

## Lauge N. Skovgaard Poulsen and Emma Aisbett When the claim hits: bilateral investment treaties and bounded rational learning

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# When the Claim Hits: Bilateral Investment Treaties and Bounded Rational Learning

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**Abstract.** Using the international investment regime as its point of departure, the paper applies notions of bounded rationality to the study of economic diplomacy. Through a multi-method approach, it shows that developing countries often ignored the risks of bilateral investment treaties (BITs) until they themselves became subject to an investment treaty claim. Thus the behavior of developing country governments with regard to the international investment regime is consistent with that consistently observed for individuals in experiments and field studies: they tend to ignore high-impact, low-probability risks if they cannot bring specific 'vivid' instances to mind.

**Keywords:** bounded rationality, international political economy, international economic law, bilateral investment treaties

**JEL Classification:** D03, F00, F02, F13, F20, F21, F23, F51, F53, F55, K33

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## Introduction

Bilateral investment treaties (BITs) have in recent years been presented as among the most potent legal instruments underwriting economic globalization.<sup>1</sup> The treaties grant foreign investors a right to file international arbitration claims directly against governments without first having exhausted local remedies. If governments refuse to participate in the proceedings, or chose not to comply with an arbitral award, investors are allowed to confiscate their commercial property in most corners of the world, with only limited options for courts in enforcing states to refuse execution. Combined with their wide scope of administrative review, this dispute-settlement mechanism makes BITs uniquely powerful in an international law context. As foreign investors have realized this over the last decade and a half, particularly developing country governments have been on the respondent end of an increasing number of investment treaty arbitrations, which have resulted in awards of hundreds of millions of dollars and often involved sensitive areas of public regulation. Thus it has become increasingly clear that adopting BITs entails considerable risks.

But while almost every developing country has adopted at least a few BITs, the question is whether they truly realized that by consenting to investment treaty arbitration, they were exposing themselves to the risk of costly litigation? Practically all studies on BIT-formation are based on the assumption that developing countries understood the potential costs of the treaties, when the modern network of BITs was established during the 1990s.<sup>2</sup> But when BITs with investor-state arbitration clauses proliferated rapidly, hardly any claims had indicated that they actually had a tangible impact on investor-state relations.

The rise in investment treaty claims has therefore led to spatially and temporally dispersed arrival of important information about the potential costs of BITs. Combined with the fact that participation is a repeated decision for states, this provides a unique opportunity to

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<sup>1</sup> E.g. Van Harten 2007; Schneiderman 2008; Montt 2009; Schill 2009.

<sup>2</sup> E.g. Guzman 1998; Elkins, Simmons, and Guzman 2006, 825; Montt 2009, 128; Blake 2010; Büthe and Milner 2009; Allee and Peinhardt 2010; Bergstrand and Egger 2011. For exceptions, see Van Harten 2010, 42-46; Jandhyala, Henisz, and Mansfield 2011. Note that BITs were signed from the late 1950s, but only from the late 1980s did they include a legally binding consent to investor-state arbitration; Yackee 2008. See also below.

study not just how governments have responded to the rise of investment arbitrations but also, more broadly, how they learn about the impact of their (economic) policies.

The latter question has been dealt with in the literature on policy learning, which seeks to understand the processes whereby policy makers change beliefs as a result of observing and interpreting experiences, which in turn may lead to corresponding policy changes.<sup>3</sup> The most prominent learning model in this literature is Bayesian updating. Here, governments learn about policies by weighing their prior beliefs (e.g. the prudence of signing BITs) against the quantity and quality of observed experience (e.g. the liabilities involved in investment treaty arbitration).<sup>4</sup> An alternative view of policy learning comes out of the literature on bounded rationality. Here again, policy-makers are seen as goal-oriented, and thereby rational in the broadest sense of the word. But rather than the laws of statistics, policy learning is biased by cognitive shortcuts consistently found in experimental studies on human judgments and decision-making.<sup>5</sup>

In the context of international political economy (IPE) literature, as well as international relations more broadly, the second view on policy learning has received only scant attention. This may be appropriate, if models of bounded rationality sacrifice theoretical parsimony without leading to new and important insights. On the other hand, if insights on bounded rationality can in fact most elegantly explain systematic variation in how countries learn about their economic policies, perhaps it is time to include them among the standard theoretical arsenal of international relations literature.

To contribute to this question, the BIT-regime provides an excellent case study. Firstly, in contrast to the diffusion of revolutions and other path-breaking policy innovations recently studied from a bounded rationality perspective by Kurt Weyland,<sup>6</sup> the decision to enter into BITs has not been a one-off event for the individual country, but rather a sequential, or evolutionary, process taking place over decades. The time pressure has been minimal, and if not satisfied with their initial decision, states did not have to continue since they weren't

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<sup>3</sup> E.g. Levy 1994.

<sup>4</sup> 'Quality' here refers to the variability, or consistency, of available outcome information. See generally, Meseguer 2009.

<sup>5</sup> See generally, Jones and Baumgartner 2005.

<sup>6</sup> Weyland 2006, 2009, 2010.

coerced into joining the BIT-movement.<sup>7</sup> This makes the BIT movement a hard case for a bounded rationality framework.

Secondly, while some foreign policy studies in the security realm have applied insights on bounded rationality,<sup>8</sup> the politics of investment treaties is not characterised by the same extent of pressure and emotions as in military conflict, and actors are thereby less prone to be influenced by biasing heuristics. For this reason as well, the BIT movement is a hard case.

Third, Meseguer has argued, convincingly, that applying bounded rationality insights to the study of international economic policies does not necessarily lead to predictions, which could not also be explained by a Bayesian framework.<sup>9</sup> Yet, we will show that the bilateral nature of BITs offers a quantifiable prediction of the bounded rational learning model, which is not observationally equivalent to that of Bayesian learning.

The paper is divided into four sections. Based on the observation that BITs involve high-impact, low-probability costs, the first section will outline our two main competing hypotheses based on rational learning and bounded rational learning. The second will present qualitative insights from policy-makers ‘on the ground’ for whether, and how, the rise of investment treaty arbitration has had an impact on developing countries’ willingness to enter into BITs. Our focus is on developing countries, as they have been subject to the vast majority of disputes.<sup>10</sup> Building on these insights, the third section offers an econometric analysis on the impact of investment arbitrations on developing countries’ propensity to adopt BITs. Both the qualitative and quantitative evidence suggests that many developing country officials have been bounded rational when learning about BITs by ignoring the risks of BITs until hit by their first claim. The fourth section considers two potential alternative explanations for the behaviour we observe. Most importantly, this leads us to identify a prediction which is unique to a bounded rationality approach, and test it using an augmented version of the dataset from Elkins, Guzman and Simmons’ (EGS)

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<sup>7</sup> Alvarez 2011, ch. 2.

<sup>8</sup> Jervis 1976; Reiter 1996; Vertzberger 1998.

<sup>9</sup> Meseguer 2006.

<sup>10</sup> As discussed in the conclusion, the learning process could very well have been different for developed countries.

highly influential paper on BIT-diffusion.<sup>11</sup> Finally, we conclude by discussing how our evidence is of relevance not just to studies of the investment regime, but also for other areas of IPE.

Before proceeding, however, it is important to stress that although the paper provides important hints as to why developing countries signed BITs - some of which seriously question underlying assumptions in existing accounts - this is not its main aim. Rather than offering a general account of the BIT-movement, we use it as a case-study to understand the broader question of how governments process information about the implications of their economic policies.

## **1. Learning about high-impact, low-probability events: the case of investment treaty arbitration**

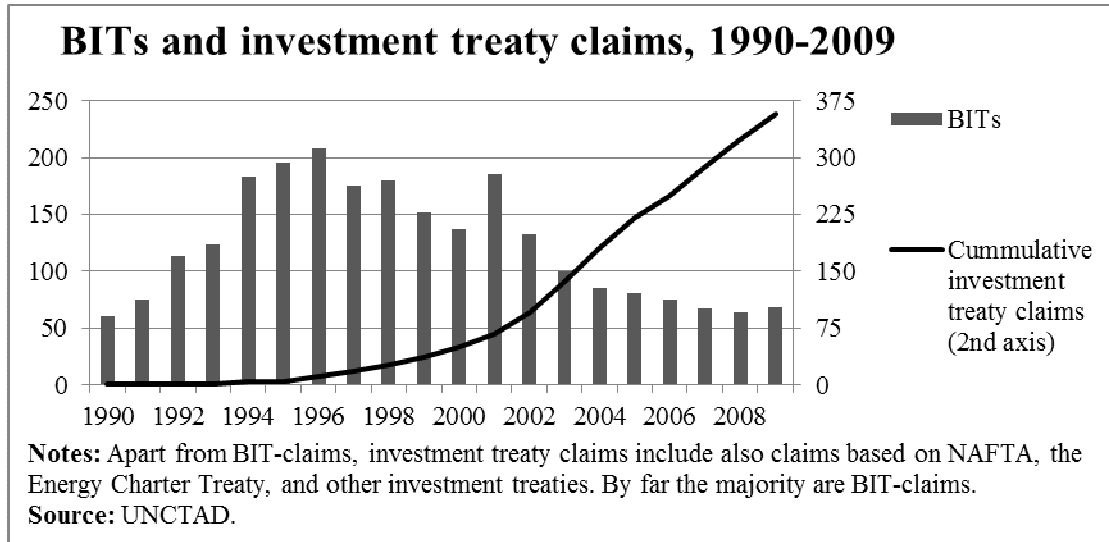
The starting point for our analysis of policy-learning is the observation that as the number of investment treaty arbitrations has grown; BIT-participation has slowed down considerably (figure 1).<sup>12</sup> While we know that the claims have led some countries to clarify and restrict the scope of their BITs - as even developed countries have been surprised about the potential breadth of key BIT-standards<sup>13</sup> - we ask a simpler question; namely how the rise of investment treaty arbitration has affected governments' decision to participate in BITs.

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<sup>11</sup> EGS 2006.

<sup>12</sup> The exception is 2001, which is likely due to UNCTAD's intense promotion of investment treaties that year, which resulted in more than 70 signed at various 'signing sessions'; UNCTAD 2002. The slowdown is clear also if one considers that some countries today prefer free trade agreements with investment chapters over BITs: in 2008, for instance, only 7 investment protection treaties other than BITs were signed, bringing the total number of investment treaties up to 81 - less than half of what was signed just ten years before.

<sup>13</sup> UNCTAD 2007; Yannacka-Small 2008, fn. 9 ('As was the case with the majority of BIT provisions, second thoughts only began to arise when arbitral tribunals began to shed light on these provisions.')



**Figure 1: BITs signed per year and total number of BIT claims**

Is it a coincidence that the rush to sign BITs slowed down as the treaties' adjudication mechanism became operational in practise?<sup>14</sup> And if it is not merely a result of saturation of relevant treaties to be signed,<sup>15</sup> how have developing country governments processed information about the risks of BITs revealed by the claims?

In order to understand whether, and how, the rise in arbitration claims has made countries learn about the risks of BITs, we first need to consider the nature of those risks. For while BITs have exposed some countries to costly arbitration proceedings with sometimes far-reaching ramifications, the probability that a given treaty would result in a claim was, until recently, very small. When modern BITs diffused rapidly during the 1990s, the decision to enter into the treaties was thereby an example of a policy that entailed costs with a high impact but a low probability.

When faced with low-probability events, a rational learner would be particularly careful to factor in the experiences of others. Per definition, low-probability events are unlikely to be part of a decision-maker's immediate past experiences. And since the costs of ignoring information are larger if it is *the only* information available, this makes decision-makers'

<sup>14</sup> Aaken 2010, 550.

<sup>15</sup> This has been suggested by Saban, Bonomo, and Stier-Moses 2010.

own experiences with low-probability events the ‘teacher of fools’.<sup>16</sup> So whether policy learning is a horizontal process – i.e. learning directly from other countries – or it is channeled through intermediaries, such as international organizations,<sup>17</sup> a rational government should carefully consider information revealed about the risks of BITs, when *other* countries become subject to investment treaty disputes.

An alternative explanation for the slow-down in BIT participation comes out of the bounded rationality literature. This suggests that rather than considering all relevant and available information, decision-makers tend to rely mostly on whatever information is salient at a given time.<sup>18</sup> So although information was easily available to developing about claims against other countries,<sup>19</sup> learning about the potential costs of the treaties may have been skewed by the application of the “availability heuristic”. This refers to the tendency of people to evaluate the probability of events based on the ease with which relevant instances come to mind.<sup>20</sup> While obviously a useful cognitive shortcut in many instances, this can also have a biasing impact on people’s judgments and behaviour, as it may lead to ignoring information that is relevant and attaching great value to some that is not.<sup>21</sup>

The availability heuristic is particularly important in cases such as ours because people tend to show bimodal responses to low-probability events: some greatly exaggerate them, and others assume they can ignore them completely, and the choice between the two reactions depends on the extent to which people can bring specific and ‘vivid’ instances to mind.<sup>22</sup> In the absence of highly ‘available’ information decision-makers thereby often fail to consider low-probability events fully until lightning strikes.<sup>23</sup> As hinted to above, this implies that while ‘muddling through’ and ‘satisficing’ may often be useful for bounded

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<sup>16</sup> March 2010.

<sup>17</sup> E.g. Simmons, Dobbin and Garrett 2006, 797-798.

<sup>18</sup> E.g. Weyland 2006.

<sup>19</sup> Most claims have been pursued under ICSID, where the Secretariat continuously kept its members informed about disputes before the centre both through publications as well as its technical advice. The United Nations also regularly sent out publications to member states on the potency of international investment agreements; e.g. UNCTC 1988; UNCTAD 1998, 1999. Note also that while BIT-claims began in the late 1980s/early 1990s, non-state actors have occasionally used international law to pursue compensation claims against host governments since the inter-war period; see generally Parlett 2011, ch. 2.

<sup>20</sup> Tversky and Kahneman 1973. See also, Simmons, Dobbin and Garrett 2006; Weyland 2006, 2009, 2010.

<sup>21</sup> Johnson et al. 2000.

<sup>22</sup> McClelland, Schulze, and Coursey 1993; Slovic et al. 2000, Slovic, Fischhoff, and Lichtenstein 2000a.

<sup>23</sup> Camerer and Kunreuther 1989; Kunreuther et al. 2002.



rational actors, they are particularly imprudent decision-strategies when learning about low-probability events as it can lead to optimism bias.<sup>24</sup> For instance, just as repeated safe driving experiences can lead people to never wear seat belts if they fail to consider the experiences of others,<sup>25</sup> an absence of investment treaty claims against a government in the past could lead to the misunderstanding that BITs may be far-reaching in theory but entail no risks in practice.

This is an important difference in the predictions of the two perspectives on policy learning: whereas rational policy-makers are expected to learn from *all* relevant experiences, policy-makers that apply inferential shortcuts when interpreting information are expected to learn much more from their own experiences, as that information is more readily available. This type of ‘narcissistic learning’ is therefore our second hypothesis for why we observe a slowdown in BIT participation. Just as individuals tend to insure against low-probability events *after* they have already been injured themselves,<sup>26</sup> developing countries may have displayed similar behavior in the investment regime by only seriously considering the risks of BITs, when they became subject to a BIT-claim *themselves*. Moreover, rather than merely underestimating the risks of BITs due to imperfect information, as could be explained by Bayesian learning, a bounded rationality framework implies that the risks were *entirely* ignored until hit by a claim.

Below we consider these two main hypotheses based on both micro-level evidence in the shape of a case-study, survey data, as well as macro-level quantitative evidence.

## 2. Qualitative evidence

### *The case of Pakistan*

As a first cut to investigate just how developing countries have learned about the implications of the investment treaty policies, we begin by briefly reviewing the case of Pakistan. Pakistan is useful for our purposes as it has participated in BITs for half a century, since it signed the first ever BIT with Germany in 1959. Also, Pakistan has signed

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<sup>24</sup> Camerer and Kunreuther 1989; Slovic, Kunreuther, and White 2000, 27.

<sup>25</sup> Slovic, Fischhoff, and Lichtenstein 2000b.

<sup>26</sup> Steinbrugge, McClure and Snow 1969.

numerous BITs since the early 1990s which allow investors direct recourse to investor-state arbitration, and governments in Pakistan have thereby had more than ample opportunities to learn about the implications of such treaties.

The first treaty-based investor-state arbitration against Pakistan was filed by a Swiss investor in 2001.<sup>27</sup> But while several investment treaty claims had been filed up through the 1990s questioning a wide range of government conduct, and Pakistan had been made explicitly aware of the potency of the treaties,<sup>28</sup> the claim in 2001 took everyone within the Pakistani bureaucracy by complete surprise. When learning about the dispute, Pakistan's Attorney General - one of the most learned experts on international public law in South Asia - actually had to look up 'BITs' and 'ICSID' on Google. And when inquiring with the relevant ministries, hardly any records existed of Pakistan's past BIT-negotiations with Switzerland. There were no files or documentation in any of the responsible ministries, and no indication that the treaty had ever been discussed in Parliament. In fact, the treaty itself was nowhere to be found, and the government had to request a copy from Switzerland through formal channels. For a legal instrument with such a considerable scope, this was somewhat of a mystery. Yet, the Swiss treaty was no exception, as hardly any records existed of Pakistan's past BIT-negotiations. This was not because they were considered too sensitive to document in written form. On the contrary, numerous interviews with current and past officials in Pakistan's BIT-negotiators confirm that when foreign delegations had come to the country, or the Pakistani leadership went abroad, BITs had merely been considered a piece of paper, something for the press - a token of goodwill.<sup>29</sup> While there was an expectation that the treaties would lead to increased inflows of investment, government files today admit that: '*BITs were initially instruments that were signed during visits of high level delegations to provide for photo opportunities...*'<sup>30</sup> It was thereby not until Pakistan was hit by a multi-million dollar arbitration claim that officials actually

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<sup>27</sup> *SGS Société Générale de Surveillance S.A. v. Islamic Republic of Pakistan*, ICSID Case No. ARB/01/13.

<sup>28</sup> Apart from reports provided by international organizations (see *infra* note 18), even a major Pakistani newspaper ran a series of articles on investment treaties written by a senior ICSID official; Parra 1996.

<sup>29</sup> Apart from the former Attorney General, interviews covered the Board of Investment, Pakistan's Embassy in Washington DC, the Ministry of Industries and Production, the Ministry of Finance, the Ministry of Law, the Ministry of Foreign Affairs, the Reserve Bank, and the Securities and Exchange Commission. Interviews were made in Lahore, Karachi, and Islamabad, January 2009 to August 2010.

<sup>30</sup> Communication between Pakistan's Board of Investment and Ministry of Law concerning re-negotiation of German-Pakistan BIT, November 23, 2009. On file with authors.

realized the implications of treaties signed by successive governments since 1959. In the following years, the Pakistani bureaucracy blocked numerous ongoing negotiations, including one with the United States. And while some embassies, politicians, and investment promotion officials are still pushing for Pakistan to sign BITs, some corners of the bureaucracy are now making the government aware that the treaties involve serious and far-reaching obligations. This politicization of BITs is a first in Pakistan's history.

The case of Pakistan thereby provides preliminary evidence in favor of our bounded rational learning hypothesis. It indicates that the risk of BITs were not just underestimated up through the 1990s, as could potentially be explained by a Bayesian framework due to imperfect information, instead they were ignored completely. And rather than learning from other countries' experiences, it had to take a claim against Pakistan itself for the bureaucracy to realize the potency of the treaties.

#### *A survey*

The experiences of Pakistan may of course be unique, so we proceed by surveying a broader sample of developing countries. From January 2009 to May 2011 thirty interviews were conducted with officials from thirteen developing countries (excl. Pakistan) from all corners of the world. By 2009, all countries had been respondents in at least one BIT-claim. Table 1 lists key sample statistics from the year the BIT-movement was at its peak, 1996. While spread over each region, sample countries are generally richer and had much larger inward and outward FDI stocks than most other developing countries. This is important as the opposite pattern could have slanted the sample in favour of a bounded rationality explanation (e.g. lack of expertise, lack of stake in the system; see also below).

	Share of total	Average	Median
<b>Inward FDI stock</b>			
Sample	24%	13.52	6.35
Developing countries	100%	4.60	0.55
<b>Outward FDI stock</b>			
Sample	28%	4.20	0.73
Developing countries	100%	1.78	0.11
<b>GDP</b>			
Sample	17%	77.41	23.34
Developing countries	100%	41.77	5.37
<b>Note:</b> All figures are in current bn. USD. Sample covers four countries from Asia, five from Latin America, two from Eastern Europe, and two from Africa.			
<b>Sources:</b> UNCTAD and World Development Indicators.			

**Table 1. Descriptive statistics of developing countries where one or more officials were interviewed, 1996**

Two types of officials were interviewed: negotiators and stakeholders.<sup>31</sup> The latter, refers to officials from government agencies whose discretion could be curtailed by BITs, and thereby had an incentive to take a somewhat cautious approach towards the treaties. Only negotiators who themselves were involved in past negotiations were included in the sample. Similarly, only stakeholders who were involved in investment protection policies during the 1990s were included. All interviews were semi-structured with the overall theme being the countries' experiences with negotiating and ratifying investment treaties.

Practically all officials – incl. stakeholders - noted that they were unaware of the far-reaching scope and implications of BITs during the 1990s, when the treaties proliferated. Although some did consider the standards on expropriation, for instance, few realized that the treaties had such a considerable reach and were enforceable not just in principle but also in fact. This contrasts with standard accounts of BIT-diffusion yet is not too surprising given the lack of disputes at the time, which is likely to have led developing countries – and others - to underestimate the risks of the treaties due to a lack of information (see above). However, officials did not simply underestimate the risks of disputes; instead many

<sup>31</sup> In most countries, the negotiation of BITs during the 1990s was done by very few officials – typically only one - as the treaties were almost completely 'de-politicized.' As one Latin American official noted, 'during the 1990s, BITs were a very different animal than FTAs, the WTO, and other globalization instruments. ... By contrast with FTA agreements, there was no legal review, control, or scrutiny to the content. ... Often BIT negotiations have been done by a couple of guys; they sent it to parliament with no real discussion... Apart from a copy of the BIT in the negotiator's office no one was even aware how many BITs the country had in the 1990s.' Interview with Mexican official, London, 26 May 2010.

ignored such risks and thereby treated BITs as one out of a long list of diplomatic gestures without *any* practical implications apart from helping to attract foreign investments. In 12 out of 13 countries interviewed, respondents thus noted that it was not until the first claim was filed against their country that stakeholders realized that BITs exposed them to serious liabilities (Table 2). In fact, in 8 out of 13 cases even negotiators did not realize that BITs involved far-reaching and enforceable obligations until their own country was hit by a claim.<sup>32</sup> While learning did take place on occasion, for instance through UNCTAD's training courses, the response from one Eastern European negotiator was representative: *'Negotiators really didn't know that the treaties had any bite in practice. They were neither aware of the costs or the fact that it could lead to arbitration.'*<sup>33</sup> So was the response from the Dominican Republic, where it was the first claim against the country in 2007 that made officials realise the potency of BITs: *'this led to a complete halt in negotiations, as we became aware we are legally liable.'*<sup>34</sup>

	Percentage of countries
<b>Stakeholders had not realised before first claim that BIT-obligations were far-reaching and enforceable</b>	92
<b>Stakeholders <i>and</i> negotiators had not realised before first claim that BIT-obligations were far-reaching and enforceable</b>	62

**Source:** 30 interviews with officials from thirteen developing countries conducted by one of the authors from January 2009 to May 2011. Officials were involved in BIT-negotiations currently or in the past, directly or from a management position.

**Note:** Sample covers four countries from Asia, five from Latin America, two from Eastern Europe, and two from Africa. Sample countries are generally richer than average developing countries and cover some of the greatest recipients and exporters of foreign capital. All countries had by 2009 been respondents in at least one BIT-claim.

**Table 2. Developing countries learning from their first BIT-claim.**

These findings are consistent with some of the few developing country experiences which have been discussed in public. For instance, a senior official notes that until Thailand was first sued in 2004, *'the realisation that an investor could invoke investor-state dispute*

<sup>32</sup> Investment treaties with the United States and Canada were somewhat different, as they included liberalization provisions, the implications of which were quite clear to negotiators and stakeholders.

<sup>33</sup> Interview with Czech official, Copenhagen, 28 April 2010.

<sup>34</sup> Interview with Dominican Republic official, Copenhagen, 17 May 2011

*settlement in a treaty was perhaps not fully appreciated.*<sup>35</sup> Similarly, in South Africa a recent government report notes that negotiators and stakeholders did not realize during the 1990s that the treaties had serious legal implications for the country, and not until South Africa came on the respondent end of a major claim in the early 2000s were the treaties taken seriously.<sup>36</sup> After this, senior officials in South Africa decided to considerably slow down the country's BIT-participation – particularly with developed countries.<sup>37</sup>

Similarly, there are indications that countries which have *not* been subject to BIT disputes still have a much more haphazard BIT policy than those that have. For instance, in his case study of India – a country otherwise so careful to guard its sovereignty – Ranjan notes that since BITs have not had adverse implications for the country thus far, stakeholders still assume they have no impact on India's regulatory flexibility.<sup>38</sup> Also, in the case of Libya this is a report on the BIT signed with Spain during Qadhafi's visit there in 2007:

‘... the Government of Libya (GOL) indicated ... that it wished to quickly finalize language for an education and culture agreement, a defense cooperation agreement, a bilateral legal cooperation and extradition treaty, an investment security agreement and a double taxation-exemption agreement. ... [A Spanish official, ed.] lamented that the rush to finalize agreements for signature in time for Qadhafi's visit had precluded meaningful bilateral discussions of what the two sides' understanding of those accords would mean and how they would be implemented.’<sup>39</sup>

The pattern is as expected: at the time, Libya had not been reported on the respondent end of an investment treaty claim, and it still rushed through the treaties alongside all sorts of other diplomatic agreements, such as on education and cultural exchanges, without any ‘meaningful bilateral discussions’. As the Spanish official remarked, ‘*The form is more important to the GOL than the substance.*’<sup>40</sup> This was as late as 2007, when almost 300 BIT claims had already been filed.

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<sup>35</sup> Mangklatanakul 2011, 82.

<sup>36</sup> DTI 2010.

<sup>37</sup> See further in Poulsen 2011, ch. 9.

<sup>38</sup> Ranjan 2012. Note, that BITs were used by foreign investors in the Dabhol claims against India, yet the dispute was primarily a commercial arbitration claim.

<sup>39</sup> ‘Qadhafi's travel to Spain,’ Report by American Embassy in Tripoli, 12 December 2007; *Wikileaks - 07TRIPOLI1033*.

<sup>40</sup> *Ibid.*

Naturally, it is important to stress that in some countries there were officials already in the late 1980s and early 1990s who realized that BITs subjected their country to enforceable and potentially far-reaching obligations. But these were the exception, not the rule. As Christoph Schreuer noted in his expert testimony in *Wintershall v. Argentina*:

‘...on the occasion of state visits when the heads of states need something to sign ... the typical two candidates in a situation like that are Bilateral Investment Treaties, and treaties for cultural co-operation. ... they are very often not negotiated at all, they are just being put on the table, and I have heard several representatives who have actually been active in this Treaty-making process ... say that, ‘*We had no idea that this would have real consequences in the real world*’.’<sup>41</sup>

The sections above confirm this observation. Unlike assumptions in standard accounts of the BIT-movement, many – perhaps most - developing country governments did not engage in sophisticated cost-benefit considerations but rather failed to even consider the risks of the treaties until they were hit by their first claim.

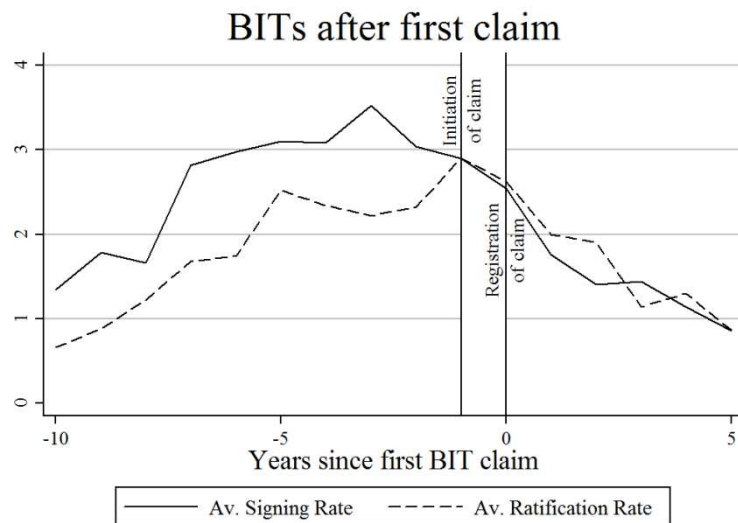
All in all, these qualitative findings provide evidence in favor of a bounded rational learning process and to further sustain this conclusion we proceed by triangulating the qualitative findings with quantitative evidence on BIT participation.

### 3. Quantitative evidence

Figure 2 uses an ‘event study’ to provide a preliminary visual assessment of the hypothesis that participation responded principally to claims against *themselves*. The y-axis shows the average annual number of BITs signed or ratified by developing countries which have had at least one BIT-based claim brought to arbitration. The x-axis shows time relative to the year of registration of the first BIT claim against the country in discrete (annual) intervals.

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<sup>41</sup> *Wintershall Aktiengesellschaft v. Argentina*, ICSID Case No ARB/04/14, Award, 8 Dec., 2008, par 85.



**Figure 2. BIT participation around time of first claim**

The pattern corresponds with the survey findings: while signing rates were already decreasing on average prior to the time of first claim, this downward trend amplified considerably after the claim was registered. Even more notable is that the upward trend in number of BITs ratified per year reverses in the year of the first claim.<sup>42</sup>

Yet, as supportive as Figure 2 is, we may still be concerned that the correlation between experience of a claim and decreased BIT participation is a spurious one, driven by omitted variables such as global shocks, changing norms towards foreign investors and investment treaties, national political or economic environment, and participation dynamics (such as the exhaustion of treaty-partner possibilities). To address these concerns we turn to the tools of econometrics.<sup>43</sup>

<sup>42</sup> Note that while it was irrational to entirely ignore the risks of BITs until hit by a claim, we are not arguing that the sizeable drop in BIT-participation is necessarily a rational response – in fact, a prediction from the bounded rationality literature would be that it could be overly drastic. Similarly, we are not arguing that entering into BITs is *inherently* irrational and therefore do not expect adoption to reach zero after the claim, particularly as developing countries are increasingly becoming capital exporters themselves and certain government agencies are bound to continue pushing for the treaties (cf. the case of Pakistan).

<sup>43</sup> The model proposed by Jandhyala, Henisz and Mansfield (2011) is an example of an alternative explanation which is consistent with Figure 2 but cannot explain our regression results below.



Our country-year panel data includes observations for 138 developing or transition countries over the years 1990-2009. For our purposes, we understand a developing or transition economy (henceforth merely referred to as developing countries) as one that the World Bank does *not* classify as a “high-income” country for the majority of our sample period. Apart from Western countries, this definition excludes countries such as South Korea, Singapore, and several Arab oil-exporting states. Although these countries have signed numerous treaties with Western countries, their role in BIT negotiations is arguably often that of capital exporters - particularly when negotiating with low-income countries.<sup>44</sup>

Based on the interview findings above, our principle empirical hypothesis is that of bounded rationality, i.e. that developing countries only tended to strongly decrease their participation in BITs in response to experiencing a BIT arbitration claim against themselves. We examine the statistical validity of this hypothesis by estimating the Negative Binomial fixed-effects model of Hausman, Hall, and Griliches,<sup>45</sup> with dependent and independent variables as in equation 1.

Our parameter of interest in equation 1 is  $\varphi$ .

$$f(BITs_{it+1} | BITClaim_{it}, X_{it}) = g(\exp(\varphi BITClaim_{it} + \alpha X_{it} + \eta_t)) \quad (1)$$

Where  $BITs_{it+1}$  is the number of new BITs participated in year  $t+1$ ,

$BITClaim_{it}$  is a dummy variable which is zero in years before the first BIT claim was lodged against country  $i$ , and 1 otherwise,

$X_{it}$  comprises FDI inflows, net FDI outflows, GDP, the investment risk index, and controls for previous BIT participation,

$\eta_t$  are year effects, and

$\varepsilon_{it}$  are idiosyncratic errors.

In the subsequent subheadings we discuss in detail each of the variables in equation 1, as well as our choice of estimator for the regression equation. Before proceeding with this,

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<sup>44</sup> Salacuse 1990.

<sup>45</sup> Hausman, Hall, and Griliches 1984.

however, it is worth noting that the structure of our regression approach differs from that in the leading models of BIT participation.<sup>46</sup> Our panel dataset is intentionally constructed of country-year observations, while the earlier papers have used country-pair (i.e. dyad)-year data. The dyad-year approach was necessary for comprehensive models of BIT participation which sought to test hypotheses about the impact on BIT formation of the relationship between treaty partners (e.g. income differences, colonial relations). In contrast, our hypotheses of interest are country-level. For this the dyad-year structure is not necessary. Furthermore, in the interest of space, we intentionally avoided the dyad-year models in order to keep our analysis focussed on our hypotheses of interest and avoid discussion of the many other variables included in the dyadic models. However, as a robustness check and to provide comparison with existing literature, we show that our results also hold using the dyadic data and models of EGS and Jandhyala, Henisz, and Mansfield (JHM).<sup>47</sup> The fact that our findings remain consistent across three different datasets and econometric approaches speaks strongly to the robustness of our result. As we discuss in Section 4, using the frameworks of EGS and JHM also allows us to demonstrate an auxiliary result which strengthens our conclusions regarding bounded rationality.

### ***Dependent variable(s)***

Based on UNCTAD's country-lists of BITs, our main dependent variable counts the number of BITs signed by a developing country in a given year. This is a standard measure for quantitative studies on the diffusion of BITs.<sup>48</sup> It is based on the simplified, yet reasonable, assumption that BITs are comparable in their substantive and procedural provisions.<sup>49</sup> One aspect where BITs *do* systematically and meaningfully vary, however, is in their dispute settlement provisions, since it wasn't until the late 1980s that BITs began, as a general rule, to give investors access to investor-state arbitration without first having

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<sup>46</sup> EGS 2006; Jandhyala, Henisz and Mansfield 2011.

<sup>47</sup> The EGS robustness check is presented in Section 4. The same exercise is repeated using the data and econometric approach of JHM in the Appendix.

<sup>48</sup> E.g. EGS 2006.

<sup>49</sup> The content of BITs is largely similar, and although some recent studies have coded BITs' content (Yackee 2008; Alle and Peinhardt 2010), they remain too restrictive or cover too few treaties to be useful for our purposes. Also, even when differences exist, they are often leveled out by the MFN provision, which combined with BITs' often broad definition of investors and investments provide ample opportunities for 'treaty-shopping,' which makes differences between BITs even less relevant in practice; Legum 2006; Schill 2009.

to exhaust local remedies.<sup>50</sup> Although occasionally overlooked by international relations contributions,<sup>51</sup> this difference is crucial as investment treaties would be largely irrelevant for foreign investors without their effective and comprehensive consent to investor-state arbitration.<sup>52</sup> We therefore restrict our sample to the period when the vast majority of BITs included a binding consent to investor-state arbitration, namely from 1990 onwards.

To check the robustness of our results we also use two alternative measures of BIT participation. The first is the number of BITs that came into force in a given year (hereafter referred to as ‘ratified BITs’). The advantage of this measure is that it captures the propensity to enter into BITs which are actually legally binding, while the disadvantage is that idiosyncratic ratification processes introduce measurement error.<sup>53</sup>

Our final measure of BIT participation is the number of BITs signed by a developing country in a given year which came into force (i.e. were ‘ratified’) within three years of being signed. Though novel, this measure combines the key strengths of each of the measures of participation commonly used in the literature. Like ‘ratified’ BITs, this alternative measure of participation has the advantage of not counting BITs which countries sign without the intention of making them legally binding. Similarly to ‘signed BITs’, this measure avoids the measurement error introduced in the ‘ratified BITs’ measure by idiosyncrasies in the (often lengthy) ratification process in each country. We chose three years as our cutoff as more than four fifths of BITs that have entered into force did so within three years of signature.<sup>54</sup>

### *Main explanatory variable*

Our explanatory variable of interest is a dummy variable that takes the value of one beginning the year a country was subject to its first BIT-claim – defined as the year the

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<sup>50</sup> Yackee 2008.

<sup>51</sup> E.g. EGS 2006; JHM 2011.

<sup>52</sup> Wälde 2005. It is unclear from arbitral decisions, to what extent investors can use MFN clauses to ‘import’ more favourable dispute settlement provisions from other treaties (Hsu 2006). This makes the specific wording of arbitration provisions particularly important to assess the protection granted in individual BITs.

<sup>53</sup> The vast majority of BITs come into force after the contracting parties have notified each other that their domestic requirements are met. Such requirements vary across countries, but in practice this often means that both national parliaments have to ratify the BIT before it enters into force.

<sup>54</sup> UNCTAD 2006.

claim was registered by the arbitral tribunal - and zero otherwise.<sup>55</sup> While our base regression includes only the relatively simple “first claim” dummy variable, we also considered more refined measures of BIT-claim experience, including: the number of claims a country has faced, the size of the award sought by the investor, BIT-related claims brought under other legal jurisdiction, and whether the host ‘lost’ the case. None of these refinements affect the base result – a finding which lends further support to our bounded rationality hypothesis.<sup>56</sup>

### *Other control variables*

A key component of our identification strategy is the inclusion of a full set of year dummies to control for global shocks shared by all countries, such as business cycles, changing global norms towards foreign capital (e.g. the rise and fall of the Washington Consensus), the global number of BITs, or the global number of BIT claims. Controlling for global BIT claims in this way means that the effects we observe are *additional* to any effect of claims against other countries. Thus if countries treated claims against other countries as being as informative as claims against themselves, or if they were merely responding to a secular shift in BIT-participation norms as suggested by JHM, we would expect to find zero effect from our variable of interest (own BIT claims).

Our base model also controls for a country’s FDI inflows and outflows as well as its market size/level of economic development proxied by GDP. We control for these macro-economic flows to account for the fact that the level of foreign investor interest in the host

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<sup>55</sup> The variable may have a small amount of measurement error, as the secrecy of some disputes adjudicated under non-ICSID rules, means we can’t be entirely sure when a country was hit by a BIT-claim for the first time. However, the vast majority of investment treaty awards have found their way to the public domain. Furthermore, even if we are missing the first claims for a few countries, it would make our results more conservative i.e. bias *against* finding an effect of the first treaty claim. Similarly, while the year a country was subject to its first BIT-claim is not necessarily the year it was first threatened with a claim, this also makes it more difficult to find an effect from first BIT-claims and therefore biases against evidence for bounded rational learning. Finally, a claim indicates the relevance of BITs for investment protection, and is therefore likely to lead to increased lobbying for BIT-formation by foreign investors not covered by treaty protections; so this too will make it less likely to find an effect of the first claim.

<sup>56</sup> The result regarding number of claims is in table 5, those for size and jurisdiction are in table A.3 in the Appendix. The result for ‘losing’ a claim is available in request from the authors but is not presented here as this variable is subject to significant measurement error due to out-of-court settlements, the many pending cases, as well as methodological concerns in construing a quantitative measure for when countries have actually ‘lost’ a claim.

may affect the number of BITs it can choose to sign.<sup>57</sup> We further control for investment risks (using the Political Risk Services Group Index), as a government with protectionist urges towards FDI may both be in higher risk of BIT-claims and at the same time less inclined to sign BITs. All of these explanatory variables are lagged one year to avoid simultaneity.

Finally we include a range of indicators to control for saturation, i.e. the fact that a slowdown in a country's BIT participation can be a function of the size of its existing BIT-network. Since a more extensive BIT network will also raise the probability of a claim (ceteris paribus) omitting previous participation would likely lead us to over-estimate the downward effects of claims. We therefore control for a cubic polynomial function of the cumulative number of BITs participated in (measured by signing or ratification according to the dependent variable in the regression). Additionally, since claims only arise from ratified BITs, we control for the cumulative number of BITs ratified with four and ten year lags in all estimations.

Summary statistics and sources all raw and constructed variables used in our analysis are provided in Table A.1 in the Appendix. Missing data for some series means that our base regression uses around 1600 of the potential 2740 observations.

### *Additional robustness tests*

Apart from robustness check to choice of estimator and specification of both the dependent and main explanatory variable, we also checked of the robustness of our findings to adding or removing other control variables. For instance, we removed – one at a time - any of the controls in our base regression which might potentially be endogenous or cause other forms of bias. Also, we checked the robustness of our results to the inclusion of two additional controls. Firstly, using the World Bank's database on political institutions,<sup>58</sup> we captured possible partisan biases by including a dummy variable indicating whether a

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<sup>57</sup> For example, controlling for FDI flows means that our results will not be biased by any decreased investor interest in the host which the work of Allee and Peinhardt (2011) suggests may be caused by BIT claims.

<sup>58</sup> Beck et al. 2001.

country's executive and/or majority party was left-wing. Secondly, we checked for whether a country's BITs have been used to adjudicate claims against other countries: for while only few developing country investors have filed BIT-claims, the rising stocks of investment from developing countries mean they increasingly have an interest in not just attracting investment from the West but also protect their own investors abroad. In the interest of space we do not present these results here, however, as neither control had any appreciable explanatory power or impact on other coefficients.<sup>59</sup>

### *Augmented models and ancillary questions*

As many countries experienced their first investment treaty claim around the same time, we include specifications which control for cross-border learning effects by including dummy variables for whether a country within the same region has been hit. This is a much simpler approach than EGS, for instance, who include complex (and highly data dependent) diffusion measures based on ambitious assumptions of highly advanced BIT-strategies.<sup>60</sup> Based on our interviews, we are less optimistic about the sophistication of developing country strategies in the international investment regime and therefore limit learning effects to countries within the same region. Note again, however, that any observed impact of this variable is *over and above* the impact of the global number of claims (i.e. also claims far away).

Finally, we studied specifications which distinguish between BIT partners. For although BITs are largely comparable in their legal content, hundreds of BITs have been signed between countries which exchange next to zero investment flows. While legally binding, and at times relevant through the MFN provision, these treaties are rarely important in practice. Similarly, since by far the majority of claims (still) involve Western investors suing developing country governments, we distinguish between North-South and South-South BITs. We also use an alternative classification, where only South-South treaties

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<sup>59</sup> Results available from the authors upon request.

<sup>60</sup> EGS 2006.

which do not have a major developing country capital exporter as one of the contracting parties are considered ‘frivolous’ BITs.<sup>61</sup>

### ***Results***

Table 3 reports coefficients from our base specification. The dependent variables from left to right are respectively the annual number of BITs signed, ratified, and signed and then ratified within 3 years. In all three columns the effect of having at least one BIT claim is negative and we are able to reject the null of positive or no effect at the 5% significance level or better.<sup>62</sup> The experience of a BIT claim reduces signing by around 35% and ratification by somewhat less with around 17%.<sup>63</sup> This provides strong support for our hypothesis that when a country is subject to at least one BIT claim it reduces its participation in BITs considerably; and that this effect is over and above any effect from observing claims against other countries. While one could think of a number of reasons we observe this statistical result, the underlying causal process was made clear from the qualitative evidence above: although in some cases developing countries may have learned about other countries’ experiences – either directly or via intermediaries – many failed to consider the risks of BITs until hit by a claim themselves.<sup>64</sup>

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<sup>61</sup> This measure was constructed by taking the country’s outward FDI stock as a share of the total developing country sample outward FDI stock and calculated the maximum, average, and median shares. Top 10 from each were then considered large developing country capital exporters.

<sup>62</sup> The one-sided nature of the t-test for our null allows us to reject the null at 5% level of significant even in the regression with ratification as the dependent variable.

<sup>63</sup> E.g.  $1 - \exp(-0.423) = 0.34$ . Note that, as expected, the results are weaker when ‘ratification’ is the dependent variable due to the idiosyncratic differences.

<sup>64</sup> Similarly, Haftel and Thompson (2012) find that while countries’ own experiences with disputes increase chances that they will renegotiate BITs, experiences of other countries have no such effect.

	<b>Signing</b>	<b>Ratifying</b>	<b>Sign &amp; Ratify</b>
<b>L.BIT Claim</b>	-0.423*** (0.107)	-0.187* (0.112)	-0.463*** (0.144)
<b>L.Inward FDI</b>	-0.016 (0.011)	0.009 (0.011)	-0.030** (0.014)
<b>L.Outward FDI</b>	-0.011 (0.014)	-0.006 (0.013)	0.016 (0.020)
<b>L.GDP</b>	0.001** (0.001)	0.001 (0.001)	0.002*** (0.001)
<b>L.Invest.Protect.</b>	0.071*** (0.022)	0.092*** (0.025)	0.067** (0.028)
<b>Constant</b>	2.260*** (0.494)	2.467*** (0.555)	-2.021** (0.885)
<b>Observations</b>	1604	1524	1448

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Participation is measured by signing in column 1, ratification in column 2, and column 3 measures BITs signed in that year which were ratified within 3 years. Sample size varies across columns as countries for which dep. var. is always zero are dropped. Table reports coefficients from negative binomial, fixed effect estimation; standard errors in parentheses. Year dummies and cubic function of lagged total BIT participation as well as four and ten year lags of ratification also included but coefficients not reported. All other controls are lagged one year.

**Table 3. Strong negative effect of first BIT claim on participation in BITs by developing countries.**

While our results are backed up by interviews with government officials themselves, we may still be concerned that the statistical correlations are driven by a tendency for first claims to occur after BIT-participation has already started to decline. The graphical ‘event-study’ in Figure 2 provides suggestive evidence that – to the extent participation was already in decline – the first claim exaggerated this trend. Table 4 provides regression-based evidence to further support this and thus allay the concern that our results are driven by spurious correlation with some underlying trend toward decreased participation. In the interests of space the results are presented only for signing as the dependent variable. Signing was chosen over ‘Signed and Ratified’ since the two measures have very similar results but the former is more consistent with the existing literature on BIT participation. Columns 1-5 in Table 4 control respectively for 2 years prior to the registration of the first BIT claim through to 2 years after the BIT claim is lodged. If our BIT claim dummy were picking up some spurious trend, we would expect all the coefficients on the different leads and lags of BIT claims to be similar. Instead we find that the coefficients in the year of the



BIT claim and the two subsequent years are roughly twice as large as those in the two years prior.

	(1)	(2)	(3)	(4)	(5)
<b>F2.BIT Claim</b>	-0.134 (0.098)				
<b>F.BIT Claim</b>		-0.158 (0.010)			
<b>BIT Claim</b>			-0.325*** (0.103)		
<b>L.BIT Claim</b>				-0.423*** (0.107)	
<b>L2.BIT Claim</b>					-0.302*** (0.110)
<b>L.Inward FDI</b>	-0.028*** (0.011)	-0.018* (0.011)	-0.017 (0.011)	-0.016 (0.011)	-0.017 (0.011)
<b>L.Outward FDI</b>	0.000 (0.016)	-0.012 (0.015)	-0.012 (0.014)	-0.011 (0.014)	-0.011 (0.014)
<b>L.GDP</b>	0.002*** (0.001)	0.001*** (0.001)	0.001** (0.001)	0.001** (0.001)	0.001** (0.001)
<b>L.Invest.Protect.</b>	0.064*** (0.022)	0.072*** (0.022)	0.069*** (0.022)	0.071*** (0.022)	0.073*** (0.022)
<b>Constant</b>	2.500*** (0.520)	2.078*** (0.493)	2.173*** (0.492)	2.260*** (0.494)	2.205*** (0.497)
<b>Observations</b>	1518	1604	1604	1604	1604

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Dependent variable is the annual number of BITs signed. Table reports coefficients from negative binomial, fixed effect estimation; standard errors in parentheses. Year dummies and cubic function of lagged total BIT participation as well as lags of ratification also included but coefficients not reported. All other controls are lagged one year.

**Table 4. Timing of significant reduction in participation coincides with first BIT claim**

Furthermore, the coefficients on BIT-claim one and two years prior (columns 1 and 2) are not significant at the 10% level, while the coefficients in columns 3-5 are negative and significant at the 1% level. These results correspond well with Figure 2 and provide strong evidence that the structural break in participation behavior coincides with the registration of the first BIT claim.

Being confident of the robustness of our primary result, we now consider ancillary questions. Table 5 examines the impact of increasing numbers of claims against a host and of claims against countries in the same region. In all specifications in Table 5 we see that

the total number of BIT claims (Cum. BIT claims) is only very weakly negatively correlated with participation, suggesting that learning about the potential of BITs occurs primarily in response to the first BIT claim. This corresponds well with the predictions of bounded rationality, namely that a single ‘vivid’ event often has a considerably greater impact than expected by Bayesian frameworks. The latter would predict that each additional claim reveals further information about the risks BITs entail, yet this is not what we find.

	(1)	(2)	(3)	(4)
<b>L.Cum. BIT Claims</b>	-0.018 (0.019)	-0.003 (0.016)	-0.003 (0.016)	0.010 (0.016)
<b>L.BIT Claim</b>		-0.419*** (0.110)	-0.416*** (0.111)	-0.393*** (0.110)
<b>L.Region BIT Claim</b>			-0.015 (0.098)	0.010 (0.097)
<b>L.Region cum.BIT Claims</b>				-0.011*** (0.004)
<b>L.Inward FDI</b>	-0.018* (0.011)	-0.016 (0.011)	-0.016 (0.011)	-0.017 (0.011)
<b>L.Outward FDI</b>	-0.012 (0.015)	-0.011 (0.014)	-0.011 (0.014)	-0.011 (0.014)
<b>L.GDP</b>	0.001*** (0.001)	0.001** (0.001)	0.001** (0.001)	0.001** (0.001)
<b>L.Invest.Protect.</b>	0.071*** (0.022)	0.071*** (0.022)	0.071*** (0.022)	0.073*** (0.022)
<b>Constant</b>	2.036*** (0.497)	2.253*** (0.495)	2.272*** (0.509)	2.808*** (0.541)
<b>Observations</b>	1604	1604	1604	1604

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Dependent variable is the annual number of BITs signed. Table reports coefficients from negative binomial, fixed effect estimation; standard errors in parentheses. Year dummies and cubic function of lagged total BIT participation as well as lags of ratification also included but coefficients not reported. All other controls are lagged one year.

**Table 5. First claim against a country matters but cumulative number of claims does not, while cumulative claims in the region matter and first claim does not.**

Columns 3 and 4 of table 4 examine the response to claims against other countries in the same region. Interestingly the pattern is reversed here: countries show little response to the first claim in the region, but do seem to respond to the cumulative average number of claims per country in the region. This is not too surprising: claims against other countries in the region are likely to elicit significantly less of an emotional response for policy-

makers than claims against their own country. Thus our result suggests that, consistent with theories of bounded rationality, policy learning is more ‘rational’ when the emotional content of the information is lower.

Finally, Table 6 addresses the question of whether participation in ‘serious’ BITs responds in the same way as participation in more ‘frivolous’, or ‘photo-opportunity’, BITs. The perceived benefits of participation in BITs for countries can range from apparently minor ones such as ‘having something to do’ when a dignitary from another country visits through to the potential attraction of much-needed high-technology investment.<sup>65</sup>

	(1) North-South BITs	(2) South-South BITs	(3) Serious BITs	(4) Photo ops.
<b>L.BIT Claim</b>	-0.373** (0.170)	-0.257** (0.125)	-0.421*** (0.150)	-0.198 (0.136)
<b>L.Inward FDI</b>	-0.044*** (0.017)	-0.024* (0.013)	-0.030** (0.014)	-0.025* (0.014)
<b>L.Outward FDI</b>	-0.067** (0.026)	-0.018 (0.015)	-0.051** (0.022)	-0.021 (0.016)
<b>L.GDP</b>	0.003*** (0.001)	0.003*** (0.001)	0.002*** (0.001)	0.003*** (0.001)
<b>L.Invest.Protect.</b>	0.093*** (0.033)	0.063** (0.025)	0.059** (0.028)	0.086*** (0.029)
<b>Constant</b>	3.114*** (0.778)	3.186*** (0.509)	2.890*** (0.664)	2.974*** (0.551)
<b>Observations</b>	1558	1595	1558	1538

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Dependent variable is the annual number signed of the type of BITs described in the column heading. ‘Serious’ BITs are either North-South BITs or South-South BITs where at least one party is a major capital exporter. ‘Photo-op’ BITs are South-South BITs between countries which are not major capital exporters. Table reports coefficients from negative binomial, fixed effect estimation; standard errors in parentheses. Year dummies and cubic function of lagged total BIT participation as well as lags of ratification also included but coefficients not reported. All other controls are lagged one year.

**Table 6. Participation in BITs with potentially significant economic implications is more affected by claims than participation in ‘photo-opportunity’ BITs.**

Similarly, the potential costs of BITs may appear negligible – for example if there is almost no inflow of FDI ever likely from the partner country – or they may be substantial – for example if there are substantial amounts of investment from the partner in high political-risk sectors. So if our results are purely driven by a slowdown in BITs with few, if

<sup>65</sup> The latter is questionable. For recent studies see Aisbett 2009, Yackee 2010, and Poulsen 2010.

any, considerable implications (except through the MFN clause) our analysis may have little relevance for the investment regime overall. Yet, Table 6 shows that this is not the case. While participation in all types of BITs responds negatively to a claim, the impact is strongest for BITs with the largest potential economic implications.

#### **4. Alternative explanations based on full rationality**

Our findings thus far have provided robust evidence of highly narcissistic learning about treaty claims - consistent with the bounded rationality framework. In this final section we consider the extent to which our findings might be explained using two leading alternative models, namely: full rationality with full information, and full rationality with imperfect information.

##### ***Full rationality with full information***

If negotiators pursued BITs primarily in response to individual interests – e.g. larger budgets, facilitating travels abroad - perhaps they actually did know about the implications of BITs, yet the political costs of pursuing them for their selfish reasons simply became too high once the claims began. We find this explanation unlikely. First of all, it would have to rest on a major conspiracy, given that *all* stakeholders interviewed have stated independently of each other that most developing countries failed to fully consider the risks of BITs until they were hit by their first claim. Even some official reports and internal documents admit this (see above). This is important as a number of stakeholders have often had an individual interest in cautious BIT-strategies. These include legal officers vetting the treaties, whose careers could be at stake if misinforming their principals about their international legal obligations; finance ministries, who would often have to ‘pay the bill’ in case of disputes; or regulatory agencies, whose autonomy would be constrained. However, all feedback from officials indicated that BITs have typically been completely non-politicized in national policy-making processes and hardly any stakeholders got involved in BIT-policies until the first claim hit. This is difficult to explain using a public choice framework.

### ***Full rationality with imperfect information***

There is another potential explanation, however, which may intuitively carry more weight. If we acknowledge that some degree of learning from own experiences is indeed rational - even when faced with low-probability events - then bounded rational and Bayesian learning models may in fact be observationally equivalent.

A rational stakeholder would know that the probability of a claim depends on a large number of factors including the investment and governance profile of the country. She therefore knows that a claim against her own country, or a similar (e.g. neighboring) country, provides more information about the probability they will face future claims than a claim against a more 'distant' country. Thus a rational but imperfectly-informed stakeholder would react more strongly to claims close by - and stronger still to claims at home - than they would to more distant claims. Thus the difference between the Bayesian and bounded rational learning models in this regard remains one of degree. Taking this logic one step further, Meseguer argues that "*bounded learning and rational learning yield the same results as soon as one drops the rational learning assumption that there are zero costs to gathering new information.*"<sup>66</sup>

In this respect we agree with Conlisk, however, who points out that there is no inherent reason why information costs should be a more logical assumption than cognition costs *a priori*.<sup>67</sup> Also, while we do not disagree with Meseguer's conclusion of observational equivalence in the context of her specific case-study, we find it unlikely that a rational learner would react so strongly to the first claim at home while completely ignoring the first claim in the region, as we found in the statistical analysis. We also find it unlikely that a rational learner would react strongly to the first claim against their country rather than learning progressively from subsequent claims. Moreover, unlike Meseguer who almost exclusively relies on econometric evidence, we have presented interview feedback on the *process* with which developing countries have learned about BITs, which clearly indicated bounded rational learning. For, while it may not have necessarily violated standard

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<sup>66</sup> Meseguer 2006, 1.

<sup>67</sup> Conlisk 1996.

expected utility theory if governments underestimated the risks of BITs, only bounded rationality can explain why they were ignored completely.<sup>68</sup>

Finally, even if this does not convince skeptics of the added-value of a bounded rationality framework, the bilateral nature of our case-study allows us in a last robustness test to provide a clear rational baseline, which other studies have had difficulties providing. Existing international relations literature on policy learning tends to focus on unilateral policy decisions involving only one country.<sup>69</sup> Yet this provides only one dimension of ‘relevant’ information, which in turn makes it difficult to distinguish bounded and fully rational learning. BITs, in contrast, are bilateral, which means that there are potentially two dimensions of relevance, or ‘distance’, of a piece of information: one in relation to the ‘host’ country, and one in relation to the partner country, and on their sensitivity to this second dimension of distance the fully and bounded rational learners will differ even more than the first. Analogously to the case of closeness for the host country, a fully-rational policy-learner will place more weight on cases brought by investors from the potential BIT-partner than it will on other cases. This is rational since the probability that claims are brought by a certain country is likely to vary with the amount and type of outward investment of the country, the experience of home country lawyers in bringing BIT claims, etc. In contrast, a bounded rational learner may ignore the readily available information about BIT-claims brought by investors from the potential partner country. The availability heuristic will not apply in the same way as with claims against the host since claims brought by the partner are not as ‘vivid’. Thus, on the question of how BIT participation responds to claims brought by potential partner countries, bounded and full rational learning models are not observationally equivalent.

In order to test our competing hypotheses with regard to claims brought by the potential partner, we make use of the datasets and empirical methodologies of the two leading papers on BIT-diffusion; Elkins, Guzman and Simmons (EGS, 2006) and Jandhyala, Henisz, and Mansfield (JHM, 2011). Both papers use country-dyad datasets and a survival analysis approach to examine the determinants of BIT-formation between partners. Since

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<sup>68</sup> See again e.g.; Camerer and Kunreuther 1989.

<sup>69</sup> E.g. Weyland 2006; Meseguer 2009; Gilardi, Fuglister, and Luyet 2009.

the findings are so similar, and in the interests of space, we present and discuss the results for the EGS dataset here (see Table 7) and those for the JHM dataset in the Appendix (see Table A.4). Table 7 reports the estimated odds ratios for EGS’s main explanatory variable of interest and for our explanatory variables of interest.<sup>70</sup> In the first column we reproduce EGS’ preferred regression and obtain exactly the same estimated odds ratio on their main variable (BITs among export product competitors) as reported in their paper.<sup>71</sup> The odds ratio is greater than one, and statistically significant, which EGS interpret as evidence in favor of their rational, competition-driven theory of BIT-diffusion. In column 2, consistent with our main regressions, we restrict the sample period to post-1989 – the period in which BITs actually had some legal ‘bite’. We include this column to show that this change alone causes the odds ratio for EGS’s export competition variable to no longer be statistically significantly different from one.<sup>72</sup> We are agnostic about this finding, however, as we are not disputing that developing countries have signed BITs primarily in an attempt to attract foreign investment (see Conclusion). Also, responding to behavior of “competitors” is potentially consistent with both fully-rational and bounded-rational learning models.

In column 3 of Table 7 we add our “BIT-claim” explanatory variable of interest, as well as an unrestricted quadratic in total BITs signed by the host to control for previous BIT participation. As such, column 3 tests whether our main result is robust to the use of an alternative dataset and entirely different econometric approach. The odds ratio on our BIT-claim variable is 0.786 and statistically significantly different from 1. Thus, our finding that a BIT-claim decreases participation is robust to the use of a dyadic modeling approach.

In column 4 of Table 7 we add controls for a claim by investors from the potential partner country, as well as an unrestricted quadratic in previous partner-country BIT signing. These additions further decrease the odds ratio on our BIT-claim variable, thereby

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<sup>70</sup> Other variables as per the footnote to Table 7 – including all variables which are in EGS Table 2, model 2 - are included in the regression but results are not reported in the interest of space. Full results are available on the author’s websites. Note that our switch from reporting coefficients (as per earlier tables) to odds ratios here is in the interest of consistency with the way the results are reported in EGS.

<sup>71</sup> We report results based on model 2 in Table 2, EGS. We chose model 2 since it was empirically the strongest model favouring EGS’ hypothesis of competition-led diffusion of BITs. Results based on the other models in Table 2 are qualitatively the same and are available from the authors on request.

<sup>72</sup> An odds ratio of one suggests that the variable has no effect on the survival rate (i.e. the probability of BIT formation at a given point in time).

strengthening our main claim. In contrast, the odds ratio for the variable indicating a BIT-claim has been launched by investors from the potential partner country is greater than one – though this difference is not statistically significantly different from one. This is consistent with our prediction based on bounded rationality and again follows directly from the interview feedback: officials involved in investment treaty policy-making often ignored the readily-available information about investment claims involving other countries until they themselves were hit by a claim.

	(1)	(2)	(3)	(4)
<b>BITs among export product competitors</b>	1.111 <sup>***</sup> (0.038)	1.026 (0.039)	1.013 (0.040)	0.967 (0.040)
<b>BIT claim against (host)</b>			0.786 <sup>*</sup> (0.097)	0.763 <sup>**</sup> (0.095)
<b>BIT claim by (source)</b>				1.017 (0.137)
<b>Years included</b>	1960-2000	1990-2000	1990-2000	1990-2000
<b>Observations</b>	208610	63461	61222	60083

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Exponentiated coefficients (hazard ratios) from Cox proportional hazards model; standard errors in parentheses. Column 1 of this table reproduces the results of ‘Model 2’ of Table 2 in EGS (2006) with updated dataset provided by EGS. ‘BITs among export product competitors’ is defined in EGS’ article. Full set of controls included from EGS, but not reported. A full set of results showing coefficients for all variables in the regression is available from the authors’ websites. Column 2 of this table restricts EGS’ regression to 1990-2000. Columns 3 and 4 add controls from our data for BIT participation (quadratic function) and claims for host and home/partner.

**Table 7. Using the dataset of Elkins, Guzman and Simmons (EGS) (2006) we show in a bilateral setting that claims against host significantly reduce likelihood of BIT-formation while claims brought by investors from partner have no effect.**

## Conclusion

Developing countries have behaved ‘predictably irrational’ in the international investment regime. By following the availability heuristic, many have been excessively narcissistic when learning about the risks of BITs. Apart alerting about potential optimism bias among countries yet to experience their first BIT-claim, these findings could have broader implications.



First of all, unlike several earlier international relations studies on bounded rationality, we were able to address the important critique of Meseguer, who argues that the large degree of observational equivalence between bounded rationality and Bayesian models renders the former an unimportant complication for international relations.<sup>73</sup> Evidence against the accusation of observational equivalence is mounting in economics,<sup>74</sup> and we found clear evidence against it in the international relations context as well.

Secondly, unlike in economics and political science, IPE analysts ‘... *have shown impressive resistance to the bounded rationality literature and its implications.*’<sup>75</sup> Ours is one of a few studies beginning to fill this gap,<sup>76</sup> which all beg the question of whether it is time to make bounded rationality a core area of interest for IPE? While of potential use for constructivist approaches,<sup>77</sup> this would be closely aligned with traditional rationalist literature studying how governments have pursued their (self-perceived) interests to the best of their ability.<sup>78</sup> But unlike contributions based on comprehensive rationality, it would do so taking cognitive constraints seriously.

For instance, a standard assumption in much rationalist IPE literature is that actors loosing from a policy will lobby against it.<sup>79</sup> But this didn’t happen for a long time in the investment regime due to information processing biases amongst stakeholders. Might this finding hold in other areas as well, such as the regulation of ‘fat-tailed’ risks in international financial markets for instance? Similarly, we have focused on the role of the availability heuristic, but other heuristics – such as those of representativeness and anchoring – could also be important in explaining systematic patterns in economic diplomacy.<sup>80</sup>

Parallel observations could be made about the settlement of international economic disputes. Behavioral approaches have become an established tradition in (particularly

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<sup>73</sup> Meseguer 2006.

<sup>74</sup> Camerer 2004; Thaler 2005; Camerer, Loewenstein, and Rabin 2006.

<sup>75</sup> Odell 2002, 178. See also, Elms 2008.

<sup>76</sup> Walter and Willett 2011; Hafner-Burton et al. 2011, 2012.

<sup>77</sup> See, for instance, Herrera’s use of bounded rationality as a bridge to constructivism; Herrera 2007, ch. 2. See also; Abdelal, Blyth, and Parsons 2010, 10-11;

<sup>78</sup> Weyland 2006, ch. 2. See e.g. Simon’s notion of ‘intended rationality’; see Simon 1957.

<sup>79</sup> Lake 2009, 226.

<sup>80</sup> See e.g.; Hafner-Burton et al. 2012.

American) domestic legal studies,<sup>81</sup> but have yet to be applied to adjudication under international economic law. But why should WTO panels, investment treaty tribunals, or other international adjudicative bodies not be subject to the same biasing heuristics as domestic courts?

Our findings also have more specific implications for the study of the international investment regime. For while we have refrained from offering a general theory of BIT-adoption in this paper, our results imply that a bounded rationality framework could provide important hints as to why, and how, developing countries signed BITs in the first place. Although not necessarily seeking to refute the claim that many capital-importing countries have used modern BITs in an attempt to attract or retain capital,<sup>82</sup> a bounded rationality approach would query just how careful government actors have been in the process.<sup>83</sup> From this perspective, negotiators and stakeholders would not be as rigorous in assessing potential costs and benefits as assumed in optimizing frameworks, even if it would appear to be in their country's interest to do so.

One potentially important topic in this respect is whether systematic biases in decision-making have varied with endowment of expertise in relevant government agencies?<sup>84</sup> As expertise is essentially a response to cognition costs, it is difficult to incorporate into theory without reference to bounded rationality.<sup>85</sup> And while experts are also prone to biased judgments, their prior knowledge reduces the biasing effects of heuristics,<sup>86</sup> which makes expertise a potentially important intervening factor to understand the scope conditions of a bounded rationality framework.<sup>87</sup> So perhaps developing country governments have been more prone to biased processing of information about the implications of BITs than developed country counterparts with higher levels of

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<sup>81</sup> Sunstein 2000.

<sup>82</sup> Guzman 1998; EGS 2006; Bubb and Rose-Ackeman 2007; Montt 2009; Pinto, Pinto, and Stier-Moses 2011; Swenson 2009.

<sup>83</sup> On the role of bounded rationality in institutional choice, see generally; Weyland 2006; Jupille and Snidal 2005.

<sup>84</sup> On the lack of expertise among officials in developing countries dealing with investment treaties, see e.g.; UNCTAD 2008; Poulsen 2011.

<sup>85</sup> Conlisk 1996.

<sup>86</sup> Neale and Bazerman 1991, 96.

<sup>87</sup> Weyland 2006, 60; Hafner-Burton et al. 2011.

administrative capacity. This goes also for the content – or design – of BITs; an issue we have left largely unexplored in this paper.

Other extensions of our findings could follow from the fact that arbitration claims have made stakeholders better realize their own interests, and thus become increasingly involved in the BIT-adoption process. Partly as a result, governments have been less keen on signing the treaties and particularly hesitant about ‘serious’ - and thus potentially costly - BITs with capital-exporting states. This increased politicization of BITs touch on a fundamental question of political science, namely whether more participants in the policy-making process reduce the aggregate impact of individual biases?<sup>88</sup> If they do, then bounded rationality insights could be less relevant for the political economy of BITs today, than in the past when only few officials were involved with the treaties. Yet, there is no inherent reason to think that cognitive constraints which are systematic would cancel out in the aggregate.<sup>89</sup> And even if they do, the high turn-over in many developing country bureaucracies<sup>90</sup> may make the risks of BITs gradually less ‘vivid’ for stakeholders without personal experience with claims in the past, and thus potentially ‘de-politicize’ the BIT-adoption process once again.

Whether complementing standard IPE models, or as stand-alone explanatory frameworks, these are important questions arising from insights on bounded rationality that future studies might consider.

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<sup>88</sup> This remains an open question; Jones 1999, 307.

<sup>89</sup> E.g.; Healy and Malhotra 2009.

<sup>90</sup> Weyland 2006; Busch, Reinhardt, and Shaffer 2009.

## APPENDIX: *Statistics, econometrics and robustness tests*

Variable	Description/measure	Mean	SD	Min	Max	N	Source
BIT claim	1 if country has been subject to a BIT claim, 0 otherwise.	0.19	0.39	0	1	2740	(I)
Cumulative BIT claims	Cumulative BIT claims.	0.57	2.57	0	51	2740	(I)
Signed	Annual BITs signed.	1.23	2.03	0	17	2740	(II)
Cumulative signed	Cumulative BITs signed.	16.16	18.89	0	124	2740	(II)
Ratified	Annual BITs coming into force.	0.90	1.74	0	15	2740	(II)
Cumulative ratified	Cumulative BITs coming into force.	11.18	15.06	0	97	2740	(II)
Signed and ratified	Annual BITs signed which came into force within three years.	0.73	1.55	0	15	2740	(II)
Cumulative signed and ratified	Cumulative BITs signed which came into force within three years.	8.63	11.32	0	85	2740	(II)
FDI inflows	Net inflows, BOP, bn. current USD.	1.64	6.90	-4.75	148	2471	(III)
FDI outflows	Net outflows, BOP, bn. current USD.	0.44	3.21	-3.51	67.68	2101	(III)
GDP	Bn. current US USD.	56.93	197.21	0.08	4330	2494	(III)
Investor protection	Investment risk profile index from 0 (very high risk) to 12 (very low risk).	6.91	2.34	0	12	1949	(IV)
Regional BIT claim	1 if a country in same region has been subject to a BIT-claim, 0 otherwise.	0.73	0.45	0	1	2740	(I)
Cumulative regional BIT claims	Cumulative BIT-claims in region.	9.27	16.53	0	91	2740	(I) & (V)
North-South BITs signed	Annual BITs signed with developed countries.	0.47	0.96	0	8	2740	(II)
South-South BITs signed	Annual BITs signed with developing countries.	0.76	1.48	0	15	2740	(II)
'Serious' BITs signed	Annual BITs signed with developed countries or developing countries with large outward capital stocks.	0.62	1.16	0	8	2740	(II) & (III)
'Photo-op' BITs signed	Annual BITs signed with developing countries with small outward capital stocks.	0.60	1.29	0	15	2740	(II) & (III)

**Sources:** (I) [unctad.org/iia-dbcases](http://unctad.org/iia-dbcases), [worldbank.org/ICSID](http://worldbank.org/ICSID), [ita.law.uvic.ca](http://ita.law.uvic.ca), and [iareporter.com](http://iareporter.com); (II) UNCTAD; (III) IMF IFS; (IV) PRS Group; (V) UN Millennium Development Goals Regional Groupings.

**Notes:** Sample covers 137 developing and transition economies from 1990 to 2009.

**Table A.1. Summary statistics**

### *Choice of Estimator*

Since our dependent variable is a count variable, an estimator based on a gamma distribution is likely most appropriate. While acknowledging that there may be some resulting lack of efficiency compared to a simple poisson model, we have opted for a high degree of flexibility and estimate the fixed-effect negative binomial model of Hausman, Hall and Griliches.<sup>91</sup> Furthermore, lack of efficiency is not a major concern for us as our coefficients of interest are generally significantly different from zero at the 1% level.

Fixed-effect estimators are the workhorse of cross-country panel applications because they significantly reduce the influence of omitted time-invariant country characteristics. In our case, relevant characteristics include factors such as region, legal tradition, geographical size, and colonial history. Yet, using a full fixed-effect model for our purposes may cause bias since the inclusion of lagged cumulative participation is akin to including a lagged dependent variable.<sup>92</sup> Thus our base specification is something of a compromise, allowing for country-specific dispersion in a negative binomial specification, (thus allowing country-specific intercepts) but not being a pure fixed-effect model.<sup>93</sup> In robustness checks we compare our results to those obtained in both a fixed-effect poisson model and a negative binomial model without country-specific dispersion. The results in Table A.2. indicate that our choice of estimator does not qualitatively affect our findings.

Table A.2 shows the robustness of the finding to the choice of estimator from within the set of count-data models which could potentially be used in the application. The strong negative impact of a BIT claim is detected by all the estimators. From left to right the estimators are a standard Poisson, fixed-effect Poisson, Negative Binomial (constant dispersion), Hausman, Hall and Griliches' 'fixed effects' estimator (our base estimator)<sup>94</sup>, and a negative binomial model including country-dummies.<sup>95</sup>

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<sup>91</sup> Hausman, Hall and Griliches 1984.

<sup>92</sup> For a discussion, see Arellano and Honoré 2001.

<sup>93</sup> Allison and Waterman 2002.

<sup>94</sup> Hausman, Hall and Griliches 1984.

<sup>95</sup> The later is suggested by Allison and Waterman 2002.

	(1)	(2)	(3)	(4)	(5)
	Poisson	FE-Poisson	NegBin.	Base	NegBin-FE
<b>L.BIT Claim</b>	-0.417*** (0.101)	-0.343*** (0.089)	-0.468*** (0.117)	-0.423*** (0.107)	-0.379*** (0.139)
<b>L.Inward FDI</b>	-0.031*** (0.007)	-0.031*** (0.008)	-0.034*** (0.009)	-0.016 (0.011)	-0.028** (0.012)
<b>L.Outward FDI</b>	-0.021 (0.025)	-0.015 (0.011)	-0.004 (0.017)	-0.011 (0.014)	-0.010 (0.014)
<b>L.GDP</b>	0.002*** (0.000)	0.002*** (0.000)	0.002*** (0.000)	0.001** (0.001)	0.002*** (0.001)
<b>L.Invest.Protect</b>	0.051* (0.027)	0.067*** (0.018)	0.077*** (0.026)	0.071*** (0.022)	0.088*** (0.029)
<b>Constant</b>	-1.972*** (0.293)		-2.166*** (0.304)	2.260*** (0.494)	-0.774 (0.480)
<b>Inalpha</b>			-0.482*** (0.123)		-1.407*** (0.198)
<b>Observations</b>	1632	1604	1632	1604	1632

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Dependent variable is the annual number of BITs signed. See text for description of estimators. Coefficients and standard errors reported. Standard errors in columns 1, 3 & 5 are robust to country-level clustering. Year dummies and cubic function of lagged total BIT participation as well as lags of ratification also included but coefficients not reported. All other controls are lagged one year.

**Table A.2. Strong negative effect of first claim on participation is robust to choice of count-data estimator and treatment of country-effects.**

### *Other robustness tests*

Table A.3 shows the robustness of the strong negative impact of BIT claims on participation to plausible changes in the base specification. In column 1 the controls for FDI flows are omitted from the base specification. If BITs have some impact on FDI flows, it is possible that including FDI on the right hand side could bias all the coefficients in the regression. Furthermore, including FDI on the right hand side may cause bias due to non-random missing values in the FDI data. However, the economically and statistically insignificant difference between the coefficients on BIT claim in columns 1 and the base regression suggest neither endogeneity nor selection bias problems in the base regression.

Column 2 omits all lagged BIT-participation controls. The robustness of the result here confirms that the negative BIT claim effect is not a spurious time-series artifact due to the lagged participation controls. Column 3 omits the year dummies from the base specification and instead includes global BIT participation and claims. As we would expect

the total number of BITs signed globally is positively related to participation, while the impact of increasing total global claims is negative. Columns 4 and 5 add to the base specification respectively controls for non-BIT investor-state arbitrations - i.e. with jurisdiction based on national investment laws or other investment treaties - and BIT claims where investors sought more than US\$100 mio. in compensation. Controlling for non-BIT claims has negligible effect on the base regression. Controlling for large BIT claims (in column 5) substantially reduces the coefficient on all BIT claims. This makes sense as the coefficient on all BIT claims should now be interpreted as the response to small, medium or publicly unknown magnitude claims.

	(1)	(2)	(3)	(4)	(5)
<b>L.BIT Claim</b>	-0.436*** (0.102)	-0.441*** (0.107)	-0.465*** (0.110)	-0.421*** (0.107)	-0.365*** (0.120)
<b>L.GDP</b>	0.000 (0.000)	0.001*** (0.000)	0.001** (0.001)	0.001** (0.001)	0.001** (0.001)
<b>L.Invest.Protect</b>	0.073*** (0.021)	0.064*** (0.022)	0.046** (0.021)	0.071*** (0.022)	0.071*** (0.022)
<b>L.Inward FDI</b>		-0.018* (0.011)	-0.010 (0.010)	-0.016 (0.011)	-0.015 (0.011)
<b>L.Outward FDI</b>		-0.011 (0.014)	-0.011 (0.014)	-0.012 (0.014)	-0.011 (0.014)
<b>Global BITs</b>			0.001*** (0.000)		
<b>Global Claims</b>			-0.004*** (0.001)		
<b>L.non-BIT Claim</b>				0.182 (0.188)	
<b>L.Big BIT Claim</b>					-0.169 (0.166)
<b>Constant</b>	1.603*** (0.434)	1.339*** (0.318)	0.437** (0.215)	2.234*** (0.494)	2.203*** (0.495)
<b>Observations</b>	1832	1604	1604	1604	1604

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Dependent variable is the annual number of BITs signed. Table reports coefficients from negative binomial, fixed effect estimation, standard errors in parentheses. Year dummies (except in column 3) and cubic function of lagged total BIT participation as well as lags of ratification (except in column 2) also included but coefficients not reported. All other controls are lagged one year.

**Table A.3. Strong negative effect of claims on participation is robust to different specifications, including controlling for large BIT claims and non-BIT investor claims.**

Table A.4 repeats the exercise of Table 7 using the dataset from an important recent contribution to the literature by Jandhyala, Henisz and Mansfield.<sup>96</sup> In column 1 we see once again that our principle finding of a strong negative impact from first claim against a host is robust to the use of a bilateral/dyadic modeling approach. In column 2 we add the variable for first claim brought by an investor from the potential host country, and once again see no effect from this variable. In columns 3 and 4 we make the specification increasingly conservative by adding first year and then host-country dummies. In all cases we find strong evidence that hosts decrease participation in response to the first claim against them, but show no response to the first claim brought by investors from the potential host.

	(1)	(2)	(3)	(4)
<b>BIT claim against (host)</b>	0.621 <sup>***</sup> (0.055)	0.569 <sup>***</sup> (0.052)	0.651 <sup>***</sup> (0.061)	0.584 <sup>***</sup> (0.066)
<b>BIT claim by (source)</b>		0.908 (0.081)	0.981 (0.093)	1.023 (0.092)
<b>Observations</b>	145287	123729	123729	123729
<b>Quadratic in host no. of BITs</b>	Yes	Yes	Yes	Yes
<b>Quadratic in source no. of BITs</b>	No	Yes	Yes	Yes
<b>Year dummies</b>	No	No	Yes	Yes
<b>Host country dummies</b>	No	No	No	Yes

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Exponentiated coefficients of piecewise exponential model of BIT signing, standard errors in parentheses. Dataset and regression specification are exactly as per column 1 of Table 2 of JHM (2011) except for our extra controls as indicated in the table. A full set of results showing coefficients for all variables in the regression is available from the authors' websites.

**Table A.4. Using the dataset of Jandhyala, Henisz and Mansfield (JHM) (2011), we see robust evidence that claims against host significantly reduce likelihood of BIT-formation while claims by investors from partner have no effect.**

<sup>96</sup> JHM 2011.



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