\hat{\lambda} > \lambda_N > \tilde{\lambda} > \lambda_I$ implies that the government selects policy 1 under the national court (and gets challenged by the firm), while under the international court the government sticks with policy 0 in state $s = 1$, leading to regulatory chill. Technically, the analysis can be done quite easily with the help of conditions (12) to (15) as well. The first line in (14) and (15), respectively, now represents profits and national welfare under the national court (replacing λ_I by λ_N), while the second line represents national welfare under the international tribunal. Subtracting the first line in (14) and (15), respectively, from the second line I obtain

$$\Delta E\pi^n = q\lambda_N[\pi_0 - \pi_1 + c] > 0 \tag{18}$$

$$\Delta EU = q[\lambda_N(-z_{10}) + (1 - \lambda_N)c] < 0. \quad (19)$$

The firm benefits as before because under the international court there is not court challenge. While the firm always gains, the sign of the payoff change for the government is less clear at first sight. The government gains by saving on litigation cost, which happens with probability $q(1 - \lambda_N)$. On the other hand, it loses from regulatory chill under the international tribunal in those instances where it does not happen under the national court. The change in national welfare in (19) is positive if $z_{10} < (1 - \lambda_N)c/\lambda_N$. The condition for Case II to hold, $\lambda_N > \tilde{\lambda} > \lambda_I$, implies the reverse however. Hence the government cannot gain from a unilateral switch. The results are summarized in

Proposition 4. (Unilateral switch) *Assume that the firm decision to enter a country has been done (exogenous FDI) and a country considers a unilateral switch from a national court to an international, ISDS-based court.*

i) *The switch is advantageous for the firm, but is never beneficial for the host country.*

ii) *The switch improves global welfare if $z_{10} < \pi_0 - \pi_1 + \alpha$, where α equals zero in case Ia, $-\frac{c}{1-\lambda_I}$ in Case Ib, and $\frac{c}{\lambda_N}$ in Case II.*

Proof: Part i) is shown in (18) and (19). The proof for part ii) follows from stating global welfare in Case I, which is the sum of the firm's and the government's payoffs (12) and (13)

$$EW_N = b + q\pi_1 + (1 - q)\pi_0. \quad (20)$$

and similarly for (14) and (15)

$$EW_I = b + \pi_0 - \begin{cases} q[\lambda_I(\pi_0 - \pi_1) + c + (1 - \lambda_I)z_{10}] & \text{if } \lambda_I \geq \tilde{\lambda} \\ qz_{10} & \text{if } \lambda_I < \tilde{\lambda} \end{cases} \quad (21)$$

The change in global welfare in Case I can be derived by comparing (20) with each of the lines in (21), while for case II the difference in the two lines of (21) with suitable replacement of λ_I by λ_N , is used.

$$\Delta EW = EW_I - EW_N = q \begin{cases} [(1 - \lambda_I)(\pi_0 - \pi_1 - z_{10}) - c] & \text{if } \lambda_I \geq \tilde{\lambda} \\ (\pi_0 - \pi_1 - z_{10}) & \text{if } \lambda_I < \tilde{\lambda} \end{cases}$$

The statements in the Proposition follow now immediately.

Proposition 4 confirms that a more firm-oriented international court is beneficial to multinational firms in terms of profits, but harmful for the government. While the government saves on litigation cost under the international court, the loss from regulatory mismatch is not compensated. If it were enough to compensate, the government would choose policy 1 even if challenged by the firm subsequently. Overall, the welfare effects in the case of a unilateral switch are therefore in line what critics of international arbitration panels fear. A unilateral switch may improve global welfare, however, as part ii) reveals. This requires the loss from regulatory mismatch to be below the difference in gross profits, adjusted for the cost of litigation where applicable.

4.1.2 *Bilateral Switch to ISDS*

In the following I analyze a bilateral switch to ISDS by two countries, such as the one considered by the EU and US in the TTIP negotiations. The move is a joint and simultaneous decision. It is beneficial for the two countries if the joint move gives higher host country welfare than if both countries stayed with their national courts. What tends to make the bilateral switch more attractive than a unilateral one is that it generates benefits from improved conditions for own firms investing abroad. These must be balanced against possible losses from regulatory mismatch that were described above.

The presence of outward FDI makes it necessary to go back to the full national welfare measure (3), which now is the sum of benefits from FDI, possible losses from regulatory mismatch, and the profits of the country's own firm investing abroad. National welfare is evaluated from an ex ante perspective, that is before the state s is realized. Starting with Case I host country (national) welfare under the national court is given by

$$EU_N = b + [(1 - q^*)\pi_0^* + q^*\pi_1^*],$$

as state-matching policies are always chosen and no court challenges occur. Under the international court national welfare reads

$$EU_I = b + \begin{cases} \{q[(1 - \lambda_I)(-z_{10} - c)]\} + \{(1 - q^*)\pi_0^* + q^*[\lambda_I(\pi_1^* - c) + (1 - \lambda_I)\pi_0^*]\} & \text{if } \lambda_I \geq \tilde{\lambda} \\ -qz_{10} + \pi_0^* & \text{if } \lambda_I < \tilde{\lambda} \end{cases}$$

Taking the difference in host country welfare, $E\Delta U = EU_I - EU_N$, I obtain

$$\Delta EU = \begin{cases} (1 - \lambda_I)[q(-z_{10})] + q^*(1 - \lambda_I)(\pi_0^* - \pi_1^*) - c[q(1 - \lambda_I) + q^*\lambda_I] & \text{if } \lambda_I \geq \tilde{\lambda} \\ q(-z_{10}) + q^*(\pi_0^* - \pi_1^*) & \text{if } \lambda_I < \tilde{\lambda} \end{cases} \quad (22)$$

The first term in each line is negative and indicates a loss from regulatory mismatch, while the second term reflects the gain in profits from the own firm's outward FDI. In Case Ia additional court costs appear negatively. Expression (22) can be simplified if strong symmetry assumptions are imposed. Symmetry means that all parameters of the firm (e.g., gross profit), the host government (regulatory mismatch loss), the national court (decision probability), and general model parameters (probability of state s) are the same. Condition (22) then simplifies to

$$\Delta EU = EU_I - EU_N = q \begin{cases} [(1 - \lambda_I)(\pi_0 - \pi_1 - z_{10}) - c] & \text{if } \lambda_I \geq \tilde{\lambda} \\ (\pi_0 - \pi_1 - z_{10}) & \text{if } \lambda_I < \tilde{\lambda} \end{cases} \quad (23)$$

Conditions for a welfare improvement for a single country under a bilateral switch are easily obtained now. In fact, the conditions are exactly the same as those stated for a global welfare improvement under a unilateral switch (Prop. 4, part iii). This is not surprising upon reflection. *Global* welfare under a unilateral switch includes the profit of the foreign firm investing in the home country. Under symmetry this profit is identical to the profit of the home firm investing abroad. This leads to the following result.

Proposition 5 (bilateral switch). *Assume that the firm decision to enter a country has been done (exogenous FDI). Consider a bilateral switch from a national court to an international court when countries are completely symmetric. The switch improves host country welfare if $z_{10} < \pi_0 - \pi_1 + \alpha$, where α equals zero in case Ia, $-\frac{c}{1-\lambda_I}$ in Case Ib, and $\frac{c}{\lambda_N}$ in Case II.*

For Case II the analysis is simplified by recognizing again that the change in welfare can be written as the difference between the two lines in (23) where in the first line λ_I is replaced by λ_N .

Proposition 5 provides a more optimistic view on the benefits of giving the decision power to an international court. Yet, the loss from regulatory mismatch still plays a crucial role. The switch is harmful if the loss is too large. In both cases I and II it is true, however, that a bilateral switch is more likely to be advantageous if the loss from regulatory mismatch is moderate. Interestingly this is also the case when regulatory chill

is more likely to happen under the international court.

4.2 Endogenous FDI

A switch to an international court increases the firm's expected profit from FDI. If foreign investment is elastic, the switch may trigger additional investment, which in turn generates more host country benefits but also possibly more mismatch losses in case of regulatory chill. How does this affect national welfare when moving to an international court? To examine this question I endogenize the FDI decision and introduce a continuum of firms which are identical except for their market entry cost. Let fixed market entry cost be distributed with continuous density $h(F)$ and cumulative density function $H(F)$ on support $[0, \bar{F}]$.

In the following I focus on Case Ib, $\lambda_N > \hat{\lambda} > \tilde{\lambda} > \lambda_I$, so that under the national court state matching policies are selected, while under the international court regulatory chill occurs. This choice is partly a matter of analytical convenience, as in these cases no law suits are filed and thus court costs do not better. It is also the case where a unilateral switch to an international court is harmful from the government perspective (Prop. 4), and thus makes for an interesting comparison of the cases with exogenous and endogenous FDI.

The first step is to identify the marginal firm under each type of court, which is the firm that is just indifferent between entering and not entering the host country. The fixed cost of the marginal firm that just breaks even under a national court can be derived from using (12)

$$F_N = q\pi_1 + (1 - q)\pi_0 \quad (24)$$

and the corresponding fixed cost under the international court is found in the second line of (14)

$$F_I = \pi_0. \quad (25)$$

Clearly $F_I > F_N$, that is, more firms enter the host country under the international tribunal due to higher expected operating profits. Using superscript FDI to indicate the endogenous level of foreign investment, expected host country welfare in the two situations becomes

$$EU_N^{FDI} = \int_0^{F_N} bh(F)dF \quad (26)$$

and

$$EU_I^{FDI} = \int_0^{F_I} (b - qz_{10})h(F)dF \quad (27)$$

The following result can now be stated, and follows immediately from (26) and (27).

Proposition 6. *Assume $\lambda_N > \hat{\lambda} > \tilde{\lambda} > \lambda_I$ (Case Ib) and let foreign investment respond elastically to expected profits from FDI. A unilateral switch to an international court is beneficial for the host government if*

$$z_{10} < \bar{z}_{10} := \frac{b[H(F_I) - H(F_N)]}{qH(F_I)},$$

where $\bar{z}_{10} > 0$.

The result in Proposition 6 is in contrast to the exogenous FDI case, for which the welfare change was negative (Prop. 4). Of course, sufficiently high losses from policy mismatch are still going to make the unilateral switch unattractive. Yet, the result shows that a positive welfare change is possible even under a unilateral switch and becomes more likely compared to the fixed FDI case.

5 Rent extraction

Regulation is not the only way how governments affect firm profits. The distribution of rents is a source of conflict in particular in the context of natural resources. The above framework can be adapted to account for rent extraction. Specifically, I consider a possible policy change which leaves the gross profit unchanged, but imposes a higher tax. On the other hand, I assume that there is no loss from regulatory mismatch:

$$\pi = \pi_0 = \pi_1, \quad t_1 > t_0 \geq 0, \quad z_{01} = z_{10} = 0.$$

Following the steps of the base model with regulation, it is easy to see that in the absence of courts and for given FDI the government always picks policy 1, as this gives higher tax revenues. From a global welfare perspective it does not matter which tax rate is chosen because tax payments wash out and there are no policy mismatch cost, as long as FDI is given. Introducing courts is now a potential source of social waste, as litigation burns real resources (assuming that the gains to lawyers do not matter).

The firm's decision to file a lawsuit in stage 4 boils down to the same trade-off as shown in the case of regulation in section 3.1. Specifically, the firm goes to court when

facing policy 1 in state $s = 1$ if and only if

$$\lambda \leq \hat{\lambda} := \frac{(t_1 - t_0)\pi}{(t_1 - t_0)\pi + c}. \quad (28)$$

Condition (28) mirrors (6) qualitatively. In both cases it is the difference in net profits between policy 0 and 1 that matters.

In stage 3 the government picks policy 1 if either condition (28) does not hold, or when (28) holds and the probability of winning the lawsuit is sufficiently high. The latter holds when

$$\lambda \geq \tilde{\lambda} := \frac{c}{(t_1 - t_0)\pi + c}. \quad (29)$$

This condition is similar to the one under regulation, see (7). Together conditions (28) and (29) establish the critical thresholds that in conjunction with the courts' decision probability drive the decisions of the firm and host government.

As in the case of regulation, regulatory chill occurs when the probability of siding with the government is below the two thresholds: $\lambda < \min\{\hat{\lambda}, \tilde{\lambda}\}$. In the case of rent extraction, however, regulatory chill is not problematic from a normative perspective because global welfare is independent of taxation, as long as the FDI decision is taken as given, and no loss from regulatory mismatch needs to be considered. What matters are the cost from lawsuits, as becomes clear in the following result.

Proposition 7. *Consider a policy of rent extraction. Assume either $\lambda_N > \hat{\lambda} > \lambda_I$ or $\hat{\lambda} > \lambda_N \geq \tilde{\lambda} > \lambda_I$.*

a) *A unilateral switch from a national court to an international court leads to higher expected firm profits and lower expected government welfare.*

b) *A bilateral switch (weakly) lowers national welfare in Case I ($\lambda_N > \hat{\lambda} > \lambda_I$), but improves national welfare in Case II ($\hat{\lambda} > \lambda_N \geq \tilde{\lambda} > \lambda_I$).*

The intuition is straightforward. The international court is more likely to side with the firm than the national court. This aspect is to the benefit of the firm and harms the host country government under a unilateral switch. Specifically, under the national court the firm pays always the high tax because litigation is not attractive given the low chances of winning in court, whereas under the international court lawsuits may be attractive for the firm and may induce the government to abstain from charging a high tax rate. The opposite effect applies to the host government.

A bilateral switch generates ambiguous effects. In Case I ($\lambda_N > \hat{\lambda} > \lambda_I$) the welfare effect is zero if under the international court no lawsuit is filed because the government

wants to avoid a legal battle and announces the low tax rate ($\lambda_I < \tilde{\lambda}$). By contrast, the host country welfare effect is negative if the decision probability of the international court triggers a high tax rate and a subsequent lawsuit ($\lambda_I > \tilde{\lambda}$). Hence the host government does not gain (and sometimes loses).

In Case II ($\hat{\lambda} > \lambda_N \geq \tilde{\lambda} > \lambda_I$) the firm always challenges in court if it faces the high tax rate. The government announces policy 1 only if the probability of winning in court is sufficiently high. This is the case under the national court but not under the international tribunal (regulatory chill), so that the latter saves on cost of litigation, and thus is preferable from the host country and global welfare perspectives.

6 Conclusion

Despite its importance from a policy perspective, the effects of international arbitration tribunals have not been studied much by economists. This is a shortcoming in so far as a formal framework is needed to shed light on the relative benefit of national vs. international courts to resolve conflicts between multinational firms and host governments. The paper makes a step in this direction by providing a game-theoretic foundation for the notion of regulatory chill. I argue that regulatory chill is not a good indicator of national or global welfare, simply because the host government that “suffers” under regulatory chill maximizes national and not world welfare. This means that in the absence of courts or under national courts inefficient outcomes occur sometimes. An ISDS-based international tribunal may also induce inefficiencies - making regulatory chill more likely - by deciding in favor firms more often. In such a second-best framework a switch from a national to an international court therefore may or may not improve national and global welfare. The paper provides clear conditions when either happens.

Critics of recent trade agreements with international arbitration clauses, such as CETA, TTP and possibly TTIP, fear that ISDS-based courts are biased in favor of multinational firms and thus lead to harmful regulatory chill. The formal analysis in this paper supports this claim if a unilateral switch from a single country’s perspective is taken. Somewhat surprisingly perhaps, it is the case of a bilateral move as in the aforementioned trade agreements that appears more likely to be beneficial.

Two aspects are worth stressing in this context however. First, whether the move is beneficial or not depends on the loss from regulatory mismatch, which is the key parameter in the formal analysis. Quantifying this parameter is an empirical question, which goes beyond the present paper. Second, the (positive) welfare effects under a bilateral move

depend on the gains in firm profits from outward FDI. In the simple model these gains are added to the national welfare change. In practice, these gains may be discounted either because the gains cannot easily be distributed among the entire population, or because the ownership of multinational firms is spread across the world and thus cannot be attributed to the country's welfare under consideration. This weakens the case for international arbitration.

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