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Ossa, Ralph ; Staiger, Robert W ; Sykes, Alan O

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Standing in international investment and trade disputes☆

Ralph Ossa [a], Robert W. Staiger [b,*], Alan O. Sykes [c]

[a] Department of Economics, University of Zurich; and CEPR, Switzerland
[b] Department of Economics, Dartmouth College; and NBER, United States
[c] Stanford Law School, United States

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ABSTRACT

International investment agreements employ dispute settlement procedures that differ markedly from their counterparts in trade agreements. A prominent and controversial difference arises with respect to the issue of "standing": Who has the right to complain to adjudicators about a violation of the agreement? While trade agreements limit standing to the member governments (state-to-state dispute settlement), investment agreements routinely extend standing to private investors as well (investor-state dispute settlement). We develop parallel models of trade and investment agreements and employ them to study this difference. We find that the difference in standing between trade and investment agreements can be understood as deriving from the fundamentally different problems that these agreements are designed to solve. Our analysis also identifies some important qualifications to the case for including investor-state dispute settlement provisions in investment agreements, thereby offering a potential explanation for the strong political controversy associated with these provisions.

1. Introduction

Firms that engage in foreign direct investment are protected against expropriation and related practices by an extensive network of international investment agreements. Since the late 1950s, over 2000 stand-alone investment agreements have been concluded, such as those negotiated pursuant to the U.S. bilateral investment treaty program. Moreover, roughly 300 additional investment agreements have been adopted as part of larger economic arrangements, beginning with the investment chapter in the North American Free Trade Agreement (NAFTA).

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* Corresponding author.
E-mail address: rstaiger@dartmouth.edu (R.W. Staiger).

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These agreements have become a subject of much political controversy. The key point of contention is the investor-state dispute settlement (ISDS) system, which is the predominant remedy for breach of investment treaty commitments. It gives private investors standing in the dispute settlement process, which means that private investors can directly bring cases to the dispute panel. This stands in sharp contrast to the state-to-state dispute settlement process (SSDS) in trade agreements, where only member governments have the right to file cases.

ISDS has come under attack from both the left and the right. Senator Elizabeth Warren has written: "Conservatives who believe in U.S. sovereignty should be outraged that ISDS would shift power from American courts, whose authority is derived from our Constitution, to unaccountable international tribunals. Libertarians should be offended that ISDS effectively would offer a free taxpayer subsidy to countries with weak legal systems. And progressives should oppose ISDS because it would allow big multinationals to weaken labor and environmental rules."[1] An October 2017 letter to President Trump was signed by 230 law and economics professors, who urged the President to eliminate ISDS from the U.S.-Mexico-Canada Agreement (USMCA), insisting that ISDS "undermines the important roles of our domestic and democratic institutions, threatens domestic sovereignty, and weakens the rule of law."[2] The Trump administration responded by negotiating the phase-out of ISDS for disputes between Canada and the United States. Perhaps surprisingly, much of the resistance to eliminating the ISDS mechanism from the USMCA came from the Mexican government, which secured its partial retention over the initial objections of the United States.[3]

The ISDS controversy arises against a backdrop of intriguing puzzles that the formal economics literature has done little to address. Why do international investment agreements overwhelmingly provide for private rights of action in the form of ISDS rather than simply SSDS? Why do trade agreements uniformly provide for SSDS and not private rights of action in the form of exporter-state dispute settlement (ESDS)?[4] Are the critics of ISDS right that it unwisely burdens national sovereignty and undermines sound regulatory policies? And why did Mexico push to retain the ISDS in the USMCA? To answer these and related questions, we develop parallel models of trade and investment agreements and ask whether a case can be made for granting private rights of action in either kind of agreement.[5]

We begin with the question of standing in trade agreements. Adopting the perspective of the terms of trade theory of trade agreements (Bagwell and Staiger, 2002), we model trade agreements as focused on the expansion of market access through the exchange of trade policy commitments between governments, and thus as government-to-government agreements. And we model the dispute settlement procedures of a trade agreement as focused on the protection of these market access commitments. In particular, our model of trade agreements mirrors closely that of Maggi and Staiger (2011): the governments of a home (importing) and a foreign (exporting) country negotiate a vaguely worded contract that specifies trade policy commitments for the home government and that is written ex ante in the presence of uncertainty about the future state of the world; and the dispute settlement procedure of the trade agreement involves a court whose mandate is to interpret the contract when invoked ex post in a dispute over whether the trade policy commitments described in the contract have been honored.[6] In this model, the question of standing then comes down to whether only the foreign government should have the right to file a dispute against the home government and invoke the court (SSDS), or whether in addition private exporters in the foreign country should be extended this right (ESDS).

We find no support for the introduction of private standing in trade agreements. Rather, and consistent with the design of real-world trade agreements, we find that a trade agreement that includes standing for the member governments in the form of SSDS could only worsen its performance if it also included ESDS. This finding can be understood in two steps. The first step is to recall that trade agreements as we have modeled them are government-to-government agreements. Hence, granting standing only to governments in a trade agreement (i.e., including only SSDS in the agreement) amounts to restricting standing to the

[1] Washington Post, February 25, 2015.

[2] Available at https://www.citizen.org/system/files/case_documents/isds-law-economics-professors-letter-oct-2017_2.pdf.

[3] The prior ISDS mechanism of NAFTA was preserved in the USMCA for claims involving Mexico only in a few sectors such as telecommunications and oil and gas. Other investors can pursue claims against Mexico on a more limited legal basis and only after litigating in Mexican court for up to 30 months. On Mexico's position in these negotiations, see https://www.lexology.com/library/detail.aspx?g=c42ad0d6-3240-4e24-ac21-5caca954962c. The opposition to ISDS is not limited to the United States. In Europe, the Belgian province of Wallonia temporarily blocked the entire Comprehensive Economic and Trade Agreement (CETA) over concerns about its investment provisions. Opposition to these investment provisions was also at the heart of the massive protests in Europe against the CETA and the Transatlantic Trade and Investment Partnership (TTIP), which brought hundreds of thousands of Europeans into the streets.

[4] To be sure, some agreements have both trade and investment provisions. In the USMCA, for example, the investor-rights provisions allow for both SSDS and private rights of action in the form of ISDS. But the "trade" provisions of the USMCA, involving commitments on trade in goods and services and intellectual property rights, rely exclusively on SSDS, as does the WTO.

[5] In addition to standing, the nature of the remedy and the remedial period also differ markedly across the dispute settlement procedures of trade and investment agreements. The nature of the remedy concerns the remedial consequences of an adjudicated violation. In trade agreements, the dispute settlement process may authorize trade sanctions against incompliant violators (as in the WTO) but money awards are not used as a practical matter. Under investment agreements, by contrast, money awards are routinely available to private investors who win in court when the agreements grant them standing. The remedial period refers to the period of time that is "covered" by the remedial measure. In trade agreements, no remedy typically exists for harm done to the complainant prior to the adjudication of a violation, so the focus is on "prospective damages." Under investment agreements, by contrast, private investors routinely receive "retrospective damages" in the sense that they are compensated for the entirety of the harm suffered as a consequence of the violation, compensating them for past losses as well as the value of future harms. Below we abstract from differences across trade and investment agreements in the nature of the remedy and the remedial period to focus on the difference in standing, but in our working paper (Ossa et al., 2021) we show that all three of these observed differences can be understood from the perspective of the parallel models we develop here.

[6] As will become clear, while we build from the model of Maggi and Staiger (2011) we do not explicitly model the use of vague language or the court's interpretation of it as they do. Our use of this terminology reflects our preferred interpretation of a reduced-form assumption that the court aims to make efficient rulings but only succeeds with some probability.

"principals" in the agreement. While this first step might seem already sufficient for concluding that SSDS alone is optimal for a trade agreement, this step alone is not enough: if the principals in the agreement have insufficient incentives by themselves to file disputes at the margin, then extending standing also to an "agent" of each principal who can spur on additional filings at the margin and compensate for the underfiling of the principals might be desirable. The second step is to observe that this situation can never arise: in fact, we show that there is a general tendency for the principals (in this case the foreign government) in a trade agreement to *over*file at the margin relative to efficient litigation levels, because the principals do not internalize the costs that filing a dispute imposes on one another. And as the principals themselves are already filing too aggressively at the margin relative to efficient levels, extending standing in the trade agreement also to an agent such as private exporters (i.e., introducing ESDS to the agreement in addition to SSDS) – who will typically file cases more aggressively than governments would on behalf of the agent[7] – can never be optimal, since this would only encourage more filing and exacerbate the overfiling problem.

We then turn to the question of standing in investment agreements. To model investment agreements, we extend our model of trade agreements to include an ex-ante investment stage, and we introduce investment policies for a host-country government. We assume that the host-country is small in (ex-ante) world capital markets, but that the host-country government lacks the ability to make ex-ante policy commitments to foreign investors, who at the time of their investment decisions must therefore form expectations – given the dispute settlement procedures in place – about the ex-post treatment they will receive from the host-country government once their investments are sunk. In this setting, which we argue captures key features of the typical policy environment faced by foreign investors, investment agreements derive their value because they represent a means for the host-country government to make policy commitments to potential foreign investors. Hence, we take these agreements to solve commitment problems between host governments and foreign investors, and therefore to be government-to-investor agreements, which distinguishes them from government-to-government trade agreements that are designed to solve market-access problems. And we find that the difference in the optimal choice of standing between trade and investment agreements can be traced to the fundamentally different problems that these agreements are designed to solve.[8]

In particular, we find qualified - though by no means conclusive - support for the inclusion of private standing in investment agreements. Like our finding for trade agreements, this finding can also be understood in two steps. The first step is to observe that investment agreements as we have modeled them are government-to-investor agreements. Hence, while for trade agreements the inclusion of private standing would extend standing beyond the principals in the agreement, in the case of investment agreements including private standing by granting standing to foreign investors is *necessary* to ensure that the principals have standing. Again this first step might seem already sufficient for concluding that ISDS is therefore optimal for an investment agreement, but again this step alone is not enough: if the principals in the agreement have *excessive* incentives to file disputes at the margin, then limiting standing only to a less-litigious "agent" of each principal in order to reduce filing at the margin and mitigate the overfiling of the principals might be desirable. The second step is then to observe that, as in the case of trade agreements and for exactly the same reason, there is indeed a general tendency for the principals (in this case the foreign investors) in an investment agreement to overfile at the margin relative to efficient litigation levels, because the principals do not internalize the costs that filing a dispute imposes on one another. And hence the case for including ISDS in investment agreements can be made, but it must be qualified: it is only optimal to include ISDS in an investment agreement if the inevitable over-filing that results from its inclusion is less costly in terms of lost efficiency than the possible under-filing that could result if ISDS were removed and standing in the investment agreement were reserved only for governments.

We emphasize that the key distinction between trade and investment agreements that drives the differences in optimal standing is that trade agreements are government-to-government agreements, while investment agreements are government-to-investor agreements. This implies that an efficient trade agreement maximizes the joint surplus of the Home government and the Foreign government, making the Foreign government a 'principal' and the Foreign exporter an 'agent'. Analogously, it means that an efficient investment agreement maximizes the joint surplus of the Host government and the Foreign investor, making the Foreign investor a 'principal' and the Foreign government an 'agent'. As we will show, our results on optimal standing also hold for a given level of Foreign investment so that the presence of an additional ex-ante inefficiency in our investment model is not the main driver of our result.

To the best of our knowledge, we are the first to offer a formal comparative analysis of the choice of standing in the dispute settlement procedures of trade and investment agreements. This allows us to explain a key difference in the observed dispute settlement procedures of trade and investment agreements as the consequence of the fundamentally different problems these agreements are designed to solve (and in our working paper version we extend this logic to explain several additional design differences across these agreements – see note 5).

Our analysis is most closely related to Maggi and Staiger (2011) and Horn and Tangeras (2021b). Maggi and Staiger (2011) provide the basic model of dispute settlement on which we build. We go beyond Maggi and Staiger (2011) by exploring the

[7] This statement presumes that free-rider issues facing exporters are not too severe. But as we explain below, even severe free-rider issues do not overturn our results on standing, because the agreements on which we focus invariably afford standing to governments even where private actors also have standing, and so the relevant thought experiment for standing in trade agreements is whether exporters should be given standing *in addition* to governments; this must (weakly) increase filings. The same statements apply with regard to foreign investors in the context of investment agreements.

[8] As we discuss at later points in the paper, in practice trade agreements may also serve a commitment role for governments with respect to foreign exporters, and investment agreements do sometimes have market access provisions. Hence, while we view the primary role of trade agreements as serving a market access function and the primary role of investment agreements as serving a commitment function and have modeled them as serving these roles, to the extent that a trade agreement serves a commitment role the results we derive on standing in the context of an investment agreement would apply; and similarly to the extent that an investment agreement serves a market access role the results we derive on standing in the context of a trade agreement would apply.

choice of standing and by extending the framework to investment agreements. Horn and Tangeras (2021b) study the choice of standing in the model of investment agreements of Horn and Tangeras (2021a), but they do not consider why these features may differ across investment and trade agreements. We also differ from Horn and Tangeras in our analysis of standing in investment agreements, for example by allowing for up-front investment incentives.

We also have points of contact with the broader literature on investment agreements. Some of the key features of our model of investment agreements can be found in other papers on dispute settlement in investment agreements, for example the existence of costly litigation or investment subsidies. Horn and Tangeras (2021a) usefully separate this literature into two strands. A first strand studies the implications of exogenously specified agreements, such as Konrad (2017), Janeba (2019), Kohler and Stahler (2019), and Schjelderup and Stahler (2021). A second strand, such as Aisbett et al. (2010), Stahler (2018), and Horn and Tangeras (2021a, 2021b), analyzes the design of efficient agreements as we do here.

The remainder of the paper proceeds as follows. Section 2 provides additional institutional detail on trade and investment agreements and their dispute settlement systems. Section 3 contains our analysis of standing in trade agreements while Section 4 turns to the standing issue in investment agreements. Section 5 concludes.

2. Legal standing under trade and investment agreements

Important heterogeneities exist within and among trade and investment agreements and their approaches to dispute settlement, and it is not our intent here to provide a comprehensive survey of these heterogeneities. Instead, we focus on "typical" characteristics of trade and investment agreements in relation to the issue of legal standing.

2.1. Trade agreements

The predominant economic account of international trade cooperation is the terms of trade theory (Bagwell and Staiger, 2002), wherein the inefficiency of unilateral trade policy arises because of international price externalities attributable to trade impediments erected by "large" countries. Governments negotiate for reciprocal market access commitments to abate these externalities. The benefits to each government flow not from the gains afforded to foreign exporters, but from the gains to their own exporters. Likewise, the utility to country A derived from a legal commitment to country B lies in maintaining the incentive for country B to honor its own commitments that benefit country A's exporters. Accordingly, government parties to trade agreements have no interest in permitting enforcement litigation unless foreign governments wish it to go forward – if country B's government is unconcerned by some measure that violates the commitments of country A, an enforcement action against country A by an exporter from B will impose costs on A without incentivizing any reciprocal beneficial behavior by B. This is the sense in which trade agreements are government-to-government agreements (Sykes, 2005).

The key substantive obligations under modern trade agreements are tariff commitments, restrictions on other protective border measures (such as quotas) that can impede market access, and constraints on various domestic policies (e.g., discriminatory taxes) that can undermine market access commitments associated with tariff reduction. A well-known example of such an agreement is the General Agreement on Tariffs and Trade (GATT), first negotiated in 1947.

Under GATT, formal sanctions for violations did not arise in practice, but disputants could agree to allow arbitral panels to adjudicate the merits of a case and issue a report as to whether a violation had occurred. Cases were initiated when a member government made a request for an arbitral panel and the other party did not oppose it. Over time, the membership became dissatisfied with this system and, with the creation of the WTO (which subsumed GATT), established a new system whereby complaining nations can obtain an arbitral panel as a matter of right and secure a final ruling including a right of appeal,[9] accompanied by a formal recommendation to a violator to cease the violation within a "reasonable time." If a violator fails to do so and does not negotiate alternative compensation, the complainant may impose retaliatory trade measures. But the system retains the feature of GATT that only member governments have the right to bring cases to the dispute settlement process.

The dispute settlement systems under the hundreds of other trade agreements now in force vary somewhat, but most share core features with the WTO system. Under USMCA Chapter 31 and CETA chapter 29, for example, only member governments can bring complaints in relation to the trade provisions.

2.2. Investment agreements

Investment agreements primarily serve to protect established investors (often with sizeable sunk costs) against certain measures by host countries that impair the value of their established investments, such as expropriation without adequate compensation, discrimination in favor of host country or third-country investors, and a denial of "fair and equitable treatment" that frustrates investors' reasonable expectations and typically entails governmental deception or denial of due process.[10]

[9] We note that at this writing, the WTO Appellate Body is not functioning due to the refusal of the United States to approve the appointment of new judges. Subsets of the membership have now, for the moment, devised alternative appellate mechanisms.

[10] As an illustrative example of a modern investment treaty, the U.S. Model Bilateral Investment Treaty (available at https://ustr.gov/sites/default/files/BIT%20text%20for%20ACIEP%20Meeting.pdf) contains obligations to afford most-favored-nation treatment, national treatment, fair and equitable treatment, a prohibition on various performance requirements, and prompt compensation for any expropriation. Investors alleging a breach of the treaty or of certain investment contracts with the host government have the option to pursue international arbitration through the International Center for the Settlement of Investment Disputes (ICSID) at the World Bank or under the arbitration rules of the United Nations Commission on International Trade Law (UNCITRAL).

The main inefficiency to be addressed by an investment agreement is a time inconsistency problem, whereby host governments may exploit foreign investors after they incur sunk costs. This problem motivates the host country to seek commitment strategies to assure foreign investors that they will not be exploited. Investment agreements are one such strategy. By assuring the individual investor that its legitimate interests will be respected, the host country directly benefits through a reduced cost of imported capital. And when capital is elastically supplied, the host country fully internalizes the benefits of its commitments to investors. Accordingly, host countries have an interest in an enforcement regime that effectively protects the legitimate interests of private investors, regardless of whether the investors' home governments would be inclined to bring enforcement actions. This is the sense in which investment agreements are government-to-investor agreements (Sykes, 2019).

SSDS in some form can be found in virtually all international investment agreements. But in addition, ISDS is included in 95% of investment treaties currently in force according to UNCTAD (2018). Investors who believe that a treaty commitment has been violated, and who have not secured adequate redress through consultations or litigation in the host country, can bring a case to international arbitration before neutral arbitrators (such as before the International Center for the Settlement of Investment Disputes (ICSID) at the World Bank). When a violation is found, the arbitrators proceed to assess damages and issue an award directing the host country to compensate the complaining investor for the violation.

2.3. Additional considerations motivating our modeling assumptions

Above we have highlighted the key institutional differences relating to legal standing across the dispute settlement procedures of trade and investment agreements. We now motivate a number of features of the economic environment relevant to trade and investment activities that we will attempt to capture in our modeling framework and that we show can give rise to these institutional differences.

We take the position that under both trade and investment agreements, the private beneficiaries of commitments (exporters and investors) typically gain more from the enforcement of commitments than do their home governments. In the trade setting, for example, the enforcement of foreign market access commitments on behalf of exporters will tend to increase prices at home for exported goods and the inputs used to produce them, harming local consumers and other purchasers of those inputs. Governments take these ancillary effects into account while exporters do not. Similarly, in both the trade and investment settings, governments may have a variety of military, diplomatic, security and related "political filter" reasons for preferring not to bring cases against certain foreign governments when their exporters or investors would nevertheless benefit (Levy and Srinivasan, 1996). Accordingly, it is reasonable to assume (with some caveats that we will address) that exporters and investors in general, if given standing to bring cases, will be more aggressive litigants than their governments.

To make our analysis pertinent to current controversies over trade and investment disputes, we focus on settings in which disputes arise in equilibrium. In principle, a dispute system might be so inexpensive, accurate, and effective at deterring violations that it never has to be used, or it might be so costly and riddled with error as to be worthless and then fall into disuse. As the Introduction makes clear, however, both the trade and the investment approaches to dispute settlement are generating no shortage of litigated disputes, while both are often criticized as to their costs, accuracy and efficacy.

To capture this reality, we take the position that disputes are costly to litigate but not prohibitively costly. We also focus on scenarios where the stakes for the parties are high enough to justify the expense of litigating. And we will focus on scenarios where the efficiency of challenged conduct is not obvious to a third-party observer (such as a court), creating uncertainty as to the outcome of litigation. Thus, for example, we imagine in the trade context that the challenged measure involves a policy that could appear to be efficient or inefficient (such as a violation of a non-discrimination obligation that might or might not have a sufficient regulatory justification). So too in the investment context - the measure might involve a regulatory measure that greatly impairs an existing investment and may or may not be an efficient exercise of the host state's sovereign police power. Our modeling strategy parameterizes these considerations, and then directs attention to parameter regions that yield equilibrium disputes.

Finally, to isolate the standing issue, we make two simplifying assumptions in the analysis presented below. First, we abstract from differences in the nature of the remedy across trade and investment agreements and assume that damage payments are not part of the court's ruling in either context. Rather, when a case is filed and the court sides with the complainant, the defendant must simply "cease and desist" whatever policy is found to be illegal. Second, we assume that compliance with any such ruling is instantaneous so that there is no pre-compliance harm suffered by exporters or investors for which additional remedies might be desirable. We relax these assumptions in our working paper (Ossa et al., 2021), where we consider as well the optimal nature of the remedy (cash versus retaliation) and the optimal remedial period (prospective versus retrospective "damages") in trade and investment agreements.

3. Standing in trade agreements

In this section we consider the issue of standing when the underlying inefficiency to be addressed by the agreement stems from a government-to-government international policy externality that relates to market access/terms of trade issues. Consistent with our discussion in section 2, our formal results are derived in the setting of a trade agreement, reflecting the position that these are the central issues of concern in trade agreements, and we ask whether a trade agreement should include only SSDS or also ESDS. At the end of this section we also comment on how our results extend to market access issues that are handled in international investment agreements.

3.1. Model preliminaries

We build on the model of Maggi and Staiger (2011).[11] We focus on a single industry in which Home is an importer and Foreign is an exporter, and where their trade is governed by a trade agreement with a dispute settlement body (DSB) to resolve disputes. Home has to make a binary policy choice $\tau \in \{FT, P\}$ (free trade or protection) and Foreign has to decide whether to file a complaint with the DSB (there are no export policy instruments). We distinguish between an agreement that includes only SSDS, in which the filing choice is made exclusively by the Foreign government, and an agreement that includes both SSDS and ESDS, where either the Foreign government or the Foreign export industry may file a complaint.

There are $s \equiv (s_1, s_2, \ldots, s_N)$ binary states of the world, such as "there is/is not an import surge," and we let $p(s)$ denote the probability that state s occurs. We assume that the Home government gains from protection and that both the Foreign government and its exporting industry suffer from protection in all states of the world. Denoting the Home government's payoff from choosing policy τ in state s as $\omega_G(\tau; s)$, we then have Home's gain from protection given by $\gamma_G(s) \equiv \omega_G(P; s) - \omega_G(FT; s) > 0$ for all s; and similarly, denoting the Foreign government and Foreign export industry payoffs as $\omega^*_{G^*}(\tau; s)$ and $\omega^*_{E^*}(\tau; s)$ respectively, we have that Foreign agent a's loss from protection for $a \in \{G^*, E^*\}$ is given by $\gamma^*_a(s) \equiv \omega^*_a(P; s) - \omega^*_a(FT; s) < 0$ for all s. These assumptions can be given a terms-of-trade interpretation and would hold in any standard trade model. Moreover, $\omega_G(\tau; s)$ and $\omega^*_{G^*}(\tau; s)$ can also capture distributional/political economy considerations in government objectives such as would be reflected by overweighting producer surplus.

Free trade is the "first best" policy in all states $s \in \sigma^{FT}$ and protection is the "first-best" policy in all states $s \in \sigma^P$, where we define the first-best policy as the policy that maximizes the governments' joint payoff. Letting $\Gamma(s) \equiv \gamma_G(s) + \gamma^*_{G^*}(s)$ denote the governments' joint (positive or negative) gain from protection, we then have that $s \in \sigma^{FT}$ if $\Gamma(s) \leq 0$ and $s \in \sigma^P$ if $\Gamma(s) > 0$. If the Home government had access to a full set of policy instruments for intervention, including possibly lump sum taxes for redistribution, trade protection would never be first best and the set σ^P would be empty; we treat σ^P as non-empty, which amounts to an assumption that the Home government lacks this full set of policy instruments.

In the absence of a trade agreement, the Home government would choose $\tau = P$ in all states of the world. This noncooperative policy choice would correspond to the first best for $s \in \sigma^P$, but it would differ from the first best for $s \in \sigma^{FT}$, giving rise to the possibility that the two governments could do better under a trade agreement. We assume that the realized state s is observed by all agents including the DSB, but that the DSB does not observe Γ and hence payoff levels are not verifiable. This means that the first-best outcome cannot be trivially achieved with a contract that requires FT if and only if $\Gamma \leq 0$. We assume as well that it is prohibitively costly to describe precisely all the relevant state variables $(s_1, s_2, \ldots, s_N)$ that would be necessary to write a complete contingent contract covering the policy τ. We focus instead on what Maggi and Staiger (2011) call a "vague contract" that takes the form "$\tau = P$ allowed if and only if ν," where ν is a vague sentence such as "there is serious injury to the domestic industry due to increased imports." This off-the-shelf language makes the vague contract essentially costless to write, and it is assumed to specify the first-best policy choice in those states of the world where its meaning is unambiguous. But the meaning of this contract is ambiguous in some states of the world, and it is in such states that a dispute over the setting of τ may arise in our model.

Specifically, we assume that governments have given the DSB a mandate to serve an "interpretive" role: if invoked, the DSB observes an unbiased but noisy signal of Γ, which can be thought of as the outcome of an independent investigation in which the DSB "interprets" the contract. The DSB then issues a "cease-and-desist" ruling $\tau^{DSB} = FT$ if its signal indicates $\Gamma \leq 0$, and it issues the ruling $\tau^{DSB} = P$ if its signal indicates $\Gamma > 0$.[12] The DSB ruling can therefore be thought of as simply a policy determination that maximizes the expected joint payoff of the governments given the DSB signal.[13] We assume that the ruling is automatically enforced, and we denote the probability that the DSB issues the "wrong" ruling by $qk(s) \in (0, 1/2)$ where $k(s) \in (0, 1/2)$ for all s and $q \in (0, 1)$ parameterizes the (inverse) quality of the court.[14] Invoking the court is costly and we write the litigation costs incurred by Home's government and Foreign's agent a as $c(s)$ and $c^*_a(s)$ respectively.

The timing of events is as summarized in Fig. 1. First, the state of the world is realized and either $s \in \sigma^{FT}$ or $s \in \sigma^P$. Then, the Home government moves and makes its binary policy choice $\tau \in \{FT, P\}$. If the Home government chooses $\tau = FT$, the Foreign complainant has no incentive to invoke the DSB and free-trade prevails. If the Home government instead chooses $\tau = P$, the Foreign complainant has to weigh its options and may or may not invoke the DSB. If the Foreign complainant does not invoke the DSB, protection prevails. If the Foreign complainant instead invokes the DSB, the DSB moves and issues its ruling $\tau^{DSB} = FT$ or $\tau^{DSB} = P$ which is then adopted instantaneously.

[11] We go beyond Maggi and Staiger (2011) by exploring the choice of standing (in this section) and by extending the framework to investment agreements (in the next section).

[12] We follow Maggi and Staiger (2011) and Staiger and Sykes (2017) and abstract from the possibility of negotiated settlements to a dispute (i.e. negotiations between the two governments over the importer government's policy choice after the state s is realized). See Maggi and Staiger (2018) for an analysis of trade disputes that features the possibility of settlement.

[13] See Maggi and Staiger (2011) for a defense of this interpretation of DSB rulings in the context of the GATT/WTO.

[14] Maggi and Staiger (2011) derive conditions under which it is optimal for the governments to write a vague contract and install a court with a mandate to interpret the contract if invoked. We take these two institutional features as given so that we may focus on other dimensions of the design of dispute settlement procedures. Just as we do not explicitly model vague language, we also do not explicitly model the DSB's interpretative role, so this language should be viewed as our preferred interpretation of the reduced-form assumption that the DSB implements the efficient policy with an exogenous probability. See also footnote 6.

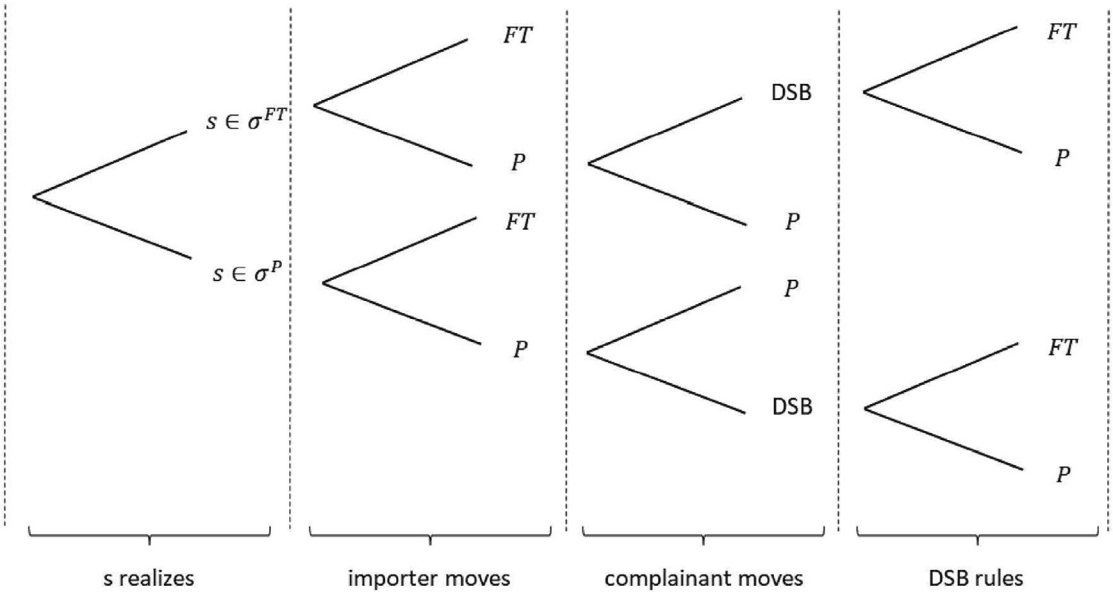

Fig. 1. Timing of Events (Trade Agreement).

We will think of standing in the trade agreement as being set in a stage 0 prior to the start of the game depicted in Fig. 1. The game is straightforward to solve by backwards induction. Consider first the Foreign complainant's filing behavior. If the agreement includes only SSDS, then only the Foreign government has standing to file a complaint, and the ratio of its court costs to "court stakes" (the payoff from winning in court) is given by $\frac{C^*_{G^*}(s)}{|\gamma^*_{G^*}(s)|} \equiv \mu^*_{G^*}(s)$. If the agreement includes both SSDS and ESDS, then both the Foreign government and the Foreign export industry have standing, and in principal either may file a complaint.[15] In this latter case, which we will indicate with the subscript $G^*\&E^*$, we can define the minimum ratio of court costs to court stakes across the Foreign agents with standing: $\frac{C^*_{G^*\&E^*}(s)}{|\gamma^*_{G^*\&E^*}(s)|} \equiv \min\{\frac{C^*_{G^*}(s)}{|\gamma^*_{G^*}(s)|}, \frac{C^*_{E^*}(s)}{|\gamma^*_{E^*}(s)|}\} \equiv \mu^*_{G^*\&E^*}(s)$. It then follows that for $f \in \{G^*, G^*\&E^*\}$ and the designation of standing that f implies, a complaint is filed in state s if and only if $\tau = P$ and

$$\Pr(\text{DSB ruling is } FT|s) > \mu^*_f(s). \tag{3.1}$$

According to (3.1), the Home government's selection of $\tau = P$ will be met with a filing in state s if and only if there is a Foreign agent with standing such that, for that agent, the probability of winning in court is greater than the ratio of court costs to court stakes so that the expected benefit of filing exceeds the cost of filing.[16]

Next consider the Home government's policy choice. Defining the ratio of the Home government's court costs to court stakes by $\mu(s) \equiv \frac{c(s)}{\gamma_G(s)}$, the Home government chooses $\tau = P$ in state s if either (3.1) fails – because then $\tau = P$ can be set without triggering a dispute – or if (3.1) holds and the expected benefit to the Home government from trade protection exceeds the cost to the Home government of a dispute:

$$\Pr(\text{DSB ruling is } P\,|\,s) > \mu(s). \tag{3.2}$$

We can now derive the equilibrium actions for each state s. For simplicity, in what follows we assume that the states where the vague contract is unambiguous are measure zero, so we can focus only on states where the court if invoked must interpret the

[15] Where the Foreign export industry has standing, we abstract from possible free-rider problems that could arise and interfere with the ability of the industry to file even when it is in its interests to do so. As will become clear below, our results are robust to the inclusion of free-rider problems provided that they are not so severe as to prevent the Foreign export industry from ever filing.

[16] In writing (1), we are implicitly assuming that if at least one Foreign agent with standing would benefit from filing in response to $\tau = P$, then in response to $\tau = P$ a filing will occur (and as will become clear, the identity of the Foreign agent that files is immaterial for our results). We therefore abstract from the possibility of strategic behavior among the potential Foreign complainants that might arise in the case of $f = G^*\&E^*$ if each potential complainant prefers that a filing occur but each prefers that the other serve as the complainant.

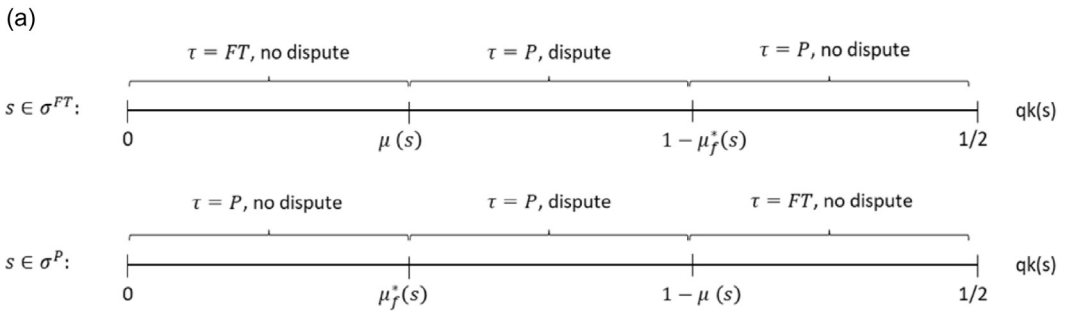

Fig. 2a. Illustration of Lemma 1.

contract.[17] We also assume that dispute costs are low relative to dispute stakes in the following specific sense:

$$\mu(s) + \mu_f^*(s) < 1 \quad \text{for } f \in \{G^*, G^*\&E^*\} \quad \text{and all } s. \tag{Assumption 1}$$

With a focus on relatively small dispute costs as embodied in Assumption 1, we direct attention to the parameter regions of the model where equilibrium disputes can arise.[18] In particular, noting that $\mu(s) < 1 - \mu_f^*(s)$ and $\mu_f^*(s) < 1 - \mu(s)$ when the dispute costs are low relative to the dispute stakes in the sense of Assumption 1, conditions (3.1) and (3.2) imply:

Lemma 1. *Equilibrium actions in the presence of a trade agreement are as follows:*

1. *In states $s \in \sigma^{FT}$: If DSB quality is high in the sense that $qk(s) \le \mu(s)$, we have $\tau = FT$ and no dispute; if DSB quality is intermediate in the sense that $qk(s) \in (\mu(s), 1 - \mu_f^*(s))$, we have $\tau = P$ and a dispute; if DSB quality is low in the sense that $qk(s) \ge 1 - \mu_f^*(s)$, we have $\tau = P$ and no dispute.*

2. *In states $s \in \sigma^{P}$: If DSB quality is high in the sense that $qk(s) \le \mu_f^*(s)$, we have $\tau = P$ and no dispute; if DSB quality is intermediate in the sense that $qk(s) \in (\mu_f^*(s), 1 - \mu(s))$, we have $\tau = P$ and a dispute; if DSB quality is low in the sense that $qk(s) \ge 1 - \mu(s)$, we have $\tau = FT$ and no dispute.*

The content of Lemma 1 is depicted in Fig. 2a, and follows an intuitive sorting along the dimension of DSB quality: if the DSB quality is high, the Home government makes the efficient policy choice and there is no dispute; if the DSB quality is intermediate, the Home government chooses $\tau = P$ and there is a dispute; and if the DSB quality is low, the Home government chooses the inefficient policy and there is no dispute.

Notice that the court has its best impact off-equilibrium, when due to its high accuracy (i.e., for $qk(s) \le \mu(s)$ in σ^{FT} and for $qk(s) \le \mu_f^*(s)$ in σ^{P}) it induces both the Home government and the potential Foreign complainant to behave efficiently in order to avoid a dispute. Where a dispute arises in equilibrium there must be opportunistic behavior, either on the part of the Home government (for $qk(s) \in (\mu(s), 1 - \mu_f^*(s))$ in σ^{FT}, where the Home government is exploiting the incompleteness of the contract and the inaccuracy of the DSB and trying to get away with protection when free trade is efficient) or on the part of the Foreign complainant (for $qk(s) \in (\mu_f^*(s), 1 - \mu(s))$ in σ^{P}, where the Foreign complainant is exploiting the incompleteness of the contract and the inaccuracy of the DSB and trying to force free trade when protection is efficient). And finally, if the DSB is inaccurate enough (i.e., for $qk(s) \ge 1 - \mu_f^*(s)$ in σ^{FT} and for $qk(s) \ge 1 - \mu(s)$ in σ^{P}) its beneficial off-equilibrium impact will erode, and such opportunistic behavior occurs while the DSB sits on the sideline. Also implied by Assumption 1 is that at least one of the thresholds $\mu(s)$ and $\mu_f^*(s)$ must be less than 1/2. Given that we also have $qk(s) < 1/2$, it then follows that: (i) if both $\mu(s) < 1/2$ and $\mu_f^*(s) < 1/2$, the third region in both σ^{FT} and σ^{P} is empty; if only $\mu(s) < 1/2$, the third region in σ^{P} is empty while the third region in σ^{FT} is non-empty; and if only $\mu_f^*(s) < 1/2$, the third region in σ^{FT} is empty while the third region in σ^{P} is non-empty.

We can now write down the expected efficiency loss, relative to the first-best outcome, that is associated with standing choice $f \in \{G^*, G^*\&E^*\}$ in combination with the vague contract and interpretive court mandate, a combination of design features that we denote by V_f and refer to as the V_f *institution*. Denoting this efficiency loss by $L(V_f)$ and defining the sets

[17] This is without loss of generality, because under our assumptions in states where the vague contract is unambiguous the Home government would make the first best policy choice and there would be no filing by the Foreign complainant, and hence there would be nothing of consequence for any of the results we emphasize.

[18] If dispute costs are sufficiently high relative to dispute stakes so that Assumption 1 is violated, it is direct to show that equilibrium disputes cannot arise in our model, regardless of court quality. Assumption 1 therefore directs attention to the case emphasized by Shavell (1982) in his classic treatment of the potential inefficiency of the incentives to litigate, namely, the case where disputes can arise in equilibrium and the legal system is not "costless." See also note 22.

$\sigma_1^{FT} \equiv \{s \in \sigma^{FT} | qk(s) \leq \mu(s)\}$, $\sigma_{2,f}^{FT} \equiv \{s \in \sigma^{FT} | qk(s) \in (\mu(s), 1 - \mu_f^*(s))\}$, and $\sigma_{3,f}^{FT} \equiv \{s \in \sigma^{FT} | qk(s) \geq 1 - \mu_f^*(s)\}$, as well as $\sigma_{1,f}^{P} \equiv \{s \in \sigma^{P} | qk(s) \leq \mu_f^*(s)\}$, $\sigma_{2,f}^{P} \equiv \{s \in \sigma^{P} | qk(s) \in (\mu_f^*(s), 1 - \mu(s))\}$, and $\sigma_3^P \equiv \{s \in \sigma^P | qk(s) \geq 1 - \mu(s)\}$, we can write:

$$L\left(V_f\right) = \sum_{s \in \sigma_{2,f}^{FT} \cup \sigma_{2,f}^{P}} p(s) qk(s) |\Gamma(s)| + \sum_{s \in \sigma_{2,f}^{FT} \cup \sigma_{2,f}^{P}} p(s) \left[c(s) + c_f^*(s)\right] + \sum_{s \in \sigma_{3,f}^{FT} \cup \sigma_3^P} p(s) |\Gamma(s)|. \tag{3.3}$$

Each term of expression (3.3) captures a distinct source of inefficiency arising under the V_f institution. The first term captures the loss associated with DSB error, and it is the product of the probability that state s occurs, $p(s)$, the probability that the DSB makes a mistake, $qk(s)$, and the efficiency loss associated with that mistake, $|\Gamma(s)|$, summed over all states in which the DSB is invoked, $s \in \sigma_{2,f}^{FT} \cup \sigma_{2,f}^{P}$. The second term captures the efficiency loss arising from the cost of a dispute, and it is the product of the probability that state s occurs, $p(s)$, and the joint cost of a dispute in state s, $c(s) + c_f^*(s)$, again summed over all states in which the DSB is invoked, $s \in \sigma_{2,f}^{FT} \cup \sigma_{2,f}^{P}$. The third term is the efficiency loss arising from distorted choices made "in the shadow of the court," and it is the product of the probability that state s occurs, $p(s)$, and the efficiency loss from getting the inefficient outcome in state s, $|\Gamma(s)|$, summed over all states in which the DSB quality is so poor that the inefficient policy choice prevails without any dispute, $s \in \sigma_{3,f}^{FT} \cup \sigma_3^P$.

3.2. The case for including ESDS in a trade agreement

We now evaluate the desirability of including ESDS in the agreement. When only SSDS is included (the V_{G^*} institution), only the Foreign government has standing and it alone has the right to file a dispute with the DSB. When in addition ESDS is included (the $V_{G^*\&E^*}$ institution), the Foreign export industry also has standing to file a dispute with the DSB. Defining $\Delta_{G^*\&E^*;G^*} \equiv -[L(V_{G^*\&E^*}) - L(V_{G^*})]$ as the gain (if positive) or loss (if negative) in expected joint surplus that occurs when ESDS is added to SSDS, we can evaluate the desirability of including ESDS in the agreement on the basis of whether or not $\Delta_{G^*\&E^*;G^*}$ is positive.

According to the expression for $L(V_f)$ given in (3.3), the sign of $\Delta_{G^*\&E^*,G^*}$ can be evaluated once we specify the complainant's cost of filing $c_f^*(s)$ and payoff from winning in court $|\gamma_f^*(s)|$ under each choice of standing. This is because $c_f^*(s)$ enters the expression for $L(V_f)$ directly, and both $c_f^*(s)$ and $|\gamma_f^*(s)|$ enter $L(V_f)$ indirectly by their impact on the sets $\sigma_{2,f}^{FT}$, $\sigma_{2,f}^{P}$, and $\sigma_{3,f}^{FT}$ through the filing condition (3.1).

We assume that the cost of filing is independent of the identity of the Foreign complainant. Formally, we make the following assumption:

$$c_{G^*}^*(s) = c_{E^*}^*(s) \equiv c^*(s) \quad \text{for all } s. \tag{Assumption 2}$$

Our key assumption, under which the choice of standing is consequential for the efficiency properties of the trade agreement, is that there exists at least one state s where (i) the payoff from winning in court is greater for the Foreign export industry than it is for the Foreign government and (ii) the Foreign government is at the margin between filing and not filing. Formally, and referring to the states described in (ii) as "marginal filing states," we assume the following:

$$|\gamma_{E^*}^*(s)| > |\gamma_{G^*}^*(s)| \quad \text{for at least one marginal filing state } s. \tag{Assumption 3}$$

With these assumptions we capture the idea, as described in Section 2, that under SSDS alone, the decision to file will always reflect the "public interest" in the Foreign country as embodied in the preferences of the Foreign government, while if ESDS is also included the decision to file will reflect the most aggressive of the interests represented by the two Foreign agents with standing, namely, the Foreign government and the Foreign export industry, and will sometimes not reflect the public interest. To see this, note that Assumption 3 requires that, for at least one marginal state, the Foreign export industry would have more to gain from a win in court than would the Foreign government.[19] In combination with Assumption 2 and according to (3.1), Assumption 2 therefore ensures that there is at least one state where a filing would not occur under SSDS alone but would occur if ESDS were also included, and hence ensures that when ESDS is included there is at least one state where filing reflects Foreign exporter over public interests. The question is whether this feature, which embodies a commonly expressed fear associated with interna-

[19] Assumption 3 would hold, for example, in any model where the removal of the Home tariff, by increasing the price of the Foreign export good, would hurt Foreign consumers of that good, or would hurt other Foreign producers who compete for the same factors of production and do not also export the same good to Home. The Foreign government would in some fashion (i.e., with non-zero weight) take all of these effects – both the gains to Foreign exporters *and* the losses to other agents in the Foreign economy – into account when calculating $|\gamma_{G^*}^*(s)|$; but Foreign exporters would ignore the cost imposed on Foreign consumers and other Foreign producers when calculating $|\gamma_{E^*}^*(s)|$. Assumption 3 could also reflect the fact that the Foreign government, unlike the Foreign export industry, might apply a "political filter" when evaluating the benefits of winning in court against Home in light of the broader diplomatic relations between the two countries.

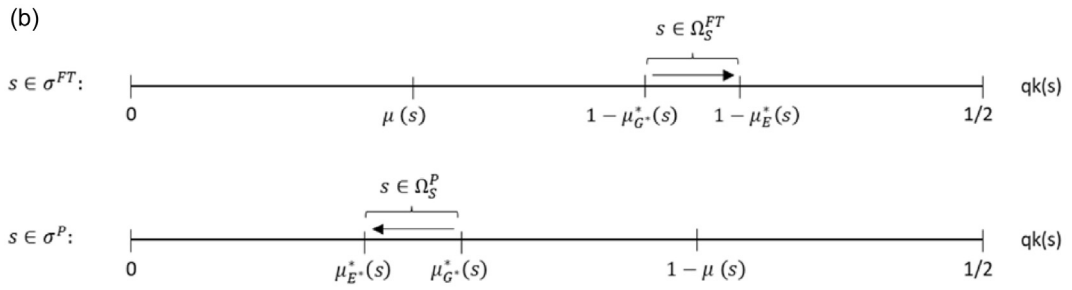

Fig. 2b. From SSDS to ESDS.

tional dispute settlement systems that provide standing to private actors, might nevertheless serve the joint interests of the Home and Foreign government.[20]

To proceed we next define two sets that embody the two key changes that would occur according to Assumption 2 and Assumption 3 if standing were broadened to include not only the Foreign government but also the Foreign export industry. These sets are illustrated in Fig. 2b. The first set is

$$\Omega_S^P \equiv \left\{ s \in \sigma^P \mid qk(s) \in (\mu_{E^*}^*(s), \mu_{G^*}^*(s)] \right\}.$$

For $s \in \Omega_S^P$ the Foreign government would allow the efficient choice $\tau = P$ to go unchallenged under the V_{G^*} institution but the Foreign export industry would file in response to $\tau = P$ under $V_{G^*\&E^*}$. The second set is

$$\Omega_S^{FT} \equiv \left\{ s \in \sigma^{FT} \mid qk(s) \in [1 - \mu_{G^*}^*(s), 1 - \mu_{E^*}^*(s)) \right\}.$$

For $s \in \Omega_S^{FT}$ the Home government would choose the inefficient $\tau = P$ with impunity under the V_{G^*} institution but the Foreign export industry would file in response to $\tau = P$ under $V_{G^*\&E^*}$. An implication of Assumption 1 in combination with Assumption 2 and Assumption 3 is that at least one of these sets (and possibly both) must be non-empty. Using these sets, we have

$$\Delta_{G^*\&E^*,G^*} = -\sum_{s\in\Omega_S^P} p(s)\left[qk(s)\Gamma(s) + c(s) + c^*(s)\right] - \sum_{s\in\Omega_S^{FT}} p(s)\left\{\left[qk(s)|\Gamma(s)| + c(s) + c^*(s)\right] - |\Gamma(s)|\right\}. \tag{3.4}$$

Expression (3.4) highlights the costs and benefits associated with the additional litigation that arises when ESDS is added to SSDS. Given that $\Gamma(s) > 0$ for $s \in \sigma^P$, the first term is clearly negative. It captures the fact that the added litigation in states $s \in \Omega_S^P$ is undesirable, since this litigation challenges an efficient policy and thus introduces nothing but court error and litigation costs: $qk(s)\Gamma(s)$ is the expected loss associated with court error, and $c(s) + c^*(s)$ is the joint litigation cost. The second term is also negative, reflecting the fact that the added litigation in states $s \in \Omega_S^{FT}$ is also undesirable, but the sign is less obvious this time. This is because the added litigation now challenges an *in*efficient policy so that the loss associated with court error and litigation costs $[qk(s)|\Gamma(s)| + c(s) + c^*(s)]$ is counterbalanced by an efficiency gain $|\Gamma(s)|$. However, using the filing condition of the Foreign government (Eq. (3.1) with $f = G^*$), it is easy to show that the loss associated with court error and litigation costs is greater than the efficiency gain.[21] Evidently, for $s \in \Omega_S^{FT}$ the Foreign *government* does not see a filing as worth the dispute cost while the Home government never benefits from a filing, and the fact that Foreign exporters would nevertheless choose to file simply reduces the value of the agreement to the two governments.

We may conclude that $\Delta_{G^*\&E^*,G^*} < 0$: the two governments would choose not to include ESDS in addition to SSDS in their trade agreement. We summarize with:

Proposition 1. *An optimally designed trade agreement will include SSDS, but not ESDS. That is, it is optimal to allow governments, but not their exporters, to have standing to bring disputes in a trade agreement.*

Intuitively, the finding contained in Proposition 1 reflects the fact that under SSDS the Foreign government is itself overly litigious at the margin of litigation – it chooses to file, when from the perspective of the expected joint surplus of the two

[20] Notice from (3.1) that the Foreign export industry would also file more aggressively than the Foreign government if, contrary to Assumption 2, $c_{G^*}^* > c_{E^*}^*$, because then the industry would face lower dispute costs than its government. But such a dispute cost differential would *not* give rise to filings that reflect Foreign exporter over public interests, because in this case both Foreign interests would be served by the Foreign export industry's more efficient (and therefore more aggressive) filing. With Assumption 2 we abstract from possible efficiency differences across potential claimants to focus instead on their different motives.

[21] In particular, in states $s \in \Omega_S^{FT}$ the Foreign government would not have filed, which implies that $[1 - qk(s)][-\gamma_{G^*}^*(s)] - c^*(s) < 0$. Using this inequality, it then follows that the term inside the curly brackets in the second line of (3.4) is positive: $[qk(s)|\Gamma(s)| + c(s) + c^*(s)] - |\Gamma(s)| = [1 - qk(s)][\gamma_G(s) + \gamma_{G^*}^*(s)] + c(s) + c^*(s) = [1 - qk(s)]\gamma_G(s) + c(s) - \{[1 - qk(s)][-\gamma_{G^*}^*(s)] - c^*(s)\} > [1 - qk(s)]\gamma_G(s) + c(s) > 0$.

governments it should not file – owing to the negative effects on the Home government that the Foreign government does not internalize when making its filing decision. This can be seen with reference to Fig. 2b.

For states in σ^{FT}, the upper panel of Fig. 2b displays the margin of litigation for the Foreign government at the point $1-\mu^*_{G^*}(s)$, where $qk(s)$ is such that the Foreign government is indifferent between challenging P and letting P go unchallenged. When $qk(s)$ is at this margin, the Foreign government expects the benefit from possibly winning in court and flipping the Home government policy from P to FT to be equal to its litigation costs, and is indifferent between filing and not filing on this basis. But the Home government would strictly prefer that the Foreign government not file because it can then receive the surplus associated with P and no litigation costs, whereas if the Foreign government files the Home government has to pay the litigation costs and faces the prospect with probability $(1-qk(s))$ that it will have to give up P and switch to FT. So the expected joint surplus of filing at $qk(s)=1-\mu^*_{G^*}(s)$ is negative, and the Foreign government is therefore overly litigious at the margin of litigation in σ^{FT}. It follows from the lower panel of Fig. 2b that for states in σ^{P} the Foreign government is also overly litigious at the margin of litigation from the perspective of the expected joint surplus of the two governments, because it is challenging P in court when P is the efficient policy.

Viewed from this starting point, it is then clear that granting standing also to Foreign exporters must lower the expected joint surplus obtained by the governments under the agreement, because doing so would simply add to this overly litigious behavior. Notice also that the Foreign government's behavior need not be overly litigious for inframarginal court quality realizations, and indeed for sufficiently high court quality (sufficiently low $qk(s)$) the incentives of the Foreign government to litigate are efficient as we have observed. But at the realization of court quality that defines the filing margin for the Foreign government ($qk(s)=1-\mu^*_{G^*}(s)$ in σ^{FT} and $qk(s)=\mu^*_{G^*}(s)$ in σ^{P}), which is what matters for the desirability of including ESDS in the agreement, the filing incentives of the Foreign government are inefficient and the nature of the inefficiency is unambiguous in our model: the Foreign government files when from the perspective of the expected joint surplus of the two governments it should not file.[22]

3.3. Standing for market access disputes more generally

While we have thus far analyzed market access issues in the context of trade agreements, similar issues could also arise in the context of investment agreements, given the close relationship between exporting and (horizontal) foreign direct investment (FDI). Exporting and FDI are typically viewed as two alternative ways of serving a foreign market, between which firms choose based on a proximity-concentration trade-off (Brainard, 1997; Helpman et al., 2004). Exporting has the advantage that it allows firms to concentrate production in one location, while FDI has the advantage that it allows firms to avoid trade costs, so that the optimal mode of accessing a foreign market is determined by the relative importance of plant-level economies of scale and trade costs.

It is easy to verify that in such environments countries have a terms-of-trade motive for restricting the market access of foreign multinationals just as they do for restricting the market access of foreign exporters: both restrictions reduce the demand for foreign products and thus improve the terms of trade. But this motive is likely to be weaker in the context of FDI, because local affiliates of foreign multinationals typically also employ local factors which reduces the ability to shift costs to foreign countries. This implies that market access considerations should play less of a role in investment agreements than in trade agreements.[23]

In light of this, we view the results of this section as applying to market access disputes more generally, whether they arise in trade agreements or in investment agreements: with regard to market access/terms-of-trade issues, only governments should have standing to bring disputes in an optimally designed trade or investment agreement. That is, for the purpose of settling market access disputes, an optimally designed trade agreement should include SSDS, but not ESDS, while an optimally designed investment agreement should include SSDS, but not ISDS.

4. Standing in investment agreements

In this section we address the issue of standing in the context of a government-to-investor agreement, where the underlying inefficiency to be addressed by the agreement relates to a government's inability to make commitments to foreign firms that must make sunk investments to serve the domestic market. Here our formal results are derived in the setting of an investment agreement, and for simplicity we abstract from any market access issues associated with Foreign investors and assume that the investment agreement is only concerned with helping the Home – which we now refer to as Host – government make policy commitments to Foreign investors, reflecting the dominance of such issues for investment agreements as discussed in Section 2. We ask whether investment agreements should include only SSDS or also ISDS. At the end of this section we also comment on how our results extend to commitment issues that might be handled in international trade agreements.

[22] Absent from our analysis is the remaining possibility for inefficient incentives to litigate described by Shavell (1982), namely, the possibility that the Foreign government does not file when from the perspective of the expected joint surplus of the two governments it should file. This possibility can only arise in our model when dispute costs are sufficiently high relative to dispute stakes so that Assumption 1 is violated (and even then only in σ^{FT}); and as we have noted, when Assumption 1 is violated the legal system is costless, because it will *never* generate an equilibrium filing and hence dispute. As discussed above, like Shavell we have chosen to de-emphasize the case of a costless legal system, by focusing on the case where Assumption 1 is satisfied; and in our model, that focus is then sufficient to rule out this remaining possibility.

[23] Sykes (2019) draws a similar conclusion.

To carry out this analysis, we make two main modifications to our model of trade agreements in Section 3. First, once the decisions of Foreign investors have been made and foreign investment levels are sunk, we assume that the Host government implements an "ex-post" (conditional-on-investment) investment policy $\iota = \{FT, T\}$ (free trade or "taking"), where $\iota = T$ is a stand-in for a variety of investment policies that amount to an expropriation of the Foreign investor. This policy choice gives rise to the possibility of an ex-post inefficiency, which we will show by itself is analogous to the inefficiency arising from the choice of trade policy in our model of trade agreements and which the Host government can address through the investment agreement. We emphasize that our modeling is sufficiently flexible to capture both direct and indirect expropriations. Direct expropriations involve the outright appropriation of the Foreign investor's property, for example as part of a nationalization policy. Indirect expropriations do not involve a formal transfer of title but still deprive the Foreign investor of the returns from its investment, for example as a result of changes in the tax or regulatory regime.

And second, we add an ex-ante investment stage at which Foreign investors make their investment decisions and after which their investments are sunk. We assume that the Host country is small in world capital markets, so that Foreign investors are assured an expected ex-ante return at the world rate of return r^* regardless of the investment policies of the Host country; in this small-country setting, it makes sense that the investment agreement is not about (ex-ante) market access into the Host country, since Foreign investors have no reason to care about such issues there. However, at the ex-ante stage, Foreign investors do anticipate the treatment they will receive from the Host government ex post, once their investments are sunk, and this introduces the possibility of an additional – "ex-ante" – inefficiency arising from distorted Foreign investment choices into the Host-country market. Accordingly, to complement the Host government's investment agreement covering its ex-post policy treatment of Foreign investors, we allow the Host government to offer up-front investment incentives to address this ex-ante inefficiency. As we will demonstrate, the availability of this additional policy instrument implies that the choice of standing in the investment agreement remains focused on addressing ex-post inefficiencies, just as in our analysis of standing in trade agreements, and this feature will allow an "apples to apples" comparison of optimal standing in trade and investment agreements. At the end of this section we also reconsider our results on standing for investment agreements when up-front investment incentives are not an available policy option for the Host government and when the investment agreement must then address both ex-ante and ex-post inefficiencies.

Otherwise, the model essentially follows our earlier structure. In particular, as with trade agreements, real-world investment agreements include vague language which is subject to interpretation, and we will therefore model the investment agreement as we did the trade agreement, that is, as a vague contract combined with a DSB whose mandate is to interpret the contract when invoked. For example, we could think of the vague contract as stating the following (roughly corresponding to provisions in Article 6 of the US Model BIT):

> "Foreign investments may be expropriated for a public purpose, provided that adequate and effective compensation is promptly paid."

Here, what constitutes "a public purpose," and what suffices for "adequate and effective compensation" paid "promptly," are matters of interpretation. If invoked, the job of the court is then to interpret such phrases and determine whether the contract has been violated.[24]

Finally, while our reduced-form trade model is sufficient for capturing the market access issues highlighted in Section 3, the commitment problem on which we focus here warrants a more explicit modeling of the investment setting and the ex-ante and ex-post inefficiencies that can arise. We begin by describing the structure of our investment model in some detail.

4.1. Model preliminaries

As in the model of Section 3, we assume that $s \equiv (s_1, s_2, \ldots, s_N)$ is a vector of state variables with each s_i corresponding to a binary event. To fix ideas, we consider a specific FDI opportunity in the Host country that, to exploit, requires a sunk capital investment by risk-neutral Foreign investors ex ante, before the state of the world is revealed. As noted above, we abstract from market access issues and assume that the Host country is small in world capital markets and faces an infinitely elastic ex-ante supply of Foreign capital at the world rate of return r^*.

For simplicity we assume that a single Foreign investor makes a sunk investment I^*, which is converted one-for-one into output through the production function $Q = I^*$; and we assume that Host-country demand $D(P,s)$ for this output in state s is elastic, $\frac{D'(P,s)P}{Q} < -1$, so that the investor always finds it optimal to sell all output ex post. We denote the resulting market clearing price by $\tilde{P} = D^{-1}(I^*,s) \equiv \tilde{P}(I^*,s)$ and note that $\tilde{P}(I^*,s)$ is decreasing in I^* for $\tilde{P} > 0$. Host-country consumer surplus, conditional on a level of FDI I^*, is then given by $CS(I^*,s) = \int_{\tilde{P}(I^*,s)}^{\infty} D(P,s)dP$ and is increasing in I^*. Similarly, the ex-post (conditional on sunk investment I^*) Foreign operating profits or producer surplus is given by $PS(I^*,s) = \int_0^{\tilde{P}(I^*,s)} I^* dP = \tilde{P}(I^*,s)I^*$ and is increasing in I^* given our assumption that demand is elastic. As a result, the sum of consumer and producer surplus in the market is also increasing in I^*.

Production or consumption of this output may generate a negative (local) externality that is ignored by investors and individual consumers, and the realization of the state variables determines the magnitude of the utility cost of the negative externality

[24] See also Janeba (2019) for a discussion of the vague language used in investment agreements and its implications for the role of the court in settling investment disputes.

from the investment, which we denote by $e(I^*,s)$. We assume that $e(I^*,s) = e(s)I^*$ so that the utility cost is proportional to the size of the investment I^* with $e(s) \geq 0$ for all s. Moreover, we assume that in any state for which a negative externality is present (i.e., any s for which $e(s) > 0$), the externality $e(I^*,s)$ is large enough to turn the social value of the investment negative – that is, to ensure $PS(I^*,s) + CS(I^*,s) - e(I^*,s) < 0$ – for any positive investment level I^*.[25] This assumption simplifies the ensuing analysis by preserving the binary-policy-choice structure of the previous subsection, but it is not necessary for any of the results we emphasize. Under this assumption, the states of the world may be partitioned into those states $s \in \sigma^T$ where a negative externality turns the social value of the investment negative, and those states $s \in \sigma^{FT}$ where there is no externality ($e(s) = 0$) and the social value of the investment is positive and given by $PS(I^*,s) + CS(I^*,s)$.[26]

Before we proceed to characterize the ex-post payoffs of the Host government and the Foreign investor conditional on a given level of FDI I^*, it is important to be clear about our modeling of takings by the Host government. We assume that a taking of $PS(I^*,s)$ from the Foreign investor results in a producer surplus gain of $\kappa PS(I^*,s)$ for the Host government should the Host government choose to continue to operate the production facility, where $\kappa \in (0,1)$. This is meant to capture the ex-post inefficiency of takings and plays a key role in our subsequent analysis. In case of direct expropriations, we have in mind that the Host government is unlikely to be as skilled at operating the production facility as the Foreign investor. In case of indirect expropriations, we envision that the Host government is unlikely to be able to appropriate the entire producer surplus of the Foreign investor through changes in taxation or regulation. We also allow the Host government to shut down the production facility altogether.

We now characterize ex-post payoffs. The Foreign investor's ex-post payoff conditional on a given level of FDI I^* is simply determined by the operating profits π that it collects. If the investor is subject to a taking, the investor earns operating profits $\pi(I^*,T,s) = 0$ from the investment (regardless of the state of the world and whether it is a direct or indirect taking) implying an ex-post return on FDI of zero in that case. If the investor is not subject to a taking, the investor collects the market-clearing price $\tilde{P}(I^*,s)$ for the output from the investment and therefore earns operating profits $\pi(I^*,FT,s) = \tilde{P}(I^*,s)I^* = PS(I^*,s) > 0$ implying an ex-post return on FDI of $\tilde{P}(I^*,s)$ in that case.

The Host government's ex-post payoff is more involved. Fundamentally, the Host government values (expropriated) producer surplus, consumer surplus, and the local externality. If the Host government chooses $\iota = FT$, it does not get involved with the Foreign investor at all and simply collects the ex-post payoffs $\bar{\omega}(I^*,FT,s) = CS(I^*,s) > 0$ in states $s \in \sigma^{FT}$ and $\bar{\omega}(I^*,FT,s) = CS(I^*,s) - e(I^*,s) < 0$ in states $s \in \sigma^T$.[27] If the Host government instead chooses $\iota = T$, its payoff depends on whether it decides to allow or prohibit production. Notice that it chooses to allow production in all states $s \in \sigma^{FT}$ and receive $\bar{\omega}(I^*,T,s) = \kappa PS(I^*,s) + CS(I^*,s)$ since $\kappa PS(I^*,s) + CS(I^*,s) > 0$ for all $s \in \sigma^{FT}$. On the other hand, the Host government finds it optimal to prohibit production in all states $s \in \sigma^T$ and receive $\bar{\omega}(I^*,T,s) = 0$ since $\kappa PS(I^*,s) + CS(I^*,s) - e(I^*,s) < 0$ for all $s \in \sigma^T$.

We now define the ex-post gain enjoyed by the Host government from a taking in state s as

$$\bar{\gamma}_G(I^*,s) \equiv \bar{\omega}(I^*,T,s) - \bar{\omega}(I^*,FT,s) = \begin{cases} e(I^*,s) - CS(I^*,s) & \text{for } s \in \sigma^T \\ \kappa PS(I^*,s) & \text{for } s \in \sigma^{FT} \end{cases} \tag{4.1}$$

and the lost rents suffered by the Foreign investor in a taking as

$$\bar{\gamma}^*_{I^*}(I^*,s) \equiv -PS(I^*,s) \quad \text{for all } s. \tag{4.2}$$

The joint ex-post gain from a taking for the Host government and Foreign investor is then given by $\bar{\Gamma}(I^*,s) \equiv \bar{\gamma}_G(I^*,s) + \bar{\gamma}^*_{I^*}(I^*,s)$, and we have

$$\bar{\Gamma}(I^*,s) = \begin{cases} -\left[PS(I^*,s) + CS(I^*,s) - e(I^*,s)\right] > 0 & \text{for } s \in \sigma^T \\ -(1-\kappa)PS(I^*,s) < 0 & \text{for } s \in \sigma^{FT}. \end{cases} \tag{4.3}$$

Hence, in states of the world $s \in \sigma^T$ the policy that maximizes the joint ex-post surplus for the Host government and Foreign investor, which we refer to as the "first-best" ex-post policy, is expropriation (a taking) and destruction of the output from the investment (T);

[25] This amounts to an assumption that $e(s) > \tilde{P}(0,s)$ whenever $e(s) > 0$, where $\tilde{P}(0,s)$ is the "choke" price in state s at which demand drops to zero.

[26] Notice that we define the sets $\{\sigma^T, \sigma^{FT}\}$ in our model of investment agreements analogously to the sets $\{\sigma^P, \sigma^{FT}\}$ in our model of trade agreements. Trade agreements are government-to-government agreements, so σ^P is the set of states in which protection is optimal from the joint perspective of the Home government and the Foreign government (and analogously for σ^{FT}). Investment agreements are government-to-investor agreements, so σ^T is the set of states in which a taking is optimal from the joint perspective of the Host government and the Foreign investor (and analogously for σ^{FT}).

[27] Here and throughout, we use "over-bars" to distinguish notationally between functions in our analysis of investment agreements that also appear in our analysis of trade agreements.

and in states of the world $s \in \sigma^{FT}$ the first-best ex-post policy is no expropriation, amounting to a government policy that allows the sale of the output from the investment to proceed unimpeded (FT).

Formally, and denoting by ι_{FB} the first-best ex-post policy, we have $\iota_{FB} = FT$ for $s \in \sigma^{FT}$ and $\iota_{FB} = T$ for $s \in \sigma^{T}$. And if it anticipated this first-best ex-post treatment, the Foreign investor would receive an expected return on investment I^* of $E_s\left[\rho^*_{FB}(I^*, s)\right] = \sum_{s \in \sigma^{FT}} p(s)\tilde{P}(I^*, s)$, leading to a first-best investment level I^*_{FB} implicitly defined by

$$\sum_{s \in \sigma^{FT}} p(s)\tilde{P}\left(I^*_{FB}, s\right) = r^* \tag{4.4}$$

and a first-best level for expected Host government surplus of

$$E_s\left[\bar{\omega}\left(I^*_{FB}, \iota_{FB}, s\right)\right] = \sum_{s \in \sigma^{FT}} p(s) CS\left(I^*_{FB}, s\right). \tag{4.5}$$

As (4.5) indicates, when the Host government adopts the first-best ex-post policy toward Foreign investment ι_{FB}, it can expect to receive the consumer surplus generated in states $s \in \sigma^{FT}$ by the first-best level of Foreign investment.

If the Host government did not have access to any commitment technology, it would choose to expropriate the Foreign investment ($\iota = T$) in all states of the world, shutting the investment down in bad states (σ^T) and operating it for its own use in good states (σ^{FT}), owing to the sunk nature of the FDI at the time that the Host government makes its taking decision. This ex-post policy choice would correspond to the first best for $s \in \sigma^T$, but it would correspond to opportunistic behavior which differs from the first best for $s \in \sigma^{FT}$, leading to ex-post inefficiencies as long as $\kappa < 1$. Moreover, the Host government's opportunistic takings would have ex-ante implications: anticipating this ex-post treatment and hence a zero ex-post return on FDI in all states, in the absence of any further policy interventions no Foreign investment would be forthcoming, and the Host government's surplus, far from achieving its first-best level defined in (4.5), would be driven to zero in this market.[28] Of course, even in the presence of its opportunistic takings, the Host government could induce any level of Foreign investment that it desires by offering an appropriate program of up-front incentives for Foreign investors to compensate for the anticipated lack of ex-post returns; but the ex-post inefficiencies associated with opportunistic takings would still remain. Our task is to consider the role that an investment agreement might play in providing the Host government with a commitment technology to avoid these opportunistic takings and thereby to bring its expected surplus closer to the first-best level, and to identify the choice of standing in the agreement that would best serve this role.

4.2. Investment agreements

Having laid out the model preliminaries, we are now ready to describe the full game. As with our analysis in Section 3, we will think of standing in the investment agreement as being set in a stage 0 prior to the start of the game. The timing of events is then described in Fig. 3.

In the ex-ante stage, the Host government chooses the up-front investment incentives to offer the Foreign investor, and the Foreign investor then chooses its investment level in the Host country I^* in light of the up-front subsidy it receives and its anticipation of the ex-post treatment it can expect under the investment agreement. The investment agreement determines what happens once the investment is sunk and works exactly like the trade agreement in Section 3. In particular, after the Foreign investment choice has been made, the Host government chooses its ex-post investment policy $\iota \in \{FT, T\}$; if it chooses a taking, the Foreign claimant (the Foreign government if only SSDS is included in the agreement, and either the Foreign government or the Foreign investor if both SSDS and ISDS are included in the agreement) then decides whether to file a complaint with the DSB; and if a complaint is filed, the DSB issues a ruling based on a noisy signal of which ex-post policy is first-best in the realized state.

To analyze the full game, we will proceed by backward induction, considering first the Foreign claimant's filing choice, then the Host government's ex-post investment policy choice, and finally the Host government's up-front investment incentive choice and the Foreign investor's chosen level of I^*, all evaluated under each possibility for standing in the investment agreement. But before proceeding to the full analysis, it is instructive to consider first the optimal choice of standing for an investment agreement in a simpler setting, namely under the assumption that Foreign investment is taken as fixed and sunk at some exogenous level I^* at the time that the investment agreement is designed and standing in the agreement is determined.

Under this fixed-investment assumption, the Host government's policy choices can only create ex-post inefficiencies, and there is of course no role for a program of up-front investment incentives. Moreover it is clear under this assumption that the optimal choice of standing will maximize the expected ex-post joint surplus for the Host government and the Foreign investor, who can

[28] Domestic institutions may exist in the host country that can offer partial protection of the property rights of Foreign investors in the Host country, such as the domestic property law itself and the courts that enforce it. In our working paper (Ossa et al., 2021), we capture this in a reduced-form fashion by assuming that the Host government is forced (e.g., by the domestic court) to implement the first-best ex-post policy with probability $\bar{p} \in [0, 1]$ and can act at its own discretion with probability $1 - \bar{p}$. We think of $\bar{p}$ as a parameter that varies across countries capturing differences in institutional quality, with $\bar{p} < 1$ signifying a lack of full commitment on the part of the Host government. There we show that all of our results go through under this extension.

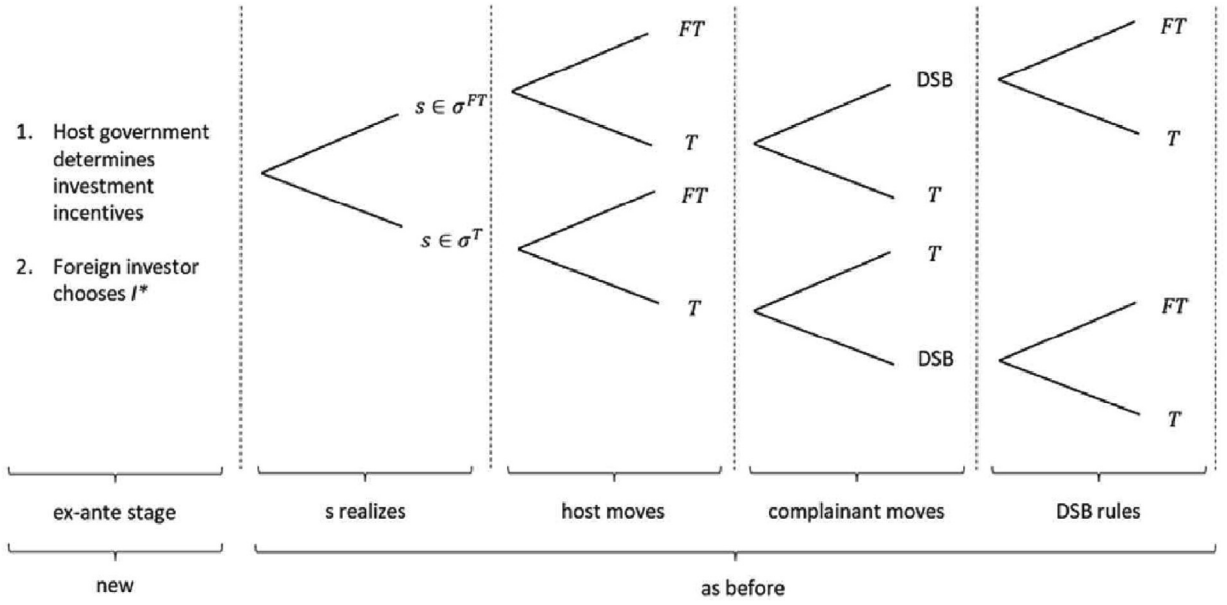

Fig. 3. Timing of Events (Investment Agreement).

then use international lump sum transfers to divide between them the expected surplus associated with the reduction of ex-post inefficiencies.

The fact that the choice of standing for the investment agreement only has implications for ex-post efficiency under this fixed-investment assumption provides a simple way to bring the investment agreement setting closest to the trade agreement setting analyzed in the previous section. And in so doing this assumption allows us to generate a transparent preview of the key distinction across the trade agreement and investment agreement settings, a distinction that we will demonstrate continues to account for our distinct findings about optimal standing choices in investment agreements when we consider the full game with endogenous Foreign investment levels and a program of up-front investment incentives.

4.2.1. When the foreign investment level is fixed and sunk

To proceed with our analysis of standing in investment agreements under the assumption that Foreign investment is taken as fixed and sunk at some exogenous level I^* at the time that the investment agreement is designed, recall that for the Host government, the ex-post gain from a taking, $\bar{\gamma}_G(I^*,s)$ as defined in (4.1), is positive in all states of the world, while the loss to the Foreign investor as defined in (4.2) is given by $\bar{\gamma}^*_{I^*}(I^*,s) = -PS(I^*,s)$. Similarly to our analysis of trade agreements in Section 3, here we allow the Foreign government's loss from a taking (and hence payoff from winning in court) to differ from that of the Foreign investor, and we capture the loss from a taking for each of these Foreign agents with the simple parameterization $\bar{\gamma}^*_a(I^*,s) \equiv -\bar{\gamma}^*_a(s)PS(I^*,s)$ for $a \in \{G^*,I^*\}$, where the parameter $\bar{\gamma}^*_{I^*}(s) \equiv 1$ by (4.2) and where we will later place restrictions on the parameter $\bar{\gamma}^*_{G^*}(s)$ but for now only assume that it is positive. We denote by $\bar{c}^*_a(\cdot)$ the cost incurred by Foreign agent a whenever it invokes the DSB, and we allow this cost to be a function of the level of investment I^*, and in particular we assume that this cost rises in proportion to the magnitude of the producer surplus (operating profits) that is at stake in the taking. Formally, we assume that the cost incurred by Foreign agent a if it invokes the DSB in state s is given by $\bar{c}^*_a(I^*,s) \equiv \bar{c}^*_a(s)PS(I^*,s)$. We make the analogous assumption for the Host government: if the Host government is taken to court in state s, it incurs a cost $\bar{c}(I^*,s) \equiv \bar{c}(s)\bar{\gamma}_G(I^*,s)$ to defend the taking.[29]

As in Section 3, we assume that the realized state s is observed by all agents including the DSB, and that $\bar{\Gamma}$ is observed by the agents but not by the DSB.[30] And as before, we will think of the DSB as issuing a policy ruling, in the present context denoted by ι^{DSB} and corresponding either to FT or T, to maximize the expected ex-post (once-the-foreign-investment-is-sunk) joint payoff of the Host government and the Foreign investor given its noisy signal of $\bar{\Gamma}$.

[29] As will become clear below, allowing dispute costs to rise with the level of foreign investment in this way ensures that the Foreign filing decision and Host policy choice are independent of the level of investment I^*, simplifying the analysis to follow.

[30] And we are assuming implicitly that the DSB cannot observe what the Host government does with the production facility if it expropriates it, i.e., whether or not the facility is shut down. This assumption would be straightforward to relax in a richer model in which production is not continued in all states $s \in \sigma^{FT}$ and discontinued in all states $s \in \sigma^T$ following a taking, perhaps because the Host government also has imperfect information about $\bar{\Gamma}$.

Court behavior looks much like that under our trade agreement analysis of Section 3. Consider first the Foreign complainant's filing behavior. If the agreement includes only SSDS, then only the Foreign government has standing to file a complaint, and the ratio of its court costs to court stakes is given by $\frac{\bar{c}^*_{G^*}(I^*,s)}{|\bar{\gamma}^*_{G^*}(I^*,s)|} = \frac{\bar{c}^*_{G^*}(s)}{\bar{\gamma}^*_{G^*}(s)} \equiv \bar{\mu}^*_{G^*}(s)$. If the agreement includes both SSDS and ISDS, then both the Foreign government and the Foreign investor have standing, and in principal either may file a complaint.[31] We denote this case with the subscript $G^*\&I^*$, and define the minimum ratio of court costs to court stakes across the Foreign agents with standing: $\frac{\bar{c}^*_{G^*\&I^*}(I^*,s)}{|\bar{\gamma}^*_{G^*\&I^*}(I^*,s)|} \equiv \min\left\{\frac{\bar{c}^*_{G^*}(I^*,s)}{|\bar{\gamma}^*_{G^*}(I^*,s)|}, \frac{\bar{c}^*_{I^*}(I^*,s)}{|\bar{\gamma}^*_{I^*}(I^*,s)|}\right\} = \min\left\{\frac{\bar{c}^*_{G^*}(s)}{\bar{\gamma}^*_{G^*}(s)}, \frac{\bar{c}^*_{I^*}(s)}{\bar{\gamma}^*_{I^*}(s)}\right\} \equiv \bar{\mu}^*_{G^*\&I^*}(s)$. It then follows that for $f \in \{G^*, G^*\&I^*\}$ and the designation of standing that f implies, a complaint is filed in state s if and only if $\iota = T$ and

$$\Pr(\text{DSB ruling is } FT|s) \;>\; \bar{\mu}^*_f(s). \tag{4.6}$$

According to (4.6), the Home government's selection of $\iota = T$ will be met with a filing in state s if and only if there is a Foreign agent with standing such that, for that agent, the expected benefit of filing exceeds the cost of filing.

Next consider the Host government's ex-post policy choice. Defining the ratio of the Host government's court costs to court stakes by $\bar{\mu}(s) \equiv \frac{\bar{c}(I^*,s)}{\bar{\gamma}_G(I^*,s)} = \bar{c}(s)$, the Host government chooses $\iota = T$ if either (4.6) fails – because then $\iota = T$ can be set without triggering a dispute – or if (4.6) holds and the expected benefit to the Host government from a taking exceeds the cost to the Host government of a dispute:

$$\Pr(\text{DSB ruling is } T|s) \;>\; \bar{\mu}(s). \tag{4.7}$$

We can now derive the equilibrium actions, conditional on investment level I^*, for each state s. For simplicity and as before, in what follows we assume that the states where the vague contract is unambiguous are measure zero, so we can focus only on states where the court if invoked must interpret the contract. And as before, we also assume that dispute costs are low relative to dispute stakes in the following specific sense:

$$\bar{\mu}(s) + \bar{\mu}^*_f(s) < 1 \quad \text{for } f \in \{G^*, G^*\&I^*\} \quad \text{and all } s. \tag{Assumption 1′}$$

Noting that $\bar{\mu}(s) < 1 - \bar{\mu}^*_f(s)$ and $\bar{\mu}^*_f(s) < 1 - \bar{\mu}(s)$ when the dispute costs are low relative to the dispute stakes in the sense of Assumption 1′, conditions (4.6) and (4.7) imply:

Lemma 2. *Equilibrium actions in the presence of an investment agreement are as follows:*

1. *In states $s \in \sigma^{FT}$: If DSB quality is high in the sense that $qk(s) \le \bar{\mu}(s)$, we have $\iota = FT$ and no dispute; if DSB quality is intermediate in the sense that $qk(s) \in (\bar{\mu}(s), 1 - \bar{\mu}^*_f(s))$, we have $\iota = T$ and a dispute; if DSB quality is low in the sense that $qk(s) \ge 1 - \bar{\mu}^*_f(s)$, we have $\iota = T$ and no dispute.*

2. *In states $s \in \sigma^{T}$: If DSB quality is high in the sense that $qk(s) \le \bar{\mu}^*_f(s)$, we have $\iota = T$ and no dispute; if DSB quality is intermediate in the sense that $qk(s) \in (\bar{\mu}^*_f(s), 1 - \bar{\mu}(s))$, we have $\iota = T$ and a dispute; if DSB quality is low in the sense that $qk(s) \ge 1 - \bar{\mu}(s)$, we have $\iota = FT$ and no dispute.*

A common concern in the policy debate on investment agreements is that such agreements bring about 'regulatory chill' in the sense of preventing governments from implementing socially desirable regulation. Notice that, under the interpretation that $\iota = T$ corresponds to a regulatory taking, this is exactly what happens in our model in states $s \in \sigma^T$ for low DSB quality, and also in case of a court mistake for intermediate DSB quality, as stated in Lemma 2 part 2. Importantly, however, investment agreements can also bring about 'regulatory excess' in our model in the sense of allowing the Host government to get away with socially undesirable regulation. This happens in our model for states $s \in \sigma^{FT}$ for low DSB quality, and also in case of a court mistake for intermediate DSB quality, as stated in Lemma 2 part 1. As we will see shortly, these possibilities for under- and overregulation are important considerations when assessing the case for including ISDS in investment agreements.

To proceed, note that Lemma 2 has a completely analogous structure to Lemma 1, in the sense that the equilibrium actions described by Lemma 2 mirror those of Lemma 1 and follow an intuitive sorting along the dimension of DSB quality: if the DSB quality is high, the Host government makes the efficient policy choice and there is no dispute; if the DSB quality is intermediate, the Host government chooses $\iota = T$ and there is a dispute; and if the DSB quality is low, the Host government

[31] As with our analysis of trade agreements, we abstract here from a potential free rider problem that could arise when Foreign investors have standing and which could interfere with their ability to file even when it is in their interests as a group to do so, this time in the form of the possibility that several firms might be threatened by the same Host-government policy. But as we discussed in note 15, our results are robust to the inclusion of free-rider problems provided that they are not so severe as to prevent the Foreign investor from ever filing.

chooses the inefficient policy and there is no dispute. Using this fact, and defining the sets $\bar{\sigma}_1^{FT} \equiv \{s \in \sigma^{FT} | qk(s) \leq \bar{\mu}(s)\}$, $\bar{\sigma}_{2,f}^{FT} \equiv \{s \in \sigma^{FT} | qk(s) \in (\bar{\mu}(s), 1 - \bar{\mu}_f^*(s))\}$, and $\bar{\sigma}_{3,f}^{FT} \equiv \{s \in \sigma^{FT} | qk(s) \geq 1 - \bar{\mu}_f^*(s)\}$, as well as $\bar{\sigma}_{1,f}^{T} \equiv \{s \in \sigma^{T} | qk(s) \leq \bar{\mu}_f^*(s)\}$, $\bar{\sigma}_{2,f}^{T} \equiv \{s \in \sigma^{T} | qk(s) \in (\bar{\mu}_f^*(s), 1 - \bar{\mu}(s))\}$, and $\bar{\sigma}_3^{T} \equiv \{s \in \sigma^{T} | qk(s) \geq 1 - \bar{\mu}(s)\}$, we can proceed in analogy with our trade agreement analysis and, under our fixed-investment assumption, write down the expected ex-post efficiency loss, relative to the first-best ex-post policy outcome, that is associated with standing choice $f \in \{G^*, G^* \& I^*\}$ in combination with the vague contract and interpretive court mandate, a combination of design features that we denote by $\bar{V}_f$ and refer to as the $\bar{V}_f$ *institution*. Denoting this efficiency loss by $L(\bar{V}_f, I^*)$, we have

$$L\left(\bar{V}_f, I^*\right) = \sum_{s \in \bar{\sigma}_{2,f}^{FT} \cup \bar{\sigma}_{2,f}^{P}} p(s) qk(s) \left|\bar{\Gamma}(I^*, s)\right| + \sum_{s \in \bar{\sigma}_{2,f}^{FT} \cup \bar{\sigma}_{2,f}^{P}} p(s) \left[\bar{c}(I^*, s) + \bar{c}_a^*(I^*, s)\right] + \sum_{s \in \bar{\sigma}_{3,f}^{FT} \cup \bar{\sigma}_{3}^{P}} p(s) \left|\bar{\Gamma}(I^*, s)\right|. \tag{4.8}$$

The interpretation of the expression for $L(\bar{V}_f, I^*)$ given in (4.8) is identical to the interpretation of the expression for $L(V_f)$ given in (3.3): each line of expression (4.8) captures a distinct source of inefficiency arising under the $\bar{V}_f$ institution. The first term captures the loss associated with DSB error. The second term captures the loss arising from the cost of a dispute. And the third term is the loss arising from distorted choices made "in the shadow of the court."

As with our analysis of standing in trade agreements in Section 3, evaluating the case for including ISDS in an investment agreement requires that we adopt a stance on the Foreign complainant's cost of filing and payoff from winning in court under each choice of standing, and in this regard we impose analogous assumptions to our earlier Assumption 2 and Assumption 3. In particular, we assume that the cost of filing for the Foreign government is the same as the cost of filing for the Foreign investor, namely:

$$\bar{c}_{G^*}^*\left(I^*, s\right) = \bar{c}_{I^*}^*\left(I^*, s\right) \equiv \bar{c}^*\left(I^*, s\right) \quad \text{for all } s \text{ and all } I^* \tag{Assumption 2′}$$

which amounts to the parameter restriction $\bar{c}_{G^*}^*(s) = \bar{c}_{I^*}^*(s) \equiv \bar{c}^*(s)$ for all s since then $\bar{c}_{G^*}^*(I^*, s) = \bar{c}^*(s) PS(I^*) = \bar{c}_{I^*}^*(I^*, s)$ for all s and all I^*. And we assume that there is at least one marginal filing state in which the payoff from winning in court is greater for the Foreign investor than it is for the Foreign government:

$$\left|\bar{\gamma}_{I^*}^*\left(I^*, s\right)\right| > \left|\bar{\gamma}_{G^*}^*\left(I^*, s\right)\right| \quad \text{for a least one marginal filing state } s \quad \text{and all } I^* \tag{Assumption 3′}$$

which amounts to the restriction $1 = \bar{\gamma}_{I^*}^*(s) > \bar{\gamma}_{G^*}^*(s)$ for a least one marginal filing state s since then $\left|\bar{\gamma}_{I^*}^*(I^*, s)\right| = PS(I^*, s) > \bar{\gamma}_{G^*}^*(s) PS(I^*, s) = \left|\bar{\gamma}_{G^*}^*(I^*, s)\right|$ for this state s and all I^*.

Similar to Assumption 2 and Assumption 3, Assumption 2′ and Assumption 3′ ensure that there is at least one state where a filing would not occur under SSDS alone but would occur if ISDS were also included, and hence ensures that when ISDS is included there is at least one state where filing reflects Foreign investor over public interests. As discussed in Section 2, to motivate Assumption 3′ we have in mind that the Foreign government applies a "political filter," which takes into account the broader political, diplomatic and public relations repercussions of winning in court against Home. For example, consider the tobacco plain-packaging disputes brought by Philip Morris under the ISDS provisions of the Switzerland-Uruguay and Hong Kong-Australia BITS. Given the controversy surrounding these disputes and the broader issue of smoking, it seems highly unlikely that the governments of Switzerland and Hong Kong could have been persuaded to bring these actions under SSDS. More generally, the spirit of our Assumption 3′ is supported by a substantial body of literature, including Levy and Srinivasan (1996), Guzman (1998), Sykes (2005) and Lim et al. (2021).

Given Assumption 2′ and Assumption 3′, we now ask: Are there conditions (model parameter ranges) under which ISDS could be part of an optimally designed investment agreement when the level of Foreign investment is taken as fixed and sunk at the time the agreement is designed? To answer this question, we again write down expressions for the expected ex-post efficiency loss under each choice of standing relative to the first-best ex-post policy outcome as we did for the analysis of trade agreements in the previous section. That is, we define $\Delta_{G^* \& I^*, G^*}(I^*) \equiv -\left[L\left(\bar{V}_{G^* \& I^*}, I^*\right) - L\left(\bar{V}_{G^*}, I^*\right)\right]$, seeking conditions under which $\Delta_{G^* \& I^*, G^*}$ is positive, which then amounts to conditions under which ISDS is part of an optimal investment agreement when investment is taken as fixed.

To write down an expression for $\Delta_{G^* \& I^*, G^*}(I^*)$, we first define the sets

$$\bar{\Omega}_S^T \equiv \left\{s \in \sigma^T \middle| qk(s) \in \left(\bar{\mu}_{I^*}^*(s), \bar{\mu}_{G^*}^*(s)\right)\right\} \quad \text{and} \quad \bar{\Omega}_S^{FT} \equiv \left\{s \in \sigma^{FT} \middle| qk(s) \in \left[1 - \bar{\mu}_{G^*}^*(s), 1 - \bar{\mu}_{I^*}^*(s)\right)\right\}.$$

As defined, the set $\bar{\Omega}_S^T$ describes states in σ^T where the Host government would implement a taking without court challenge under SSDS but would face litigation under ISDS, while the set $\bar{\Omega}_S^{FT}$ describes states in σ^{FT} where the Host government would implement a taking with impunity under SSDS but would face litigation under ISDS. With these new sets defined and using (4.10),

we can now write

$$\Delta_{G^*\&I^*,G^*}(I^*) = -\sum_{s\in\bar{\Omega}_S^T} p(s)\left[qk(s)\bar{\Gamma}(I^*,s) + \bar{c}(I^*,s) + \bar{c}^*(I^*,s)\right] - \sum_{s\in\bar{\Omega}_S^{FT}} p(s)\left\{\left[qk(s)|\bar{\Gamma}(I^*,s)| + \bar{c}(I^*,s) + \bar{c}^*(I^*,s)\right] - |\bar{\Gamma}(I^*,s)|\right\}. \tag{4.9}$$

Expression (4.9) summarizes the costs and benefits associated with the additional litigation arising when ISDS is added to SSDS in the investment agreement. On its surface, it is completely analogous to our earlier expression (3.4) pertaining to trade agreements. As with (3.4), the first term of (4.9) describes the impacts of the extra litigation that challenges an efficient policy and hence introduces nothing but court error and litigation costs, and this term is clearly negative. And as with (3.4), the second term describes the impacts of the extra litigation that challenges an *in*efficient policy.

However, unlike with (3.4) where the sign of the second term is also negative and ensures that ESDS in a trade agreement is never desirable, the sign of the second term of (4.9) is *ambiguous*, raising the possibility that in some circumstances the inclusion of ISDS in an investment agreement could be warranted. This can be confirmed by using (4.3) to express the second term of (4.9) in equivalent form

$$\sum_{s\in\bar{\Omega}_S^{FT}} p(s)\left\{\left[(1-qk(s))PS(I^*,s) - \bar{c}^*(I^*,s)\right] - \left[(1-qk(s))\kappa PS(I^*,s) + \bar{c}(I^*,s)\right]\right\},$$

and noting that the first term in square brackets must be positive by the filing condition for Foreign investors in the set of states $s \in \bar{\Omega}_S^{FT}$, that is, for states in σ^{FT} where the Host government would implement a taking with impunity under SSDS but would face litigation under ISDS. Evidently, the entire expression will then be positive if the second term in square brackets is sufficiently small, which is guaranteed if κ and $\bar{c}$ are sufficiently small, that is, if the Host government is highly inefficient in orchestrating takings when expropriation is not socially efficient and bears little cost of defending itself in court. Moreover, the set of states over which this expression is summed, $\bar{\Omega}_S^{FT}$, will be larger the smaller is $\bar{\gamma}_{G^*}^*(s)$, that is, the greater the divergence is between the Foreign government and Foreign investors in the payoff to filing according to Assumption 3′. Finally, note that the first term of (4.9) will approach zero as the probability of states $s \in \sigma^T$ approaches zero. Hence, with the second term of (4.9) guaranteed to be positive if κ and $\bar{c}$ are sufficiently small and large if $\bar{\gamma}_{G^*}^*(s)$ is also small, adding ISDS to SSDS in an investment agreement will be desirable if it is sufficiently rare for a taking to be socially efficient.

Summarizing, we may now state:

Proposition 2. *In a setting where Foreign investment is fixed and sunk at some exogenous level so that only ex-post inefficiencies are at issue and the optimal choice of standing maximizes the ex-post expected joint surplus of the Host government and the Foreign investor, it is possible that an optimally designed investment agreement will include both SSDS and ISDS. In particular, if expropriation is socially efficient only in unusual circumstances, if the Host government is highly inefficient in orchestrating takings when expropriation is not socially efficient and bears little cost of defending itself in court, and if the Foreign government faces high political costs of initiating disputes, then it is optimal to include both SSDS and ISDS in an investment agreement. That is, under these conditions it is optimal to allow both governments and their investors to have standing to bring disputes in an investment agreement.*

Given the completely analogous structures of $\Delta_{G^*\&I^*,G^*}(I^*)$ as contained in (4.9) and $\Delta_{G^*\&E^*,G^*}$ as contained in (3.4), why is it that $\Delta_{G^*\&I^*,G^*}(I^*)$ can be positive, implying conditions under which an optimally designed investment agreement should include both SSDS and ISDS as Proposition 2 records, while $\Delta_{G^*\&E^*,G^*}$ can never be positive, implying that adding ESDS to SSDS in a trade agreement can never be optimal as Proposition 1 reports? To understand the source of this distinction, recall that in the case of an investment agreement designed in the presence of a fixed and sunk Foreign investment level, efficiency is judged relative to the expected (ex-post) joint surplus of the *Home government and the Foreign investor*, because the investment agreement addresses an inefficiency created by a *government-to-investor policy commitment problem*. So the optimal choice of standing for an investment agreement is the choice that leads to the greatest level of expected joint surplus for the Host government and the Foreign investor. But for a trade agreement, efficiency is judged relative to the expected joint surplus of the *Home and Foreign governments* because those agreements address an inefficiency created by a *government-to-government international policy externality*; a trade agreement that maximized the joint surplus of the Home government and the foreign *exporter* would not be efficient for the two countries, because the Home government's trade policy choice also impacts consumers and non-exporting producers in the Foreign country, and it is the Foreign government who must aggregate these various foreign interests and represent them in the trade agreement with the Home government. So the optimal choice of standing for a trade agreement is the choice that leads to the greatest level of expected joint surplus for the two governments.

In other words, in the case of an investment agreement it is the Foreign *investor* who is the foreign principal, while in the case of a trade agreement it is the Foreign *government* who is the foreign principal. It is this distinction that accounts for the difference in our findings about optimal standing across the two types of agreements as reported in Propositions 1 and 2. In particular, in both settings if the foreign principal is granted standing it will be overly litigious at the margin of litigation – in the sense that it chooses to file, when from the perspective of the expected joint surplus of the Home/Host government and the Foreign principal it should not file – owing to the negative effects on the Home/Host government that the Foreign principal does not internalize when making its filing decision; and in both settings moving beyond SSDS to provide standing also to private agents – to exporters via ESDS in the case of a trade agreement, and to investors via ISDS in the case of an investment agreement – will only

encourage litigation under Assumption 3 and Assumption 3′. In the case of a trade agreement, where the Foreign principal is the Foreign government and therefore where SSDS alone already leads to overly litigious filing behavior at the margin, it would therefore never make sense to introduce the possibility of an even more aggressive filer by allowing Foreign exporters to also file via ESDS, as Proposition 1 reports and as we explained in Section 3. However, for an investment agreement, where the Foreign principal is the Foreign investor and therefore where we can only be sure that there will be overly litigious behavior at the margin if ISDS is included along with SSDS, it *might* make sense to *exclude* ISDS from the agreement and allow only the Foreign government to have standing via SSDS, but *not* if excluding Foreign investors from standing would lead to the opposite problem of insufficiently aggressive filing behavior at the margin, and to a degree that was sufficiently severe. This is the message of Proposition 2.

Finally, we can ask whether the conditions specified in Proposition 2 are likely to hold in the real world. Certainly the case for ISDS implied by Proposition 2 is far from absolute. But Proposition 2 does support the position that including ISDS in an investment agreement could be optimal under the right circumstances, a position that categorically could not be supported regarding the inclusion of ESDS in a trade agreement according to Proposition 1.

4.2.2. Endogenizing the level of foreign investment

We now consider the optimal choice of standing in the full game described in Fig. 3, where the level of Foreign investment is endogenous and the Host government can also offer an up-front investment incentive. As we have noted, in light of our small country assumption Foreign investors must be guaranteed an expected ex-ante rate of return r^* on any investment made in the Host country. Hence, to attract a level of foreign investment I^* under an investment agreement with standing choice $f \in \{G^*, G^*\&I^*\}$, the Host government must offer an up-front investment subsidy in the amount of $\{r^* - E_s[\rho_f^*(I^*,s)]\}I^*$, where $E_s[\rho_f^*(I^*,s)]$ is the expected ex-post return to the Foreign investor that derives from its operating profits on an investment of I^* under an investment agreement with standing choice f. This level of investment subsidy assures that the investment I^* will earn the expected ex-ante world market rate of return r^* in the Host country once both the up-front investment subsidy and the expected ex-post payoff to the investment are accounted for. Notice also that from an ex-ante perspective, Foreign investors are unaffected by the policies of the (small) Host country, and so only the Host country's ex-ante expected payoff can be affected by its treatment of Foreign investors.

Therefore, in the full game the Host government chooses the up-front investment incentive and the design of standing in its investment agreement to maximize its own ex-ante expected payoff, subject to the constraint that to induce the level of investment I^* in the presence of standing choice $f \in \{G^*, G^*\&I^*\}$ it must offer an up-front investment incentive in the amount of $\{r^* - E_s[\rho_f^*(I^*,s)]\} \times I^*$. By substituting this constraint into the Host government's objective function, we can then recast the Host government's problem as one of choosing the standing f for its investment agreement and a level of Foreign investment I^* to maximize its expected payoff, where this expected payoff can be written as

$$\begin{aligned} E_s\left[\bar{\omega}_f(I^*,s)\right] = & \sum_{s\in\bar{\sigma}_1^{FT}} p(s)CS(I^*,s) \\ & + \sum_{s\in\bar{\sigma}_{2f}^{FT}} p(s)\left\{CS(I^*,s) + qk(s)\left[\kappa PS(I^*,s)\right] - \bar{c}(I^*,s)\right\} \\ & + \sum_{s\in\bar{\sigma}_{3f}^{FT}} p(s)\left[CS(I^*,s) + \kappa PS(I^*,s)\right] \\ & + \sum_{s\in\bar{\sigma}_{2f}^{T}} p(s)\left\{qk(s)\left[CS(I^*,s) - e(I^*,s)\right] - \bar{c}(I^*,s)\right\} \\ & + \sum_{s\in\bar{\sigma}_3^{T}} p(s)\left[CS(I^*,s) - e(I^*,s)\right] \\ & - \left\{r^* - E_s\left[\rho_f^*(I^*,s)\right]\right\} \times I^*. \end{aligned}$$

But using the equilibrium actions described by Lemma 2, the expected return on I^* that derives from the expected ex-post operating profits is given by

$$\begin{aligned} E_s\left[\rho_f^*(I^*,s)\right] = & \sum_{s\in\bar{\sigma}_1^{FT}\cup\bar{\sigma}_3^{T}} p(s)\tilde{P}(I^*,s) \\ & + \sum_{s\in\bar{\sigma}_{2f}^{FT}} p(s)\left\{[1 - qk(s)]\tilde{P}(I^*,s) - \frac{\bar{c}_f^*(I^*,s)}{I^*}\right\} \\ & + \sum_{s\in\bar{\sigma}_{2f}^{T}} p(s)\left[qk(s)\tilde{P}(I^*,s) - \frac{\bar{c}_f^*(I^*,s)}{I^*}\right], \end{aligned}$$

implying

$$E_s\left[\rho_f^*(I^*,s)\right]\times I^* = \sum_{s\in\sigma_1^{FT}\cup\sigma_3^T} p(s)PS(I^*,s) + \sum_{s\in\sigma_{2f}^{FT}} p(s)\left\{[1 - qk(s)]PS(I^*,s) - \bar{c}_f^*(I^*,s)\right\} + \sum_{s\in\sigma_{2f}^{T}} p(s)\left[qk(s)PS(I^*,s) - \bar{c}_f^*(I^*,s)\right].$$

Plugging the expression for $E_s[\rho_f^*(I^*,s)]\times I^*$ into the above expression for $E_s\left[\bar{\omega}_f(I^*,s)\right]$ and using the definition of $\bar{\Gamma}(I^*,s)$ given in (4.3) yields

$$\begin{aligned} E_s\left[\bar{\omega}_f(I^*,s)\right] = & \sum_{s\in\sigma_1^{FT}} p(s)\left[CS(I^*,s)+PS(I^*,s)\right] \\ & + \sum_{s\in\sigma_{2f}^{FT}} p(s)\left\{CS(I^*,s)+PS(I^*,s)+qk(s)\bar{\Gamma}(I^*,s) - \bar{c}(I^*,s) - \bar{c}_f^*(I^*,s)\right\} \\ & + \sum_{s\in\sigma_{3f}^{FT}} p(s)\left[CS(I^*,s)+PS(I^*,s)+\bar{\Gamma}(I^*,s)\right] \\ & + \sum_{s\in\sigma_{2f}^{T}} p(s)\left\{qk(s)\left[-\bar{\Gamma}(I^*,s)\right] - \bar{c}(I^*,s) - \bar{c}_f^*(I^*,s)\right\} \\ & + \sum_{s\in\sigma_3^{T}} p(s)\left[-\bar{\Gamma}(I^*,s)\right] \\ & - r^*I^*. \end{aligned} \tag{4.10}$$

The expression for $E_s\left[\bar{\omega}_f(I^*,s)\right]$ in (4.10) has an intuitive interpretation, once it is understood that the Host government must pay the Foreign investor the amount r^*I^* in equilibrium, as reflected in the last line of this expression. With this paid, it is then as if the Host government *keeps for itself* the ex-post expected joint surplus generated by I^* for the Host government and the Foreign investor according to the equilibrium behavior in the presence of an investment agreement with standing choice $f\in\{G^*, G^*\&I^*\}$ as characterized in Lemma 2. The first five lines of (4.10) record this ex-post expected joint surplus in the five sets of states where it is non-zero. This interpretation can be confirmed by noting that the efficient policy yields a joint surplus of $CS(I^*,s)+PS(I^*,s)$ in states $s\in\sigma^{FT}$ and 0 in states $s\in\sigma^T$, the inefficient policy yields a joint surplus of $CS(I^*,s)+\kappa PS(I^*)=\left[CS(I^*)+PS(I^*)+\bar{\Gamma}(I^*,s)\right]$ in states $s\in\sigma^{FT}$ and $-\bar{\Gamma}(I^*,s)<0$ in states $s\in\sigma^T$, the DSB makes a mistake with probability $qk(s)$, and invoking the DSB costs $c(I^*,s)+c_f^*(I^*,s)$.

The interpretation of $E_s\left[\bar{\omega}_f(I^*,s)\right]$ carries with it an important implication: for any investment level I^* that the Host government wishes to induce with its program of up-front investment incentives, the Host government's ex-ante expected payoff will be maximized by the choice of standing in an investment agreement that maximizes the ex-post expected joint surplus for the Host government and the Foreign investor in light of that investment level (i.e., all but the last line of (4.10)). We record this observation in:

Proposition 3. *In the full game described in Fig. 3, where the level of Foreign investment is endogenous and the Host government can also offer an up-front investment incentive, the optimal choice of standing in the investment agreement maximizes the ex-post expected joint surplus of the Host government and the Foreign investor.*

Since Proposition 2 characterized the choice of standing that maximizes the ex-post expected joint surplus of the Host government and the Foreign investor given any (exogenous) level of Foreign investment, Proposition 3 allows us to apply the results of Proposition 2 to the full game described in Fig. 3, and we can therefore conclude that the results of Proposition 2 continue to apply. To see why, let us define $\bar{I}_{G^*}^*$ as the optimal level of Foreign investment under an investment treaty with SSDS alone, and similarly define $\bar{I}_{G^*\&I^*}^*$ as the optimal level of Foreign investment under an investment treaty with SSDS and ISDS. Proposition 2 describes conditions under which it would be optimal to include SSDS and ISDS in an investment agreement for any fixed level of Foreign investment, and hence fixing the level of Foreign investment at $\bar{I}_{G^*}^*$ these conditions imply $E_s[\bar{\omega}_{G^*\&I^*}(\bar{I}_{G^*}^*,s)]>E_s[\bar{\omega}_{G^*}(\bar{I}_{G^*}^*,s)]$. But since we must have $E_s[\bar{\omega}_{G^*\&I^*}(\bar{I}_{G^*\&I^*}^*,s)]\geq E_s[\bar{\omega}_{G^*\&I^*}(\bar{I}_{G^*}^*,s)]$, it follows that these same conditions ensure that $E_s[\bar{\omega}_{G^*\&I^*}(\bar{I}_{G^*\&I^*}^*,s)]>E_s[\bar{\omega}_{G^*}(\bar{I}_{G^*}^*,s)]$, and hence that under these conditions including SSDS and ISDS is optimal in the full game. In essence, then, and as Proposition 3 confirms, the availability of the up-front investment incentive implies that the Host government can handle the ex-ante inefficiencies with its up-front investment subsidies, and its choice of standing in the investment agreement can then remain focused on addressing ex-post inefficiencies, just as in our section-3 analysis of standing in trade agreements. We may therefore state:

Corollary 1. *In the full game described in Fig. 3, where the level of Foreign investment is endogenous and the Host government can also offer an up-front investment incentive, it is optimal to allow both governments and their investors to have standing to bring disputes in an investment agreement under the conditions described in Proposition 2, namely, if (i) expropriation is socially efficient only in unusual circumstances, (ii) the Host government is highly inefficient in orchestrating takings when expropriation is not socially efficient and bears little cost of defending itself in court, and (iii) the Foreign government faces high political costs of initiating disputes.*

4.2.3. Limitations on up-front investment subsidies

We now briefly reconsider our results on standing for investment agreements, under the assumption that up-front investment incentives are not an available policy option for the Host government, and when the investment agreement must therefore address both ex-ante and ex-post inefficiencies. Our purpose here is to show that the introduction of constraints on the availability of up-front investment incentives can only strengthen our finding that it can be optimal to include ISDS as well as SSDS in an investment agreement, because when up-front investment incentives are not available to achieve efficient Foreign investment levels, adding ISDS can then also help to mitigate this ex-ante inefficiency by stimulating Foreign investment.

If up-front investment incentives are not available, the Host government can no longer directly control the level of Foreign investment. Instead, in the absence of up-front investment incentives the equilibrium Foreign investment under an investment agreement with standing $f \in (G^*, G^*\&I^*)$, which we denote by $\tilde{I}^*_f$, is implicitly determined by $E_s[\rho^*_f(\tilde{I}^*_f, s)] = r^*$, since this investment level must equalize the expected return from ex post operating profits under the agreement with the Foreign investor's outside option of earning the world rate of return. As is easy to verify, we must have that $\tilde{I}^*_{G^*} < \tilde{I}^*_{G^*\&I^*}$. Intuitively, when up-front investment incentives are absent, adding ISDS to the investment agreement makes investing more attractive for Foreign investors, since it allows Foreign investors to litigate in line with their own interests without having to delegate their filing choices to an imperfect agent (the Foreign government under SSDS). And we must also have $\tilde{I}^*_{G^*\&I^*} < \bar{I}^*_{G^*\&I^*}$, since eliminating the possibility of up-front investment incentives must reduce the equilibrium Foreign investment level under a given investment agreement (and hence one that includes SSDS and ISDS).

To reconsider the conditions under which an investment agreement with ISDS is superior when up-front investment incentives are unavailable, we build on our earlier eq. (4.10) and consider the decomposition $\tilde{\Delta} = \tilde{\Delta}_{ex\text{-}post} + \tilde{\Delta}_{ex\text{-}ante}$, where

$$\tilde{\Delta} \equiv E_s\left[\bar{\omega}_{G^*\&I^*}\left(\tilde{I}^*_{G^*\&I^*}, s\right)\right] - E_s\left[\bar{\omega}_{G^*}\left(\tilde{I}^*_{G^*}, s\right)\right],$$
$$\tilde{\Delta}_{ex\text{-}post} \equiv E_s\left[\bar{\omega}_{G^*\&I^*}\left(\tilde{I}^*_{G^*}, s\right)\right] - E_s\left[\bar{\omega}_{G^*}\left(\tilde{I}^*_{G^*}, s\right)\right], \text{ and}$$
$$\tilde{\Delta}_{ex\text{-}ante} \equiv E_s\left[\bar{\omega}_{G^*\&I^*}\left(\tilde{I}^*_{G^*\&I^*}, s\right)\right] - E_s\left[\bar{\omega}_{G^*\&I^*}\left(\tilde{I}^*_{G^*}, s\right)\right].$$

We look for conditions under which $\tilde{\Delta}$ is positive, and hence where the inclusion of ISDS in the investment agreement is preferred. Notice that $\tilde{\Delta}_{ex\text{-}post}$ is simply Eq. (4.9) evaluated at the level of Foreign investment $\tilde{I}^*_{G^*}$, and we know that this expression can be positive or negative depending on whether adding ISDS increases or reduces ex-post efficiency. What is new, therefore, is the term $\tilde{\Delta}_{ex\text{-}ante}$, which captures the impact of adding ISDS on ex-ante efficiency. But this term is positive, since adding ISDS moves investment closer to its efficient level given that $\tilde{I}^*_{G^*} < \tilde{I}^*_{G^*\&I^*} < \bar{I}^*_{G^*\&I^*}$. Hence, adding ISDS also helps address the ex-ante inefficiency when up-front investment incentives are unavailable, and in this sense the introduction of constraints on the availability of up-front investment incentives can only strengthen our finding that it can be optimal to include ISDS as well as SSDS in an investment agreement.

4.3. Standing for disputes over commitments to investors more generally

We have analyzed commitment issues with respect to foreign investors within the context of investment agreements. Arguably, similar issues may arise in the context of trade agreements: indeed, Yarbrough and Yarbrough (1992) argue that a central role for trade agreements is to allow importer governments to make policy commitments to foreign exporters who must make sunk investments in order to export to their markets.[32] In principle, our analysis above could be applied more or less directly to trade agreements wherever these agreements are designed to address such commitment issues, with an ESDS mechanism playing the role in trade agreements that is played by ISDS mechanisms in investment agreements.

However, we view such commitment issues as less important in the context of trade agreements than they are in the context of investment agreements, because the issue of sunk investments is likely to be more important in the context of FDI than in the context of exporting. There are several reasons to think that this distinction is important. First, and most obviously, there is a lack of any outright expropriation threat to the investments of exporters, in contrast to the case for FDI. But beyond this, in a multi-country world the investments made by exporters will commonly have alternative uses to produce exports for other markets – and to this extent therefore will not be sunk – whereas FDI would continue to be largely sunk and therefore highly susceptible to hold-up by the Host country in a multi-country world.

[32] See also McLaren (1997) whose analysis of a trade agreement between a large and a small country turns this argument for trade agreements on its head.

If one accepts this distinction, then it follows that the ex-ante investment problem is more important in the context of investment agreements than it is in the context of trade agreements. And if setting up ISDS involves a fixed-cost component so that it is not worth doing below some minimal level of hold-up threat, then this distinction could account for the inclusion of ISDS provisions in investment agreements when the conditions of Proposition 2 are satisfied but no analogous inclusion of ESDS provisions in trade agreements to handle commitment issues there. Likewise, if it is difficult to create an ESDS mechanism that limits private standing to cases where serious commitment problems arise, but denies it for market access disputes, this would provide a further rationale for the exclusion of ESDS from trade agreements even when those agreements are designed to address important commitment issues.

5. Conclusion

International investment agreements employ dispute settlement procedures that differ markedly from their counterparts in trade agreements. A prominent and controversial difference arises with respect to the issue of standing, i.e. the question of who has the right to complain to adjudicators about a violation of the agreement. While trade agreements limit standing to the member governments (state-to-state dispute settlement), investment agreements routinely extend standing to private investors as well (investor-state dispute settlement). In this paper we have developed parallel models of trade and investment agreements and have employed them to study this difference.

Our main finding is that the observed difference in standing can be understood as deriving from the fundamentally different problems that trade and investment agreements are designed to solve. We have shown that the state-to-state dispute settlement in trade agreements can be justified based on the government-to-government nature of trade agreements in combination with key features of the economic environment in which trade agreements operate. And we have shown that the investor-state-dispute settlement in investment agreements can be justified based on the government-to-investor nature of investment agreements, in combination with key features of the economic environment in which investment agreements operate.

Our analysis also identifies some important qualifications to the case for including investor-state dispute settlement provisions in investment agreements, thereby offering a potential explanation for the strong political controversy associated with these provisions. First, we have shown that including ISDS in addition to SSDS in an investment agreement is only optimal if governments are sufficiently poor agents for their investors: where government and investor incentives are only moderately misaligned, excluding ISDS from investment agreements may be the better option. And second, to the extent that the purpose of an investment agreement is primarily one of securing market access rather than helping governments make commitments to foreign investors, our findings indicate that the design features of its dispute settlement procedures should not stray far from those of the typical trade agreement.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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