

Endogenous Sources of Compliance with International Law: The Case of Investment Arbitration

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Abstract

Can international law protect foreign direct investment (FDI)? Unlike international trade, FDI is governed by a piecemeal set of decentralized treaties. Most of these treaties contain arbitration provisions that allow private firms to sue states that expropriate their assets, an action seen as the “nuclear option” by many international legal scholars. Despite the fact that punishment for noncompliance is relatively weak, state compliance with awards is quite high: we find public evidence of state noncompliance in only 28 percent of 118 public arbitrations in which investors won an award from 1990-2014. A reputation- or information-based argument for how such a system might elicit compliance would focus on the disincentives to states provided by threats of reduced future FDI. We, too, consider the threat of reduced FDI, but not in aggregate. Rather, we focus on the potential for reinvestment from the specific firm targeted by expropriation. We employ a game-theoretic model to argue that arbitration facilitates long-term firm-government cooperation by providing a mechanism for resolving disputes stemming from time-inconsistent preference problems. Compliance is incentivized because it facilitates reparation of the targeted firm-government relationship and a realization of future profits. Our theory therefore suggests that filing for arbitration can be more of a flexibility provision than a “nuclear option.” We use new data from 1990-2014 to analyze patterns of reinvestment by the firms involved in public arbitrations and find considerable support for our arguments.

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Introduction

Does international law protect investors' property rights in foreign countries? The rapid growth in foreign direct investment (FDI) during the latter part of the twentieth century brings with it the risk of expropriation or undue government interference in foreign-owned property.¹ A decentralized corpus of bilateral and regional treaties has arisen to reinforce the property rights of foreign investors and encourage FDI (Jandhyala, Hensiz, and Mansfield 2011). These treaties generally contain provisions for international arbitration should an investor feel its property rights are violated, as well as compensation in the event that the state is found at fault during arbitration. Investment arbitration panels lack "teeth," however, in that they rely primarily on voluntary compliance on the part of host governments or on decentralized enforcement. Unlike in trade law, investors' home states do not gain the explicit right of retaliation if the host state is found liable.² Nonetheless, the record of compliance with public awards is quite good. At least 660 public investment arbitrations have been brought from 1990 through 2014, of which 427 have ended.³ Of the 118 in which the investor won an award, there is public evidence of the state being noncompliant with the arbitral award owed to the investor in only 28 percent.

This strong record of state compliance with awards that make it into the public eye begs the question: why are states that are willing to take the relatively extreme action of violating the property rights of a foreign firm nonetheless willing to comply with the arbitration process? One relevant body of work focuses on the role of Bilateral Investment Treaty (BIT) commitments and arbitration in shaping states' reputations with foreign firms. In particular, BITs are thought to be one means through which states can signal to investors that they will respect their property rights (Elkins et al. 2006, Kerner 2009). Indeed, evidence shows that when foreign firms use public investment arbitration to accuse states of violating BIT commitments, states face statistically significant declines in aggregate and bilateral FDI (Allee and Peinhardt 2011, Wellhausen 2015a).

¹Although there are some important differences in the terms that describe violations of investors' property rights, in this paper we are interested in a variety of government actions ranging from regulatory reform that may violate the terms of investor-host government contracts to outright nationalization. All of these fall under the purview of our central subject – arbitration tribunals arising under international investment agreements. As such, for the purposes of this paper we will use terms including breach and expropriation to describe these types of violations of interest.

²Indeed, investors can generally access investment arbitration without the knowledge or oversight of their home government. Investors can also often bypass the domestic courts in the host state and move directly to international arbitration.

³The most public international arbitral tribunal, the World Bank's International Center for the Settlement of Investment Disputes (ICSID), was founded in 1965. However, only 26 public arbitrations were brought before 1990.

However, we know little about whether outcomes of the arbitration process trigger a similar mechanism. Does the state’s compliance with an arbitral award matter for how foreign firms make investment decisions? Anecdotal evidence suggests that actors think complying with the arbitration process and paying awards provide quite an important signal to investors of willingness to “play by the rules.”⁴ But which investors are interested in that signal? Without denying the possibility of broader reputational effects, we focus in this paper on the signal sent to the most proximate investor: the targeted firm that sued the state.

We offer a firm-level explanation for state compliance with arbitration processes. We analyze a formal model to show that one motivation for state compliance can be found in the host state’s ongoing relationship with the targeted firm. Our argument is simple. First, all states sometimes face pressures to violate the property rights of foreign firms, but both firms and states understand that these pressures are normally temporary. While political or economic exigencies can drive expropriations,⁵ in an increasingly economically integrated world a state’s underlying incentive to attract foreign capital often remains. Second, though they would prefer that host states honor their obligations, foreign firms regularly draw location-specific benefits from investment (Dunning 1980). If there are potentially lucrative future profits and a dearth of alternatives due to location-specific advantages, a targeted firm likely does not want to see expropriation as the end of its relationship with the host state. If there are mutual gains to be had from continued investment, neither the host state nor the targeted firm benefit from indefinite suspension of investment in the aftermath of expropriation.

Third, although foreign firms often see potential future gains from continued investment in a host country, firms prefer that host states face some costs to help deter expropriation. And, in the event of expropriation, the promise of compensation reduces the initial risk for the firm by

⁴For example, according to a prominent lawyer in the investment arbitration area, “A key measure of a state’s political risk is its track record of payment.” (Jim Loftis, quoted in Mark Curriden, “Exxon Mobils Dispute with Venezuela Has Global Implications,” ABA Journal: 1 April 2011.) A prominent legal scholar writes, “When an ICSID award is rendered it is clear that the investment climate would be adversely affected if it were not respected. Instances of post-award litigation before national courts are not only vexing to the party seeking to rely on the award, but also detrimental to the reputation of the non-complying loser.” (Jan Poulsen. 1991. “ICSIDs Achievements and Prospects,” 6 ICISD Rev. Foreign Investment Law Journal 380: 386. Quoted in Bishop (2009): 7-8.) During a June 2014 trip to Argentina, European Commission President Tajani remarked on the state’s improved compliance with arbitration awards, saying that “companies were afraid to invest in Argentina but now everything has changed,” and that the state’s behavior was sending a message of “legal certainties” (Fermin Koop. 14 June 2014. “Repsol is the past, Mercosur is the future,” *Buenos Aires Herald*.)

⁵E.g. Jensen, Malesky, and Weymouth 2014, Fails 2012, Li 2006, Biglaiser and Staats 2015.

increasing its expected utility of investment. Fourth, host states recognize that they face time-inconsistent preference problems and may see expropriation as efficient in the short term, yet still be willing to compensate firms in order to return to mutually beneficial cooperation in the longer term.

The final piece of our argument is that the arbitration process provides a Pareto-superior avenue for establishing costs for host states and compensating targeted firms compared to a world with no arbitration. If both the firm and the host state are willing to condition their behavior on the ruling of the arbitration body, both face higher expected utilities for cooperation and will face shorter interruptions in the investment relationship in the event of breach compared to a world with no possibility for arbitration. In this way, international law can act as a coordination device. The argument that international law can provide a set of rules and expectations on which actors can coordinate their joint expectations is certainly not new (cf. Keohane 1984, Johns 2012), though the application to situations of repeated cooperation between firms and governments is novel, to our knowledge.⁶ In our model, legal rulings provide one possible option on which firms and states can condition their repeated cooperation and punishment in the event of a breach. Thus, we argue that a primary driver of state compliance with international investment law is the state's desire to resume the investment relationship with a particular targeted firm, whether or not aggregate FDI patterns are affected by the state's compliance.

Understanding the real value of investment arbitration is not just of purely academic interest. The concept of foreign firms suing states, and the fact that more and more states have obligations to pay big awards, has fomented a backlash against investment arbitration. Especially in developing countries, people line the streets protesting big awards to investors. German, French, and EU officials have balked at the prospect of including investment arbitration in the US-EU Transatlantic Trade and Investment Partnership (TTIP). Australia has rejected investment arbitration in recent trade and investment agreements, and in the Trans-Pacific Partnership (TPP) Australia negotiated a "carveout" to thwart investment arbitration brought by a firm in the tobacco industry.⁷ Several states have unilaterally withdrawn from investment treaties, and others

⁶Others have pointed out that legal systems may facilitate "efficient breach" (e.g. Rosendorff 2005, Pelc 2009). Pelc and Urpeleinen (2015) argue that "breach and pay" systems that allow governments to violate agreements but compensate affected parties should be common in investment treaties.

⁷*Philip Morris Asia Limited v. The Commonwealth of Australia, Order of the High Court of Australia (Tobacco Plain Packaging Act).*

are reconsidering ratification (Haftel and Thompson 2015, n.d.; Peinhardt and Wellhausen n.d.). International NGOs speak out against investment arbitration. The World Investment Forum at UNCTAD is working on a new model for the international investment regime.⁸ Given this growing outcry against the Investor-State Dispute Settlement (ISDS) institutions that facilitate international investment arbitration, understanding what arbitration in fact accomplishes is of increasing importance. More broadly, understanding investment arbitration can help inform the question: why might states comply with international rulings even when enforcement is weak?

This paper proceeds as follows. The next section reviews literature on the effects of international law in the international political economy and mechanisms underpinning compliance. We develop a formal theory of the potential effects of international law as arbitrations against host states follow through the stages from initial filing, to settlement or finding, to enforcement. We go on to link our model's predictions to straightforward statistical tests and case studies based on a new, comprehensive dataset of public arbitration and subsequent reinvestment by targeted firms from 1990-2014. The final section concludes with our argument's implications for state commitments to investment arbitration and a call for uncovering further endogenous sources of compliance with international law.

Compliance in International Law

There are several mechanisms identified in the literature to explain the “endogenous” compliance pull of international law. These explanations focus on how international law structures incentives to make compliance self-enforcing. For instance, one identified mechanism for compliance is that by entering into various international legal instruments in the first place, governments raise the ex post costs of defection, thus signaling a commitment to abide by obligations (Simmons 2000, 2010; Guzman 2005; Kerner 2009). Because noncompliance becomes much costlier after signing onto a treaty, governments tie their hands by doing so, and they restrict certain policy choices. By being willing to sign, the act of treaty ratification screens compliant and non-compliant types, or types that are willing to be constrained and those who would rather retain flexibility for noncompliance

⁸For example, UNCTAD's Investment Policy Framework for Sustainable Development (IPFSD) intends to respond to “systemic flaws in the current system,” “balancing rights and obligations of States and investors” and “aiming to ensure integration of investment policy in overall development strategy.”

while avoiding added costs.

A second prominent argument built to explain the power of the European Court of Justice and applied to the emergence of courts in federal and international contexts sees international arbitration as a means to reveal information about the conditions under which noncompliance occurred (Carrubba 2005, 2009; Carrubba and Gabel 2014). According to this view, legal proceedings can facilitate long-term cooperation by ensuring that episodes of non-compliance are punished when non-compliance is opportunistic, but forgiven when non-compliance is “involuntary.”⁹

A third mechanism for generating self-enforcing compliance is the incentive to maintain a positive reputation among important audiences. According to reputation-based arguments, incentives to comply with international law derive from concerns over reputation with a broader audience (e.g. Guzman 2008). Reputation may be a mechanism creating incentives to repay sovereign debt, for example (Tomz 2007). There remains some debate over to what extent reputations transfer across issue areas (Jones and Downs 2002, Guzman 2008). Nonetheless, according to the reputation argument, compliance with legal obligations creates expectations that a state will comply in future instances at least with respect to that particular issue, thus assuaging potential partners’ fears of exploitation.

None of these general theories appear in themselves to be adequate explanations of the role of international arbitration over the expropriation of FDI. To understand why these theories fall short, it is useful to consider some stylized facts about the arbitration process. First, the filing of an arbitration claim reveals some information to foreign firms as well as actors in other capital markets (Allee and Peinhardt 2010; Wellhausen 2015a, 2016). Namely, an investor-state dispute occurred that could not be settled without resort to international legal channels. While the signing and ratification of investment arbitration clauses may tie the hands of states by making expropriation more costly, once expropriation occurs the “handcuffs” are already off: the state has reneged on its commitments to the foreign firm, presumably knowing that it may be subject to reputation costs. Thus, a hands-tying mechanism does not make clear what information participation in the arbitration process reveals. The fact that a state is willing to argue its case in a legal venue does

⁹Chayes and Chayes (1993) use this language to refer to noncompliance driven by ambiguity in law or low capacity. In the model in Carrubba (2009), voluntary and involuntary compliance is determined by whether the costs of compliance are exceedingly high or whether a party opted for non-compliance when the costs of compliance were actually low.

not necessarily indicate a willingness to comply with an adverse ruling, and compliance with the process certainly does not reverse the initial act of expropriation. For instance, a state might participate in arbitration so as to avoid accusations from domestic audiences of not “properly protect[ing] public interest” that would come about if the state chose an early resolution to the dispute (Draetta 2011: 18).¹⁰ But it does not follow that a state participating in arbitration for this reason would be compliant with the full process.

Treaty drafters have increasingly paid attention to “carveouts” to protect a state’s sovereign right to make policy that may be counter to a foreign firm’s interests (e.g. Blake 2010, Poulsen 2015). Such language is intended to protect some “involuntary” violations while still penalizing opportunistic ones. But the decentralized tribunals that interpret treaties and make awards have infamously found states both liable and not liable for compensation arising from the same series of events.¹¹ Suffice it so say, whether or not investment arbitration has the capacity to provide signals about extenuating circumstances surrounding violations, a la the European Court of Justice, this mechanism has not worked without controversy. Moreover, it is not clear from a foreign firm’s point of view that the extenuating circumstances around a property rights violation should matter. That is, a foreign firm may not forgive “involuntary” violations, as such violations still result in financial losses.

With regard to reputation, it is unclear what signals observers should take from the presence of an arbitral award, as the nature of legal instruments surrounding FDI make enforcement difficult.¹² There is no right of retaliation built into the system, as there is in international trade law. International treaties that govern enforcement of international arbitral awards leave execution to domestic law (Rivkin and Tahbaz 2009, Bishop 2009: 140). As such, states could simply repudiate awards.¹³ Now, most states are signatories to treaties, in particular the New York Convention,

¹⁰Early resolution outside of arbitration might also be difficult for a foreign firm beholden to shareholders and sensitive to losses.

¹¹See, e.g., Argentina’s experiences with conflicting rulings after its 2001 financial crisis. The Czech Republic, too, was infamously found both liable and not liable to the same investor (Lauder) in parallel proceedings.

¹²States participating in arbitration at ICSID may be contributing to a reputation with the World Bank. In some cases, the World Bank has denied or delayed loans to noncompliant states or states appear to consider noncompliance.

¹³In history, the Greek government repudiated an award rendered in favor of a Belgian firm at the Permanent Court of International Justice in 1938. The Belgian firm won an award against Greece regarding a railway construction project, based on an arbitration clause in the contract. When Greece repudiated, Belgium went back to the PCIJ to advocate for the firm diplomatically. As is true today, however, the PCIJ said it was not authorized to review the validity of the award, and the court “effectively asked the parties to settle the dispute.” *Societe Commercial de Belgique (Belgium v Greece) PCIJ*. (Bishop 2009: 29).

that facilitate enforcement of international arbitral awards (whether arising from investor-state or commercial arbitration).¹⁴ Thus, investors that are owed an award can seek enforcement rulings in signatory country domestic courts and, with those in hand, attempt to seize assets owned by the host state. This is a difficult and costly process. Investors cannot seize assets within the host state. Under international law, some state assets abroad, like central bank holdings, cannot be seized.¹⁵ In 2012, the attempted seizure of an Argentinian warship docked in Ghana – disallowed by a ruling under the International Law of the Sea – is an extreme example of US investors’ attempts to enforce their award. States are accused of making themselves “enforcement-proof” when they take steps to keep assets out of claimants’ reach. Russia, which as of 2015 owes arbitral awards adding up to US\$50 billion, provides one example of creative enforcement-proofing: the state temporarily sold the contents of a Cosmonaut exhibit at the London Science Museum to the museum, so as to keep investors from attempting to seize the property as partial payment.¹⁶ In short, while investors may find convoluted ways to force compliance, it is not clear that the presence of an arbitral award means that the award will be paid (in a timely manner). State participation in these convoluted enforcement procedures is a far cry from a clear signal of “good behavior” to the universe of investors.

Additionally, there are no appeals institutions in international investment law.¹⁷ Thus, a state faced with an adverse ruling may not feel it has exhausted all of its legal arguments despite the finality of the ruling. It may face pressure not to pay the award. States that were sued in the World Bank’s International Center for the Settlement of Investment Disputes (ICSID) have access to annulment proceedings, but these are very constrained. Annulment does not deal with whether there may have been an error in the tribunal’s application of the law. Rather, annulment can only be granted on grounds including errors in process (such as an error in the tribunal’s constitution or procedure) or an error due to omission of reasoning in a final award (but not an error in reasoning itself).¹⁸ It is not clear what information ICSID annulment proceedings send to investors: on one

¹⁴Convention on the Recognition and Enforcement of Foreign Arbitral Awards (New York Convention).

¹⁵ICSID law states, “A foreign state retains the right to plead that certain sovereign assets remain immune from execution under the law of the enforcing state, even if the state has waived its immunity” (ICSID Articles 54-55; Miles 2009; Bishop 2009: 42).

¹⁶David Todd, “Science Museum Hatches Cunning Plan,” Seradata: 27 July 2015.

¹⁷There has been some agitation for an appeals process, especially by actors in the European Union, and several recent US investment treaties make provisions for such a process should it ever emerge.

¹⁸Chapter VII, Rule 50, (1)(c)(iii).

hand, the state is “playing by the rules,” but on the other hand, an annulment process delays award payment. For our purposes, we treat arbitrations that reach annulment proceedings as instances in which a final arbitral ruling remains pending.

Finally, we make a more general comment with regard to the potential role of reputation. An arbitration process and award pertains to the specific, targeted firm(s) that filed for arbitration.¹⁹ Suppose that the state’s compliance with a particular arbitral award clearly signaled compliance to the universe of foreign investors. Still, paying compliance in one instance does not commit the state to honor future awards that involve disputes over completely different circumstances. Thus, we are uncertain as to whether compliance in one case builds a reputation with the universe of foreign investors or even a significant subset. Instead, we focus on a more promising and compelling argument. Whatever the effect of arbitration processes and compliance on FDI in general, compliance certainly matters for future FDI from one source: the particular targeted firm that filed for arbitration.

Data and Evidence on Arbitration and Compliance

Before turning to the model, we draw on our database of public international investment arbitration from 1990-2014 to provide context.²⁰ We can count only public and not private arbitrations. The full population of investment arbitrations is unknown, as firms and states can keep them private in some instances. For example, BITs and similar investment protection treaties vary in their delegation to the most public arbitration tribunal, the World Bank’s ICSID (Allee and Peinhardt 2011). At ICSID, the parties to the dispute are public but the proceedings and awards are sometimes kept private. Our database includes 463 arbitrations filed at ICSID, of which 280 are concluded.²¹ Additionally, we searched court documents, business press, and local press to find information on 197 filings of investor-state arbitrations conducted under UNCITRAL rules, of which 147 are concluded.²² These arbitrations were heard at venues including the International

¹⁹While class-action suits are (as yet) uncommon in investment arbitration, several dozen public suits have multiple claimants.

²⁰We ignore the 26 public investment arbitrations filed before 1990, but trends here are robust to their inclusion.

²¹As of 31 December 2014. Recall that arbitrations in annulment proceedings are categorized as pending. Arbitrations with concluded annulment proceedings are included in the data, categorized based on the award as it stood after annulment proceedings.

²²United Nations Commission on International Trade Law (UNCITRAL). Important sources include IAREporter and ITA Law. See codebook for further details. Of the remaining UNCITRAL arbitrations, 45 are confirmed to be pending. In 5 cases, the arbitration has likely concluded but the outcome is not public.

Table 1: Arbitration Outcomes (1990-2014)

Outcome	Pct of Total	Count
Settlement	34%	147
Investor win	28%	118
State win	38%	162
Total resolved		427

Chamber of Commerce, the Stockholm Chamber of Commerce, the London Court of International Arbitration, the Permanent Court of Arbitration, regional arbitration centers, and ad hoc tribunals. Investment arbitrations under rules provided by UNCITRAL have been non-transparent and have not required public disclosure.²³

Overall, our database includes 660 publicly documented investment arbitrations filed from 1990 through 2014. These were filed against 123 different host states by foreign firms originating from 68 home states, although US investors account for the greatest share (23 percent). Arbitrations were in regard to utilities (22 percent), services (18 percent), oil and gas (16 percent), manufacturing (13 percent), and other industries including mining, finance, telecommunications, agriculture, and real estate.

There are 427 public resolutions in the database. The arbitration was discontinued before the final ruling in 34 percent of cases, which we interpret as settlement. The state won in 38 percent of cases, which includes instances where the tribunal found that state does not owe compensation to the investor as well as instances in which jurisdictional issues account for the ruling. The investor won in 28 percent of cases. (See Table 1.) We count that the investor wins if the arbitration tribunal reaches a final ruling and determines that the state was at fault, regardless of the size of the award made to the investor.²⁴

We code noncompliance as present if (1) the investor won in arbitration and (2) there is public documentation that the state has not paid its award as scheduled. Such documentation can come in the form of court proceedings, firm press releases, business journalism, and similar sources.²⁵ For example, a state is noncompliant if the investor attempts to enforce the award via

²³UNCITRAL adopted new “Transparency Rules” in 2014, which provide public access to documents generated during treaty-based investor-state arbitration, including the names of the parties, the sector involved, and the treaty invoked among other information.

²⁴Based on available data, it appears that investors on average win 30 percent of their original claim. Fifty percent of awards are below US\$15.3 million. As of the end of 2014, investors had won awards of US\$1 billion or more in five proceedings. Wellhausen 2016.

²⁵See codebook for more detail.

a ruling in a secondary court and/or via seizure of state assets. In other words, the state is non-compliant once the investor has to take additional action in order to extract compensation from the state beyond winning an award at arbitration. It is important to note that ours is certainly an undercount of noncompliance. In particular, firms may have incentives to keep evidence of noncompliance private. First, a firm's shareholders would likely be concerned if expected compensation does not arrive on time. Shielding that fact is thus of interest. Second, firms may be interested in reinvesting in the country – as we spell out in some detail in our model below. Making noncompliance with an award public, rather than negotiating about its payment behind closed doors, might spoil the relationship. Thus, a dearth of public evidence of noncompliance is consistent with our argument.

Nonetheless, we find evidence of state noncompliance with the arbitral award in 33 instances.²⁶ In 9 instances, the noncompliance was resolved before the end of 2014 (e.g., the investor withdrew its complaints that the state had not paid).²⁷ We know the amount the investor sought in 22 cases. In half of these cases, the amount sought was below US\$220 million; the mean is pulled up by large claims to US\$504 million. We know the amount awarded to the investor in 32 instances. In half of these, the award was below US\$45 million; the mean is pulled up by large awards to US\$109 million.²⁸ Twenty host states, spread across different regions of the world, were responsible for noncompliance.²⁹ Noncompliance occurred with respect to oil and gas (24 percent), utilities (21 percent), services (18 percent), and other industries including finance, manufacturing, mining, telecommunications, real estate, and agriculture. Below, we explore in more detail how instances of compliance and noncompliance match predictions from our formal model.

²⁶As of 2009, at least four ICSID awards were outstanding with enforcement actions filed, meaning that the host states had not voluntarily complied with the arbitration rulings (Bishop 2009: 6). Incidentally, we find 12 instances in which losing investors are noncompliant in paying costs to the state awarded by the tribunal.

²⁷It could be that the investor was willing to settle on less compensation than was due to it per the arbitration ruling. Regardless, it is appropriate to code noncompliance as ended if the investor is no longer aggrieved.

²⁸In the 23 instances where data is available, investors won on average 32 percent of their claims.

²⁹These states are: Argentina, Belize, Central African Republic, Czech Republic, Ecuador, Georgia, Guatemala, Kazakhstan, Kyrgyzstan, Laos, Latvia, Moldova, Mexico, Russia, Slovakia, Thailand, Ukraine, Uruguay, Venezuela, and Zimbabwe.

Theoretical Argument

In this section we present a theoretical model of repeated cooperation between a firm and a host government. Before analyzing the game, it is worth highlighting several features of our model designed to capture core strategic dynamics between a firm and a host government. First, the game is infinitely repeated, as many FDI relationships involve long-term contracts and, even in the event of renegotiation, often involve a continuing business partnership between the host government and foreign firm. Firms have the option of suspending their investment for a short, medium, or indefinite period in the model, but, as in real life, the suspension of investment need not be permanent.

Second, governments face a time-inconsistent preference problem that generates political risk for the foreign firm. In a given period, the government may possess high or low costs for honoring the firm's investment. These costs could represent political costs from anti-globalization constituencies or the various opportunity costs of allowing a foreign firm to operate on host country soil. Since FDI decisions are undertaken with some uncertainty about future conditions, the firm makes its decision to invest prior to observing whether the government will face incentives to violate its property rights. This captures the idea that firms engage in long-term contracting in FDI relationships even when the host government's incentives to honor the firm's investment may vary from period to period.

Third, the arbitration panel itself is non-strategic. The panel may rule in favor of the firm or the host government, though we opt here to model the likelihood of a ruling in favor of the host government as correlated with the government's costs for compliance. This captures the idea that panels generally attempt to interpret their mandate as impartial arbiters of disputes over investment contracts, though they may take into account political exigencies and special circumstances that impel violations. Indeed, many BITs include language legitimizing expropriation under special circumstances (Blake 2013).

Fourth, compliance with arbitral awards is voluntary, in that the state must choose whether to pay the firm in the event of a ruling in favor of the firm. As we noted at the outset, compliance appears to be the norm, though there are a handful of notable cases in which governments have publicly repudiated awards or gone without making payments for some period. We are interested

in the incentives that drive this variation, and therefore we make paying the award a choice for the government rather than assuming payment.

These features allow us to analyze how the presence of an arbitration panel that can issue awards can facilitate cooperation and encourage the return of a firm to investment even in the event of expropriation. To preview our analysis, we show that cooperation and compliance with arbitration and compensation awards can, under some circumstances, be mutually beneficial for the targeted firm and the host government by facilitating a quicker return to “business as usual.” In the absence of such arbitration options, governments must decide whether to pay targeted firms to induce them to return, and targeted firms have little recourse but to withhold investment to punish governments that expropriate. The presence of an arbitration panel thus provides an efficient means to facilitate long run cooperation in the face of time-inconsistent preferences.

Actors

A government, G , and a firm F . The arbitration panel is non-strategic, though its rulings are noisy signals about whether the government expropriated under high cost or low cost circumstances.

Sequence

1. Firm decides to invest or not invest.
2. Nature draws costs of cooperation for host government, $c \in c_L, c_H$, where $c_L < c_H$. c_L occurs with probability p and c_H occurs with probability $1 - p$, where $p > 1 - p$. This means that ordinary times of low-cost compliance are the norm.
3. Government decides to honor terms of the investment contract or expropriate.
4. If the government expropriates, the parties go to arbitration and a panel is convened.
5. Nature draws the outcome of the panel according to the following probability distribution: if the country is a low cost type and expropriates, the panel rules in favor of the firm with probability r_L and rules against the firm with probability $1 - r_L$. If the country is a high cost type and expropriates, the panel rules in favor of the firm with probability r_H and rules against the firm with probability $1 - r_H$. $r_L > r_H$, implying that the chance of the firm receiving a favorable ruling is greater if the government expropriate in low cost times.

6. If ruling is in favor of the firm, government decides whether to pay compensation or not.
7. Repeat.

Utilities

Under no expropriation and no arbitration, the government receives a utility of $b_G - c$, where $b_G > 0$ is the benefit of the firm's investment to the host country and $c > 0$ is the cost of allowing the firm to operate locally. The firm receives a payoff of b_F , which is simply the firm's profit for operating in the host country.

If expropriation occurs, the firm receives a payoff of $-a$ while the government receives a payoff of $a > 0$, which is the value of the firm's assets located in the host country. If the parties go to arbitration, the panel rules in favor of the firm, and the government complies with the ruling, it pays the firm compensation such that the firm's utility is increased by $d > 0$ while the government's utility for that period is reduced by $d > 0$. In the t-period punishment equilibrium, the government will pay d for t-periods, while in the tit-for-tat equilibrium the government pays d for one period in order to induce the firm to return to cooperation.³⁰

If no investment occurs, the host government receives a payoff of 0 while the firm receives $\gamma \geq 0$, which is the value of its alternatives to investing in the host state.

Analysis

As in any repeated game, there are many possible equilibria. We are interested in one class of equilibria in particular: namely, we are interested in equilibria in which governments sometimes expropriate, go to arbitration, pay the award in the event of an adverse ruling, and the firm conditions its punishment (in the event of expropriation) on the outcome of and compliance with the arbitration process. We thus examine an equilibrium in which the high cost government expropriates, goes to arbitration, and pays the ruling while the low-cost government does not expropriate. We show that when the actors conditional their strategies on the *rule of law*, future cooperative investment is more likely to happen and may happen quicker than it otherwise would in a world with no arbitration. Thus our argument accords with recent arguments that "breach

³⁰We recognize that the structure of the payment schedules for arbitral awards may deviate from these stylized structures. By analyzing the one-time payment and the t-period payment we establish that the general dynamics we find can hold for a variety of payment schedules.

and pay” is an efficiency enhancing design for investment treaties (Pelc and Urpelainen 2015) and that law can serve as an endogenous coordination device (Johns 2012; Carrubba 2009).

We analyze an equilibrium in which the firm plays a t -period punishment strategy, withholding investment for t periods in the event of expropriation.³¹ We show that the length of this punishment, as well as the firm’s willingness to play a strategy that conditions return to cooperation on the arbitration ruling and compliance with pecuniary awards, depends on a number of factors. These include the value of the firm’s outside option for investment relative to the value of continued cooperation, the likelihood of future expropriation, the value of the expropriated asset, and the compensation paid by the government in the event of a favorable ruling for the firm. All proofs are in the Appendix.

In the following paragraphs we present the intuition of the equilibrium and some comparative statics of the repeated game with arbitration. Here we present the results for a t -period punishment equilibrium, because it represents a general case of continuous time divestment.³²

First, in order for governments to expropriate only in high cost times but not in low cost times, it must be that the cost of cooperation during “high cost times” make expropriation preferable but the costs during “low cost times” are sufficiently low such that cooperation is preferable. To see how high “high costs” must be to incentivize expropriation, we can compare the government’s utility for expropriation to that for continued cooperation. The key insights that emerge from that comparison are that incentives for expropriation are higher when (1) the government depends less on investment (i.e. the long-run benefit of continued investment is lower); (2) the current costs of respecting the investment are high (i.e. the government faces more intense pressure to expropriate); (3) the probability of a favorable panel ruling is high (i.e. r_H is low); and (4) the costs of paying an award (d) in the event of an unfavorable ruling are low.

Second, firms must invest under uncertainty, as they have only an expectation of the likelihood that the host will face “high cost times.” The firm must therefore compare the opportunity cost of investment (e.g. alternative investment opportunities) against its expected utility for in-

³¹We also analyze an equilibrium in which the firm plays a variation of a tit-for-tat punishment strategy. See Appendix.

³²In the Appendix we analyze an equilibrium with a simpler tit-for-tat punishment strategy and reach substantively similar conclusions. Note that in the empirics we are not able to test hypotheses about duration of investment suspension, only whether reinvestment occurred, so it is important to establish that our core theoretical results also hold in the case where investment is withheld for one period.

vesting. As one might expect, firms will be more willing to invest as the potential gains from investment (b) go up relative to the risk of facing expropriation and going to arbitration. Notably, the possibility of expropriation and arbitration is lower as the probability of a pro-firm ruling (r_h) goes up. This is consistent with a key rationale behind investment treaties: investor protections and access to international arbitration make investment more attractive.

Third, in the event of expropriation, a firm must compare its expected utility of withholding investment to the expected utility of simply ignoring the expropriation and swallowing the loss of its assets. Simultaneously, a government must consider the relative value of complying in the event of a pro-firm ruling vs. being noncompliant and delaying the firm's return to cooperation by one or more periods. These comparisons establish the upper and lower bounds on sustainable punishment strategies. In other words, these calculations establish two things. First, how severe must the punishment be in order to incentivize the government to honor its commitments during "low cost times"? Second, what is the maximum number of periods in which the firm can credibly commit to disinvest, in order to collect the maximal compensatory award and still be able to return to a profitable investment relationship?³³

In this equilibrium, we show that a firm will return to cooperation when there is a pro-government ruling. That is, a firm will reinvest *even without receiving compensation from the arbitral tribunal*. This behavior can be supported in equilibrium, because both the firm and the government make a pre-commitment to strategies that condition their behavior on the rule of law. Conditioning on the rule of law allows both parties to continue a mutually profitable interaction, as opposed to entering into unproductive reciprocal retaliation in the form of divestment. Below, we discuss how these dynamics change in a world with no arbitration.

There are several interesting features of this equilibrium that hinge on the value of t . We derive comparative statics that motivate these hypotheses in the Appendix. First, t is shorter as d (the value of compensation) increases. That is, when the arbitral tribunal finds the government at fault, the firm will reinvest sooner as the size of the compensatory payment goes up. We use this insight to develop our first empirical hypothesis:

Hypothesis 1. *Reinvestment after a pro-firm arbitral tribunal ruling is more likely when the*

³³In the Appendix, we show that, for a wide range of parameter values, it is optimal behavior for a firm to apply sustainable punishment (rather than returning to cooperation sooner) and for a government to abide by the punishment (that is, pay an award in the event of a pro-firm ruling).

government complies with the ruling and pays the award.

Second, because in our equilibrium the firm and government pre-commit to conditioning their behavior on the rule of law, we expect a return to cooperation even in the event of a pro-government ruling.

Hypothesis 2. *Reinvestment after arbitration is more likely after a pro-government ruling than after the government is noncompliant with a pro-firm ruling.*

These first two hypotheses are the focus of our empirical section below. However, a number of other factors affect the likelihood of reinvestment after arbitration that are worth mentioning. In particular, t is shorter as the value of future cooperation with the state increases. When the prospective gains from future investment are large relative to the firm's outside options, punishment will be shorter and reinvestment more likely. This may result because of location-specific assets (e.g. "immobile assets" that cannot be moved to another location) or simply that the investment opportunity is too lucrative to pass up for long.

Hypothesis 3. *Reinvestment after arbitration is more likely as the gains from future investment increase relative to alternative investment possibilities, regardless of the ruling.*

Next, t is longer when the value of the expropriated asset is larger, holding the value of compensation constant. If expropriation represents a large loss of the firm's investment, the length of punishment necessary to induce reinvestment is longer.

Hypothesis 4. *Reinvestment after arbitration is more likely if the cost to the firm of the initial expropriation is lower, regardless of the ruling.*

Finally, t is longer as the probability of future expropriation goes up. In the model, it is easier for the firm to reinvest as the probability that the government draws "high cost times" ($1 - p$) goes down. The intuition is straightforward: firms considering reinvestment are interested in future political risks, in addition to compensation for their past losses.

Hypothesis 5. *Reinvestment after arbitration is more likely as future risks of expropriation decrease, regardless of the ruling.*

Below, we turn to assessing the welfare effects of international investment arbitration by comparing games where it is present and absent.

Comparison with Firm-Government game with no arbitration

In order to understand the role of international investment arbitration, we compare results from the previous game to a game that is identical except for the absence of an arbitration option. One might think of this as a pre-investment treaty context, or simply as an investment dyad that is not governed by an existing investment treaty (or by a contractual clause allowing the investor to access international arbitration). The sequence of the game is the same, except that no arbitration occurs in the event of expropriation. Once expropriation occurs, the government moves directly to deciding whether or not to pay compensation. We once again examine the conditions that support the government expropriating in “high cost times” but not “low cost times.”

Again, the technical details are presented in the Appendix. In more intuitive terms, the core difference between the two equilibria has to do with the maximum punishment that supports reinvestment. A return to cooperation is a function of the probability of a pro-firm ruling in the arbitration game, but not in the game without arbitration. More specifically, the length of punishment in the arbitration game may be longer or shorter than in the game with no arbitration depending on the value of r_H . When future rulings are more likely to be pro-firm, punishment can be shorter and reinvestment quicker. Simply put, arbitration can help facilitate “breach and pay” behavior, in the sense that a government is likely to be held accountable for expropriation. A system with arbitration is Pareto-improving, because it facilitates an expedited return to a mutually beneficial investment relationship. By providing a mechanism for coordinating the two parties’ strategies in the event of expropriation, arbitration can increase the average expected utility of both parties for future rounds of potential investment. This in turn incentivizes shorter disinvestment.³⁴

We also note a possibly perverse consequence of the presence of arbitration: it it can improve the expected utility of expropriation for a government. To understand why, consider the expected utility calculation facing a government in a setting with arbitration compared to a setting with no arbitration. Under no arbitration, the government can expropriate and pay, in which case the government takes compensatory action to lure the firm back to cooperation. Or, the government can expropriate or not pay, in which case the government simply fails to compensate

³⁴Our argument is therefore similar to that of Johns (2012), who argues that parties can coordinate on abiding by the rules of courts in exchange for efficiency gains.

the investor and thus delays or ends the investment relationship. But, when arbitration is present, the government can expropriate and enjoy some non-zero probability of winning a pro-government ruling. Provided the investor conditions on the rule of law, a government participating in arbitration can receive reinvestment without paying compensation. Unfortunately, testing this implication is difficult; it requires identifying the frequency of expropriation in a pre-investment treaty world (or in investment dyads without investment treaties or contracts with arbitration clauses). Indeed, one role of investment treaties is to provide a framework for identifying expropriation in the first place. Nonetheless, this implication of the model serves as a potential explanation for patterns that may suggest that expropriation of FDI, and particularly “creeping expropriation,” has been on the rise in the past two decades (Wellhausen 2015b).

In sum, when faced with a time-inconsistent problem driven by variable costs of honoring a foreign firm’s investment, a state may sometimes expropriate a firm’s assets yet comply with adverse arbitration rulings and pay compensation. Although it might seem surprising that states would undertake policy changes that violate their commitments, only to turn around and compensate firms for such transgressions, our model demonstrates how these behaviors can simultaneously be in a state’s best interests. The key mechanism that incentivizes compliance with the arbitration process in our model is the possibility of future benefits from a firm’s reinvestment and the promise of a shorter period of disinvestment by the targeted firm in response to the initial expropriation. Firms may also commit to conditioning their punishment on compliance with arbitration when the benefits of future cooperation are sufficiently large, though they will craft their punishment (i.e., the length of disinvestment) to deter “low cost times” opportunistic expropriations. Taken together, the compatibility of incentives in this equilibrium shows that it is possible for firms and governments to use arbitration as a device to trigger reparations of their mutually beneficial business relationships, despite the time-inconsistency problem. The potentially puzzling patterns of expropriation alongside high rates of compliance with arbitration processes are less puzzling when viewed through the lens of a repeated game of firm-government cooperation, where arbitration serves as a focal point device to trigger punishment and recompense.

Empirical Evidence

In this section, we examine trends in reinvestment following arbitration to provide evidence that arbitration can indeed operate in the ways we identified in the model. To code reinvestment, we look for confirmation of any kind of reinvestment in the host country by the firm that filed the arbitration. We break up this task by looking for information on several questions: Did the firm stay in the country despite the arbitration? Did the firm leave during or after the arbitration but reinvest later? Did another subsidiary of the same parent company remain in the country or reinvest? Is the firm operating in the host country as of 31 December 2014? An affirmative answer to any of these questions is sufficient for us to code that, yes, reinvestment took place. We code the variable “no” if we find clear confirmation that the firm (or another subsidiary of the same parent firm) did not reinvest in the country in any way at any point from the filing of the arbitration through the end of 2014. However, we are generally reluctant to take the absence of public reports of reinvestment as definitive evidence that reinvestment did not take place. Thus, we prefer to conclude that we either can or cannot find public evidence of reinvestment, with the presumption that we are likely undercounting reinvestment.

For publicly traded companies, we check annual reports for the year the arbitration process concludes through the end of the following year to see whether the firm left or was in the process of leaving the host country. We then check subsequent annual reports every two years through 2014 to see whether the firm reinvested in the host country at a later date. For companies for which annual reports are not available, we rely on searches of business and specialty press to find evidence of reinvestment.³⁵

First, we present patterns on reinvestment in cases that are settled before a ruling. These are instances in which states and firms are able to find mutually acceptable agreements after an arbitration filing but without needing to see a final ruling. This suggests that the sides share some views (at least to a degree) regarding the likely outcomes of an ultimate ruling, which influences their willingness to compromise *ex ante*. We expect to see reinvestment in these instances, as settlement itself can be interpreted as repairing the firm-government relationship. Empirical evidence that reinvestment takes place following settlement provides a “smell test” that firms with

³⁵In particular, we searched LexisNexis, Factiva, and the specialty outlet IAREporter, which provides news and updates on investment arbitration proceedings. See codebook for details.

Table 2: Reinvestment following Arbitration (1990-2014)

Outcome	Reinvestment (Rate)	Reinvestment (Count)
Settlement	48%	70/147
Ruling	31%	86/280
Investor win	38%	45/118
Investor win + state compliant	42%	37/85
Investor win + state noncompliant	27%	9/33
State win	25%	41/162

grievances against governments are ever willing to reinvest.

The data includes 147 instances in which an arbitration was filed but investors settled prior to a ruling by the arbitration tribunal.³⁶ Seventy different states settled with firms, in industries including utilities (29 percent), oil and gas (17 percent), as well as all other industries represented in the data.³⁷ We find evidence of reinvestment in 70 instances, or 48 percent.³⁸ Put differently, firms are willing to return and reinvest in nearly half of those instances in which they complain of expropriation and initiate formal legal proceedings. We take this as prima facie support that recourse to arbitration need not be a “nuclear option” that spells the end of a firm-government relationship.

Next, we consider reinvestment trends after arbitration tribunals reach a final ruling. The data include 280 instances.³⁹ In 86 instances, or 31 percent, reinvestment took place after the ruling. Even without considering the direction of the ruling, this reinvestment rate again suggests again that reinvestment is not a rare event despite arbitration. (See Table 2.)

As another “smell test,” it fits with our expectations that the reinvestment rate is higher after a pro-firm ruling (38 percent) than after a pro-government ruling (25 percent). That reinvestment takes place in one-quarter of cases after a government wins, however, provides compelling evidence that at least some firms behave as if they condition on the rule of law.

Our first hypothesis is concerned with reinvestment rates in cases of government compliance or noncompliance. Following a pro-firm ruling, we find evidence of state noncompliance in 33 instances (28 percent). Reinvestment takes place in 9 of these instances (27 percent). As expected,

³⁶The coding for settlement includes a public notice of settlement and/or the discontinuation of the arbitration tribunal.

³⁷Recall that these include agriculture, finance, manufacturing, mining, real estate, services, and telecommunications.

³⁸We find definitive evidence that reinvestment did not occur in only 13 instances (9 percent).

³⁹In 49 instances, the final ruling is the result of both initial arbitration proceedings and annulment proceedings at ICSID.

this rate of reinvestment is lower than the reinvestment rate following a pro-firm ruling and state compliance (42 percent).

Our second hypothesis is more nuanced and focuses on whether firms condition on rule of law. The reinvestment rate after a pro-government ruling at arbitration is 25 percent. This rate is in fact not significantly greater than the reinvestment rate following a pro-firm ruling but state noncompliance (27 percent). Nonetheless, we retain confidence in the usefulness of our model, and the prediction of conditioning on rule of law, for two reasons. First, by this point we are dealing with very small numbers. It could very well be that other parameters relevant to reinvestment are not randomly distributed across the 33 instances of noncompliance and the 9 instances of subsequent reinvestment. For example, in this handful of cases, reinvestment following noncompliance include oil and gas in Ukraine, mining in Kyrgyzstan, oil and gas in Kazakhstan, and mining in Venezuela. These are archetypal industries in which investors have few outside options – i.e., firms are relatively “immobile” and may be pulled to reinvest in instances where a relatively more mobile firm would not.

Second, in 9 of these 33 instances, we have evidence that the state was noncompliant for a period but then returned to compliance, either by paying the award in full or otherwise negotiating with the targeted firm such that the targeted firm withdrew accusations of noncompliance. Five different countries did this: Argentina, Kazakhstan, Uruguay, Mexico, and Georgia. In three of these instances, we know that the targeted firm reinvested.⁴⁰ The reinvestment rate in these instances (33 percent) corresponds with the notion that at least some firms respond positively to compliance and, moreover, that at least some firms are willing to update their beliefs about the government once it complies. In the remaining 24 instances of continued noncompliance, subsequent reinvestment took place in only 21 percent.

What does this slicing and dicing of reinvestment rates get us? First, reinvestment does take place. It is not a fool’s errand to look for an endogenous compliance pull from the relationship between the targeted firm and the host government. Second, empirical trends roughly follow our model’s predictions: the highest reinvestment rates follow settlement, followed by instances where there is a pro-firm ruling and the government complies. Now, in conflict with Hypothesis 2, the

⁴⁰ *AIG Capital Partners, Inc. v. CJSC Tema Real Estate Company v. Kazakhstan; Cargill Incorporated v. United Mexican States; CMS Gas Transmission Company v. Argentina.*

reinvestment rate following a pro-government ruling is roughly on par with the reinvestment rate following noncompliance with a pro-firm ruling. But, by this point we are dealing with very small numbers that are an insufficient substitute for large-N analysis. Nonetheless, even here we see higher reinvestment following resolved noncompliance – a return to the rule of law – than following continued noncompliance. As arbitration tribunals continue to issue ruling on the 233 pending arbitrations as of the end of 2014, not to mention new filings, our model would predict that a clearer pattern of conditioning on rule of law would emerge. At minimum, we can say today that roughly a quarter of firms are reinvesting in what might, at first pass, appear to be extraordinary circumstances – when they have been denied compensation for expropriation, whether from an adverse arbitral ruling or a recalcitrant host government. That other parameters influence reinvestment patterns is undeniable. We posit that three of these are a firm’s outside investment options, the value of the expropriation, and the presence of future political risks.

Conclusion

We offer a specific, firm-level explanation for the compliance pull of international law: non-compliance matters to the targeted firm and the targeted firm’s prospects of reinvesting in the host state. Because there are generally mutual gains from reinvestment, this pressure can be enough to constrain states to comply. We need not look to faceless global capital to understand pressures for states to comply with even relatively toothless international investment law.

Our argument contrasts with several alternative theories of the influence of international law. First, we do not argue that compliance with the arbitration process reveals new information to investors about a government’s willingness to break its international obligations.⁴¹ Second, we do not argue that compliance with arbitration occurs primarily because governments are concerned with their overall compliant reputations (e.g. Guzman 2008). Importantly, arbitration filing may accord with either of these information- or reputation-based explanations. Filing signals the existence of a dispute, the government’s refusal to settle, and the government’s willingness to go to

⁴¹In other words, we do not view compliance with arbitration as a device that screens “good” types from “bad,” or compliance-oriented types from opportunistic types (e.g. Von Stein 2005, Tomz 2007). We also do not conceive of the arbitration process as affecting behavior primarily through revealing information about the context of the dispute (Carrubba 2005, 2009; Carrubba and Gabel 2014), although in our model the context of expropriation affects the probability of adverse ruling.

public investment arbitration (Allee and Peinhardt 2010). We argue that the process of arbitration, however, does not unequivocally provide additional information or reputational signals: the outcome of arbitration does not change the fact that an investor felt expropriated and the state refused to settle outside of court. Nor do other firms benefit from compensation awarded to the targeted firm. Thus, we focus on the targeted firm's response to the process of arbitration and its outcomes. Incentives for compliance arise endogenously because of the structure of the target firm-host government relationship and the possibilities of future benefits from cooperation.

Our empirical analysis involved the collection of compliance and reinvestment information for 660 arbitration proceedings from 1990-2014. Although our data are somewhat limited by the public availability of key variables of interest and the small number of cases, we do find qualified support for the idea that firms and states use the rule of law as a coordination device to condition their cooperative behavior. In particular, firms are more likely to reinvest if they win an arbitration case and a government complies with the arbitral award than they are when governments fail to comply. In the available data, firms are roughly as likely to reinvest in the case of an arbitration decision in favor of the state as when the state fails to comply with an adverse ruling. The willingness to condition behavior on the rule of law continues to be tempered by material benefits like location-specific advantages and the availability of outside options for both parties.

The usefulness and fairness of the de facto international investment regime are topics of considerable scholarly and public debate (e.g., Simmons 2014). Why do states comply with such a controversial set of institutions? We argue that a key driver of compliance is the relationship between the host state and the targeted firm. If there are benefits from continued investment, then there are incentives to "play by the rules." And, as is aptly demonstrated by the growth of FDI around the world over the last decades, many states and firms believe there are benefits to be had from continued investment. Compliance can bring investment back from exactly the firm that was expropriated.

Appendix

Game with Arbitration, t-period punishment

Under no expropriation and no arbitration, the government receives a utility of $b_G - c$, where $b_G > 0$ is the benefit of the firms investment to the local economy and $c > 0$ is the cost of allowing the firm to operate locally. The firm receives a payoff of b_F , which is simply the firm's profit for operating in the host country.

The continuation value of cooperation under all circumstances for G is

$$CV = p \left(\frac{b_G - c_L}{1 - \delta} \right) + (1 - p) \left(\frac{b_G - c_H}{1 - \delta} \right)$$

The continuation value for breach and paying the award in the event of an adverse ruling is (assume if ruling goes in favor of the host state, cooperation resumes as normal):

$$CV = p(b_G - c_L + \delta CV) + (1 - p) \left(r_H \left(a - d + \frac{(\delta - \delta^{t+1})(-d)}{1 - \delta} + \delta^{t+1} CV \right) + (1 - r_H)(a + \delta CV) \right)$$

The first part of this expression shows the expected utility of cooperation, which accrues to the government during low cost, "normal" times. The second part of the expression shows the expected utility for the government in the event it draws high costs. This expected utility involves the probabilities of rulings in favor of and against the government, as well as the utilities associated with those outcomes. The continuation value simplifies to

$$CV = \frac{pb_G(\delta - 1) + c_L(p - \delta p) + (p - 1)(a - \delta a + \delta r_H(\delta^{t+1} - 1))}{(\delta - 1)(1 - \delta + \delta r_H(p - 1)(\delta^{t+1} - 1))}$$

Comparing these two expected utilities shows that breaching in high cost times only is preferred when the costs of cooperation during those times are sufficiently high, such that

$$c_H \geq \frac{a(\delta - 1) + r_H(d - \delta^{t+1}d + \delta p c_L(\delta^{t-1} - 1) - b_G(\delta - 1 + \delta r_H(\delta^t - 1)))}{1 - \delta + \delta r_H(p - 1)(\delta^t - 1)} \quad (1)$$

To establish, however, the minimum threshold for the t-period punishment that will incentivize breaching only in high cost times and paying compensation in the event of a ruling for the firm, we can rearrange equation 1 in terms of t:

$$t \leq \frac{\ln \left(\frac{(\delta-1)(a-b_G+c_H)+r_H(d+\delta(b_G+c_H(p-1)-pc_L))}{r_H(d+b_G+c_H(p-1)-pc_L)} \right)}{\ln \delta} - 1 \quad (2)$$

To establish the lower bound on t, compare the government's utility for always breaching to it's utility for only breaching during high cost times:

$$\frac{pb_G(\delta-1) + c_L(p-\delta p) + (p-1)(a-\delta a + dr_H(\delta^{t+1}-1))}{(\delta-1)(1-\delta + \delta r_H(p-1)(\delta^{t+1}-1))} \geq \frac{a-\delta a + dr_H(\delta^{t+1}-1)}{(\delta-1)(\delta-1 + \delta r_H(\delta^t-1))}$$

Solving for t:

$$t \geq -1 + \frac{\ln \left(\frac{(\delta-1)(a-b_G+c_L)+r_H(d+\delta b_G-\delta c_L)}{r_H(d+b_G-c_L)} \right)}{\ln \delta} \quad (3)$$

Combining equations 2 and 3, the government will breach in only high cost times as when

$$\frac{\ln \left(\frac{(\delta-1)(a-b_G+c_L)+r_H(d+\delta b_G-\delta c_L)}{r_H(d+b_G-c_L)} \right)}{\ln \delta} - 1 \leq t \leq \frac{\ln \left(\frac{(\delta-1)(a-b_G+c_H)+r_H(d+\delta(b_G+c_H(p-1)-pc_L))}{r_H(d+b_G+c_H(p-1)-pc_L)} \right)}{\ln \delta} - 1$$

The firm will cooperate and initially invest as long as the value of continued investment exceeds its opportunity cost of investment:

$$\gamma \leq p(b_F + \delta CV) + (1-p) \left(r_H \left(d - a + \frac{(\delta - \delta^{t+1})d}{1 - \delta} + \delta^{t+1} CV \right) + (1 - r_H)(\delta CV - a) \right)$$

Would the firm play the t-period punishment strategy? A one-period deviation from this punishment strategy entails returning to investment one period earlier:

$$r_H \left(d + \frac{(\delta - \delta^{t+1})d}{1 - \delta} + \delta^{t+1}CV \right) + (1 - r_H)CV \geq r_H \left(d + \frac{(\delta - \delta^{t+2})d}{1 - \delta} + \delta^{t+2}CV \right) + (1 - r_H)CV$$

The difference between the two expressions is the difference between returning to cooperation one period earlier, and thus getting the firm's expected value of investment for that period, and delaying that return and receiving the compensation payment, d , for an extra period. Thus when the firm's expected value of investment for one period is greater than d , it will return to investment in period $t + 1$:

$$d \leq p(b_F) + (1 - p)(r_H(d - a) + ((1 - r_H)(-a)))$$

When this is true, the firm will refrain from investing for t periods in the event of expropriation, where $t =$ the maximum identified in equation 2.

*Game with no arbitration, t-period punishment The government's utility for never expropriating is as before:

$$CV = p \left(\frac{b_G - c_L}{1 - \delta} \right) + (1 - p) \left(\frac{b_G - c_H}{1 - \delta} \right)$$

The government's continuation value for expropriating only in high cost times and paying compensation is now:

$$CV = p(b_G - c_L + \delta CV) + (1 - p)(a - d + \frac{(\delta - \delta^{t+1})(-d)}{1 - \delta} + \delta^{t+1}CV)$$

The continuation value for always expropriating and paying compensation is:

$$CV = p(d + \frac{(\delta - \delta^{t+1})(-d)}{1 - \delta} + \delta^{t+1}CV) + (1 - p)(a - d + \frac{(\delta - \delta^{t+1})(-d)}{1 - \delta} + \delta^{t+1}CV)$$

Proceeding as before and comparing the value of expropriating only in high cost times to

always expropriating or never expropriating (and always or never paying compensation) establishes the upper and lower bounds for what punishment will support expropriating only in high times and paying compensation.⁴² Comparing the continuation value of never expropriating to the continuation value for expropriating only during high cost times and paying compensation establishes an upper bound on t , such that:

$$t \leq \frac{\ln\left[\frac{b+d+a(\delta-1)+c_H(\delta p-1)-\delta p c_L}{b+d+c_H(1-p)-p c_L}\right]}{\ln \delta} - 1 \quad (4)$$

Comparing the continuation value for only expropriating during high cost times to that of always expropriating and paying compensation establishes the lower bound on t , such that:

$$t \geq \frac{\ln\left[1 + \frac{a(\delta-1)}{b+d-c_L}\right]}{\ln \delta} - 1$$

As in the game with arbitration, the firm will set t equal to the maximum punishment as long as the cost to the state of paying compensation exceeds the expected utility to the firm of returning one period earlier to reinvestment. The firm will initially invest if the value of its outside option exceeds its expected utility for investment, or if:

$$\gamma \leq p(b_F + CV) + (1-p)\left(\frac{\delta - \delta^{t+1}d}{1-\delta} - a + \delta^{t+1}CV\right)$$

⁴²The continuation value for always expropriating and never paying compensation is $CV = p(a + \delta^{t+1}CV) + (1-p)(a + \delta^{t+1}CV)$ while the continuation value for expropriating in only high cost times and not paying compensation is $CV = p(b_G - c_L + \delta CV) + (1-p)(a + \delta^{t+1}CV)$. Not paying compensation is not a profitable deviation and thus not part of an equilibrium given the firm's particular punishment strategy assumed here, as it delays resumption of cooperation.

References

- [1] Allee, T. and C. Peinhardt. 2011. Contingent Credibility: The Impact of Investment Treaty Violations on Foreign Direct Investment. *International Organization* 65(3): 401-432.
- [2] Allee, Todd, and Clint Peinhardt. "Delegating differences: Bilateral investment treaties and bargaining over dispute resolution provisions." *International Studies Quarterly* 54.1 (2010): 1-26.
- [3] Bishop, R. Doak, Editor. 2009. *Enforcement of Arbitral Awards Against Sovereigns*. Huntington, NY: Jurisnet.
- [4] Carrubba, Clifford J. 2005. Courts and Compliance in International Regulatory Regimes. *Journal of Politics* 67(3): 669-689.
- [5] Carrubba, Clifford J. 2009. A Model of the Endogenous Development of Judicial Institutions in Federal and International Systems. *Journal of Politics* 71(1): 55-69.
- [6] Carrubba, Clifford J. and Matthew Gabel. 2014. *Courts and Compliance in International Law: The Role of the European Court of Justice in European Integration*. Cambridge University Press.
- [7] Chayes, Abram and Antonia Handler Chayes. 1993. On Compliance. *International Organization* 47(2): 175-205.
- [8] Chinn, Menzie D., and Hiro Ito. "A new measure of financial openness." *Journal of comparative policy analysis* 10.3 (2008): 309-322.
- [9] Draetta, Ugo. 2011. *Behind the Scenes in International Arbitration*. Huntington, NY: Jurisnet.
- [10] Dunning, John H. "Towards an eclectic theory of international production: some empirical tests." *Journal of international business studies* 11.1 (1980): 9-31.
- [11] Elkins, Zachary, Andrew T. Guzman, and Beth A. Simmons. 2006. Competing for Capital: The Diffusion of Bilateral Investment Treaties. *International Organization* 60(4): 811-846.

- [12] Ginsburg, Thomas. 2005. International Substitutes for Domestic Institutions: Bilateral Investment Treaties and Governance. *International Review of Law and Economics* 25(1): 107-123.
- [13] Guzman, Andrew T. 2008. *How International Law Works: A Rational Choice Theory*. New York: Oxford University Press.
- [14] Guzman, Andrew T. "The design of international agreements." *European Journal of International Law* 16.4 (2005): 579-612.
- [15] Jandhyala, Srividya, Witold J. Henisz, and Edward D. Mansfield. "Three waves of BITs: The global diffusion of foreign investment policy." *Journal of Conflict Resolution* (2011): 0022002711414373.
- [16] Johns, Leslie. 2012. "Courts as Endogenous Coordinators: Enforcement and Jurisdiction in International Adjudication." *Journal of Conflict Resolution* 56(2): 257-289.
- [17] Karcher, Sebastian, and David A. Steinberg. "Assessing the Causes of Capital Account Liberalization: How Measurement Matters." *International Studies Quarterly* 57.1 (2013): 128-137.
- [18] Kerner, Andrew. 2009. Why Should I Believe You? The Costs and Consequences of Bilateral Investment Treaties. *International Studies Quarterly* 53(1): 73-102.
- [19] Kobrin, Stephen Jay. *Managing political risk assessment: Strategic response to environmental change*. Vol. 8. Univ of California Press, 1982.
- [20] Peinhardt, Clint, and Rachel Wellhausen. 2015. Treaty Abrogation: The Case of International Investment Institutions. Working paper.
- [21] Pelc, Krzysztof J. and Johannes Urpelainen. 2015. "When do International Agreements Allow Countries to Pay to Breach?" *Review of International Organizations* 10(2): 231-264.
- [22] Reinhardt, Eric. 2001. Adjudication without Enforcement in GATT Disputes. *Journal of Conflict Resolution* 45(2): 174-195.

- [23] Rivkin and Tahbaz. 2009. In Bishop, R. Doak. *Enforcement of arbitral awards against sovereigns*. Juris Publishing, Inc., 2009.
- [24] Simmons, Beth. 2000. International law and State Behavior: Commitment and Compliance in International Monetary Affairs. *American Political Science Review* 94(4): 819-835.
- [25] Simmons, Beth, and Allison Danner. 2010. Credible Commitments and the International Criminal Court. *International Organization* 64(2): 225-256.
- [26] Simmons, Beth A. "Bargaining over BITs, arbitrating awards: The regime for protection and promotion of international investment." *World Politics* 66.01 (2014): 12-46.
- [27] Tomz, Michael. 2007. *Reputation and International Cooperation: Sovereign Debt Across Three Centuries*. Princeton, NJ: Princeton University Press.
- [28] Vernon, Raymond. 1971. *Sovereignty at Bay*. New York: Basic Books.
- [29] Von Stein, Jana. 2005. Do Treaties Constrain or Screen? Selection Bias and Treaty Compliance. *American Political Science Review* 99(4): 611-622.
- [30] Wellhausen, Rachel. 2016 (Forthcoming). Bondholders v. Direct Investors? Competing Responses to Expropriation. *International Studies Quarterly*.
- [31] Wellhausen, Rachel. 2015a. *The Shield of Nationality: When Governments Break Contracts with Foreign Firms*. Cambridge University Press.
- [32] Wellhausen, Rachel, 2015b. Investor-State Disputes: When can Governments Break Contracts? *Journal of Conflict Resolution*.