ANTTI-LOBBYING GAINS FROM INTERNATIONAL AGREEMENTS

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Abstract

I argue that an important benefit of international agreements is to reduce wasteful rent-seeking activities by lobbies, through a reduction in policy discretion. I pay particular attention to the role of foreign lobbies, because to the extent that policy discretion induces rent-seeking activities by foreign lobbies, it imposes a negative externality on foreign countries. This negative international externality caused by policy discretion generates novel gains from international agreements. I examine the potential anti-lobbying effects of three types of international rules: exact policy commitments, policy bounds and non-discrimination rules.

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1. Introduction

Policy discretion invites wasteful rent-seeking activities by special interest groups. This insight has been emphasized by many scholars in economics and political science, including Tullock (1967), Krueger (1974), Bhagwati (1982), Bhagwati and Srinivasan (1982), Magee, Brock and Young (1989). When a government has wide discretion in choosing a policy, lobbies have strong incentives to spend resources in order to seek access to the government and influence its decision. In this way, inefficiencies can be caused not only by the policy itself, but also by the process that leads to it. This is true not only for domestic lobbies, but also for foreign special interest groups, to the extent that the government’s policy choice has an impact on foreign countries. Conversely, international agreements can lead to a reduction in wasteful rent-seeking activities, to the extent that they impose rules that constrain governments’ policy choices. I will refer to this broadly as the “anti-lobbying” gain from an international agreement.

I investigate the anti-lobbying gains from international agreements through a simple model where a government’s policy choice can be influenced by domestic and foreign lobbies, which have opposite interests regarding the policy. The lobbying game is modeled as a two-stage game: in the first stage, each lobby decides whether to seek access to the government ("rent seeking"), in which case it incurs a resource cost; in the second stage, the lobbies that have invested in rent-seeking engage in Nash bargaining with the government. If an international agreement is in place, the same rent-seeking game described above takes place, except that the policy is subject to the constraints set by the agreement.

While the anti-lobbying argument calls for some commitment mechanism that can tie a government’s hands, it is not obvious whether it calls specifically for international agreements. An alternative way for governments to tie their own hands is through unilateral commitments, such as domestic laws or constitutional rules. Whether international agreements are specifically called for depends on whether the deadweight loss caused by lobbying falls only on the domestic country or also on foreign countries. The former case is plausible if lobbying is purely domestic, but the latter case is more plausible if lobbying is at least in part cross-national. In the former case lobbying does not generate an international externality, so a domestic policy commitment is in principle sufficient to solve the problem. In the latter case, on the other hand, an international agreement is needed, because lobbying generates a negative international externality. For this reason, in what follows I will distinguish between the “anti-domestic-lobbying” and the “anti-
foreign-lobbying” effects of international agreements.¹

In the existing literature, there are two broad “stories” for international agreements. One broad story is that international agreements are motivated by the presence of international policy externalities.² The other story is that international agreements can help governments tie their own hands vis-a-vis certain groups of actors, such as producer lobbies. The new gain from international agreements that I explore in this paper combines a commitment aspect with an international-externality aspect: the presence of policy discretion itself generates a negative international externality, because it invites rent-seeking activities by foreign groups, and an international agreement can address such international externality by reducing policy discretion.

It is important to note that the anti-foreign-lobbying effect of international commitments is not a stand-alone rationale for an international agreement, or in other words, it is not separable from the “fundamental” policy externalities. Rather, it should be thought of as an “amplifier” of the more traditional gains from international agreements. Clearly, the anti-foreign-lobbying gains cannot exist without some fundamental international policy externality: if a country’s policies had no effect on foreign countries, there would be no foreign lobbying.

It has been suggested by several authors (for example, Gawande, Krishna and Robbins, 2006, and Blanchard, Bown and Johnson, 2017) that the presence of foreign lobbying reduces the scope for international agreements, since it induces a government to internalize part of the international policy externality, and thus brings the noncooperative policies closer to their cooperative levels. My model highlights a force that goes in the opposite direction: the potential for foreign lobbying can increase the value of international agreements, due to the anti-foreign-lobbying gains.

To put the anti-lobbying gains from international agreements in sharp relief, I start by

¹Maggi and Rodriguez-Clare (1998, 2007) and Mitra (2002) focus on domestic lobbying and argue that trade agreements can mitigate domestic commitment problems when it is not feasible to make unilateral commitments through constitutional law. This idea applies to any country, but with particular force to countries that have weak domestic institutions. The anti-foreign-lobbying argument for trade agreements, on the other hand, applies with equal force to developed and developing countries.

²In the area of trade policy, the international externality that has been studied the most is the standard terms-of-trade externality (see for example Bagwell and Staiger, 1999). In settings with market imperfections or multinationals, additional international externalities from trade policy can arise, including: (a) profit-shifting externalities (e.g. Brander and Spencer, 1985, and Ossa, 2014); (b) “firm-delocation” externalities (e.g. Venables, 1987, and Ossa, 2011); and (c) local-price externalities in the presence of multinationals (e.g. Blanchard, 2010). More generally, see Maggi (2014) for a discussion of the various types of international externalities from trade policy.
focusing on the simplest and most rigid type of international rules, namely *exact policy commitments*. This is a natural benchmark to consider, but international agreements rarely strip governments *completely* of their policy space, even within narrow policy areas, and for good reasons, such as the presence of uncertainty and contracting costs (see for example Horn et al, 2010). For this reason, while I do not model these possible benefits of policy discretion, I examine some salient types of international rules that preserve policy discretion along certain dimensions, and in particular, *policy bounds* and *non-discrimination rules*.

In section 2, I focus on policy bounds, and in particular on policy caps (i.e. rules of the kind \( t \leq \bar{t} \)). Examples of policy caps are tariff ceilings for trade agreements, or emission caps for environmental agreements, and the analysis extends in an obvious way to the case of policy floors, such as minimum product standards or environmental taxes. Unlike exact policy commitments (i.e. rules of the kind \( t = \bar{t} \)), policy caps may invite wasteful ex-post lobbying, so their implications are more subtle.

In particular, I consider a policy cap \( \bar{t} \) that is binding and is not so low that it removes the foreign lobby’s benefit from bargaining with the government (otherwise the cap has no interesting effects), and compare it with the corresponding exact policy commitment. The policy cap has very different effects depending on whether it is above the unilateral welfare-maximizing policy, in which case it does not affect the disagreement point in the government-lobbies bargain, or below it, in which case the cap becomes the disagreement point.

In the first case, the policy cap weakly increases the number of lobbies that engage in rent-seeking in equilibrium, and hence weakly reduces the anti-lobbying gains, relative to the corresponding exact policy commitment, and it foregoes all anti-lobbying gains if the rent-seeking costs are below some threshold levels.

In the second case, a surprising result emerges: if rent-seeking costs are below some threshold levels, the policy cap kills any pure strategy equilibrium of the rent-seeking game. The basic reason is the following: the foreign lobby has incentive to participate in the bargain only if the domestic lobby does not, because only in this case it can convince the government to lower the policy below the bound; and the domestic lobby has incentive to participate only if the foreign lobby does too, in which case it wants to prevent the policy from being lowered below the cap. In essence, what kills pure-strategy equilibria is a key asymmetry: given the opposite policy interests of the two lobbies, the cap is binding for the domestic lobby but not for the foreign lobby. In this case there exists only a mixed-strategy equilibrium in which each lobby engages
in rent-seeking with some probability, so in expectation the policy cap reduces rent-seeking waste relative to the non-cooperative scenario, but does not eliminate it.

In either case, unlike exact policy commitments, policy caps forego some of the potential anti-lobbying gains. This stands in interesting contrast with the point made by Maggi and Rodriguez-Clare (2007), who highlight a beneficial effect of policy caps: by inviting ex-post lobbying, a policy cap in a given sector induces the lobby to pay contributions to the government ex-post, thus reducing the net returns from investment in that sector, and hence reducing the ex-ante misallocation of resources. Taken together, these results suggest that policy discretion can have two opposite effects on the inefficiencies caused by lobbying, depending on the nature of these inefficiencies: if it induces lobbies to make monetary payments to the government and hence lowers the net returns to lobbying, it is beneficial; but if it induces lobbies to engage in wasteful activities, it is harmful.

In section 3, I consider a simple three-country version of the model in order to examine the potential role of non-discrimination rules. In the area of trade policy, the most prominent non-discrimination rule is the Most Favored Nation (MFN) rule, which allows a government to choose tariff levels but does not allow it to discriminate across foreign countries. But non-discrimination rules are relevant also in other policy areas, such as foreign direct investment, product standards and immigration policies.

In the absence of non-discrimination rules, a government is free to make policy concessions to foreign interest groups on a bilateral basis, resulting in a “spaghetti bowl” of bilateral rent-seeking activities (I owe the spaghetti-bowl metaphor to Richard Baldwin). Imposing a non-discrimination rule, on the other hand, can reduce or even eliminate rent-seeking by foreign lobbies, and the reason is that it injects a free-rider problem in the strategic interaction between foreign lobbies. For example, in the trade policy arena, the MFN rule implies that a foreign lobby seeking a lower tariff from the US government has to effectively lobby on behalf of all foreign lobbies, and this may discourage foreign lobbies from engaging in rent-seeking. This suggests that it may be possible to achieve part or all of the potential anti-foreign-lobbying gains without removing all policy discretion, but simply imposing non-discrimination rules.

An example of such spaghetti bowl in the real world is the flurry of foreign lobbying activities that followed Trump’s announcement of the 2018 steel and aluminum tariffs, whereby a number of foreign governments and interest groups frantically engaged the Trump administration in order to obtain bilateral exemptions to the tariffs. As a result of this, exemptions were granted to South Korea, Brazil, Argentina, Mexico and other countries. (Of course the MFN rule prohibits this kind of bilateral exemptions, but Trump simply gave it the finger.)
I use my model to examine formally the above intuition. I show that, relative to the non-cooperative scenario, imposing a non-discrimination rule weakly reduces the number of foreign lobbies that engage in rent-seeking in equilibrium, and the reduction is strict for a range of the rent-seeking cost parameter. Thus, for any ex-ante distribution of the rent-seeking cost parameter, imposing a non-discrimination rule decreases the equilibrium rent-seeking waste in a first-order stochastic sense. At the same time, however, a non-discrimination rule may worsen the policy outcome relative to the non-cooperative scenario, because foreign lobbying may push non-cooperative policies closer to their cooperative levels, and for this reason it is possible that imposing a non-discrimination rule is worse than imposing no rule at all.

Before proceeding, it is important to ask whether two key ingredients of my theory, namely the presence of foreign lobbying and the resource costs of lobbying, are empirically important.

Regarding the first question, there is little doubt that cross-national lobbying is a phenomenon of first-order empirical importance, especially across OECD countries. For example, in 2017 at least $534.7 million was spent by foreign interests to influence U.S. policy, with South Korea topping the list of countries, and trade policy topping the list of policy areas. In the academic literature, there are numerous papers that document the importance of foreign lobbying even before the Trump administration, for example Gawande, Krishna and Mitra (2006), Stoyanov (2009), Gawande, Maloney and Montes-Rojas (2018) and You (2018).

The other empirical question is, what is the magnitude of the resource costs generated by lobbying? This question is difficult to answer, but there is evidence that these costs are of first-order importance. For example, over the period 2009-2018, lobbying expenditures in the U.S. amounted to about $34 billion (Center for Responsive Politics). This amount was roughly 10 times larger than the amount of campaign contributions (Ludema, Mayda and Mishra, 2018). As another example, the Sunlight Foundation reports that the top 200 lobbying organizations from 2007 to 2012 spent a combined $5.3 billion on federal lobbying. Arguably, lobbying expenditures are at least in part wasteful, since they pay for lobbyists’ time, office space, travel costs and other inputs in the lobbying activity; all of these inputs could alternatively be used to produce goods and services. Incidentally, over the period 2009-2018 the number of registered lobbyists in the U.S. varied between 10,000 and 15,000. Moreover, the resource costs caused by rent-seeking arguably go well beyond the direct costs as measured by lobbying expenditures. For example, if a firm diverts resources from investment or innovative activities (e.g. R&D) in order

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to engage in rent-seeking, this may reduce its productivity. As another example, multinationals may choose to make foreign direct investments that they would not otherwise make if this can help them get access to foreign governments and influence their policies. Finally, even if firms use money to influence a government (e.g., through campaign contributions), this can indirectly induce misallocation of resources, as argued for example by Maggi and Rodriguez-Clare (1998, 2007).

In the related literature, the paper that is closest to the present one is arguably Mitra (2002). He considers a small-country government that chooses a tariff under the influence of domestic lobbies. A producer group can get organized into a lobby by paying a fixed setup cost. Mitra shows that the government may want to commit to free trade in order to prevent producer groups from incurring the fixed cost of getting organized. Mitra’s fixed cost of lobby formation plays a similar role to my domestic rent-seeking cost $\zeta^h$, but he does not consider foreign lobbying, which plays a central role in my analysis. Also, while Mitra only allows for an all-or-nothing commitment to free trade, I consider a wider set of feasible agreements, including exact tariff commitments, tariff caps and non-discrimination rules. Finally, unlike Mitra, I allow the home country to be large and face multiple foreign countries.

The paper is organized as follows. In section 2, I consider a two-country model to make a number of key points about the anti-lobbying gains from international agreements. In section 3, I extend the model to a three-country setting, in order to examine the role of non-discriminatory rules. In section 4, I discuss the endogenous determination of international rules. Section 5 concludes.

2. A Simple Two-Country Model

I start by considering a simple two-country model. As a running example I will often refer to a trade application where the relevant policies are tariffs, but the model is more general and can be applied to other policy areas as well, such as investment policies, environmental policies or immigration policies.

I consider two separable and mirror-image sectors, one where the Home government chooses a policy and the Foreign government is passive, and one where the roles are reversed. In a simple trade application where countries choose import tariffs, the Home government would choose an import tariff in one sector, and the Foreign government would choose an import
Given this simple structure, I can focus on the sector where Home is policy-active, and let \( t \) denote Home’s policy. The Home government can be influenced in its policy choice by two lobbies: a domestic lobby \((h)\) and a foreign lobby \((f)\). There are two types of cost that a lobby can incur: *contributions* to the Home government, which are pure transfers; and *rent-seeking expenditures*, which are resource costs.

I model the interaction between the government and the lobbies as a Nash bargain, and I assume that lobby \( j \in \{h,f\} \) has to incur a resource cost \( \xi^j \) in order to be able to bargain with the government. I will refer to these costs interchangeably as “rent-seeking costs” or “access costs.” I also assume that any access cost incurred by the foreign lobby falls entirely on the Foreign country, so it is not relevant for Home welfare.

I now describe the payoffs of the Home government and the two lobbies. The payoff of lobby \( j \in \{h,f\} \) has three components: the gross payoff from policy \( t \), which I denote \( \Pi^j(t) \), the contributions paid to the government, denoted \( C^j \), and the rent-seeking costs: 
\[
L^j = \Pi^j(t) - A^j \xi^j - C^j, \quad j = h, f
\]
where \( A^j \) is a dummy that is equal to one if the lobby \( j \) seeks access to the government, and zero otherwise.

I assume that \( \Pi^h(t) \) is increasing in \( t \), while \( \Pi^f(t) \) is decreasing in \( t \). Thus the domestic lobby and the foreign lobby have opposing policy interests. In a later section I will discuss how results would change if the policy interests of the two lobbies were aligned.

The Home government’s payoff has also three components: gross welfare, which I denote \( Wh(t) \), total contributions from lobbies, denoted \( C \), and the domestic rent-seeking cost: 
\[
G^h = a \left( Wh(t) - A^h \xi^h \right) + C,
\]
where the parameter \( a \) captures the welfare-mindedness of the government, in the same spirit as Grossman and Helpman (1994). Note the implicit assumption that the deadweight loss associated with the foreign lobby’s rent-seeking activity falls on the foreign country, thus the Home government does not care about \( \xi^f \).

The Foreign government’s payoff is denoted \( G^f = W^f(t) - A^f \xi^f \). I assume that \( Wh(t) \) has an interior maximum at \( tw \), while \( W^f(t) \) is decreasing in \( t \). It should be kept in mind that

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5The unilateral welfare-maximizing tariff \( tw \) may reflect classic terms-of-trade gains from protection, or new-trade-theory motives such as profit-shifting or firm-delocation gains.
the notation above refers to a single sector, and there is a mirror-image sector where roles are reversed.

The timing of the game is as follows. In the first stage, each lobby chooses whether to incur the access cost. In the second stage, the lobbies that have done so engage in Nash bargaining with the government. For simplicity I assume that the government has no bargaining power, and if both lobbies participate in the bargain they have symmetric power. In case both lobbies participate in the bargain, I allow them to compensate each other with side transfers. I will focus on the subgame perfect equilibria of this game.

2.1. Non-cooperative equilibrium

I start by considering the non-cooperative scenario. Let us proceed by backward induction and examine the four possible subgames:

1. Suppose only the domestic lobby seeks access to the government \((A^h = 1, A^f = 0)\). The policy that results from the bargain in this case is

   \[ t_h = \arg \max_t aW^h(t) + \Pi^h(t). \]

   Note that, in a trade model a’ la Grossman and Helpman (1995), \(t_h\) would be the analog of the “trade war” tariff, which incorporates political and terms-of-trade motives for protection.

   Let us write the joint surplus for this bargain:

   \[ S_h = (aW^h(t_h) + \Pi^h(t_h)) - (aW^h(t^w) + \Pi^h(t^w)). \]

   Note that the disagreement policy is \(t^w\), the unilateral welfare-maximizing policy: this is the policy that the Home government would choose in the absence of any lobbying. The resulting net payoffs for the lobbies in this case are:

   \[ L^h = \Pi^h(t^w) + S_h - \xi^h \]
   \[ L^f = \Pi^f(t_h). \]

2. If both lobbies seek access and bargain with the government \((A^h = A^f = 1)\), the resulting policy is

   \[ t_{hf} = \arg \max_t aW^h(t) + \Pi^h(t) + \Pi^f(t). \]
Note that \( t_{hf} < t_h \), because the participation of the foreign lobby in the bargain pushes down the policy. Formally, this follows from \( \frac{d}{dt} \Pi(t) < 0 \). On the other hand, \( t_{hf} \) may be higher or lower than \( t_w \).

The joint surplus in this case is

\[
S_{hf} = (aW^h(t_{hf}) + \Pi^h(t_{hf}) + \Pi^f(t_{hf})) - (aW^h(t^w) + \Pi^h(t^w) + \Pi^f(t^w)),
\]

Given that each lobby has bargaining power \( \frac{1}{2} \), the resulting net payoffs for the lobbies are:

\[
L^h = \Pi^h(t^w) + \frac{1}{2} S_{hf} - \xi^h
\]
\[
L^f = \Pi^f(t^w) + \frac{1}{2} S_{hf} - \xi^f
\]

3. If only the foreign lobby incurs the access cost \( A^h = 0, A^f = 1 \), the resulting policy is

\[
t_f \equiv \arg \max_t aW^h(t) + \Pi^f(t).
\]

Note that \( t_f < t^w \), since the foreign lobby pushes the policy below the level that the Home government would choose absent any lobbying. In this case the joint surplus is:

\[
S_f = (aW^h(t_f) + \Pi^f(t_f)) - (aW^h(t^w) + \Pi^f(t^w)),
\]

and the net payoffs are:

\[
L^h = \Pi^h(t_f)
\]
\[
L^f = \Pi^f(t^w) + S_f - \xi^f
\]

4. If neither lobby seeks access \( A^h = A^f = 0 \), of course there is no bargain and the policy outcome is \( t^w \).

We are now ready to back up and examine the equilibrium access decisions by the lobbies. These are simply the Nash equilibria of the game summarized by the following payoff matrix

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6In a specific-factor trade model where \( t \) is a tariff, whether \( t_{hf} \) is higher or lower than \( t^w \) would depend on the relative supply and the terms-of-trade impact of the tariff. To see this, note that the tariff is the wedge between domestic and foreign price \( (p^h = p^f + t) \), and the derivative of the profit function is the supply function \( \frac{d\Pi}{dp} = y^j(p) \). Next notice that \( t_{hf} > t^w \) if \( \frac{d\Pi^h}{dt} + \frac{d\Pi^f}{dt} > 0 \) for all \( t \). We can thus write

\[
\frac{d\Pi^h}{dt} = \frac{d\Pi^h}{dp} \frac{dp}{dt} = y^h(1 + \frac{dp^*}{dt}),
\]

while \( \frac{d\Pi^f}{dt} = \frac{d\Pi^f}{dp^*} \frac{dp^*}{dt} = y^f \frac{dp^*}{dt} \). It follows that \( t_{hf} > t^w \) if \( \frac{y^h}{y^f} > \frac{-\frac{dp^*}{dt}}{1 + \frac{dp^*}{dt}} \) for all \( t \). And conversely, \( t_{hf} < t^w \) if \( \frac{y^h}{y^f} < \frac{-\frac{dp^*}{dt}}{1 + \frac{dp^*}{dt}} \) for all \( t \).
(where each entry indicates the payoffs of the lobbies \((L^h, L^f)\) for the corresponding access decisions):

<table>
<thead>
<tr>
<th>(A^h = 0)</th>
<th>(A^f = 0)</th>
<th>(A^h = 1)</th>
<th>(A^f = 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(A^h = 0)</td>
<td>(\Pi^h(t^u), \Pi^f(t^w))</td>
<td>(\Pi^h(t^u), \Pi^f(t^w) + S_f - \xi^f)</td>
<td></td>
</tr>
<tr>
<td>(A^h = 1)</td>
<td>(\Pi^h(t^u) + S_h - \xi^h, \Pi^f(t_h))</td>
<td>(\Pi^h(t^u) + \frac{1}{2}S_h + \xi^h, \Pi^f(t^w) + \frac{1}{2}S_h - \xi^f)</td>
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From inspection of the above matrix, it follows immediately that:

(i) \(A^h = 1, A^f = 1\) is an equilibrium if \(\xi^h < \frac{1}{2}S_h + \Pi^h(t^w) - \Pi^h(t_f)\) and \(\xi^f < \frac{1}{2}S_h + \Pi^f(t^w) - \Pi^f(t_h)\)

(ii) \(A^h = 0, A^f = 1\) is an equilibrium if \(\xi^h > \frac{1}{2}S_h + \Pi^h(t^w) - \Pi^h(t_f)\) and \(\xi^f < S_f\)

(iii) \(A^h = 1, A^f = 0\) is an equilibrium if \(\xi^h < S_h\) and \(\xi^f > \frac{1}{2}S_h + \Pi^f(t^w) - \Pi^f(t_h)\)

(iv) \(A^h = 0, A^f = 0\) is an equilibrium if \(\xi^h > S_h\) and \(\xi^f > S_f\).

It is easy to show that if the rent-seeking costs are smaller than some threshold values, both lobbies will choose to engage with the Home government, and more precisely:

**Proposition 1.** (i) If \(\xi^h < \frac{1}{2}S_h + \Pi^h(t^w) - \Pi^h(t_f)\) and \(\xi^f < \frac{1}{2}S_h + \Pi^f(t^w) - \Pi^f(t_h)\), then \(A^h = A^f = 1\) is an equilibrium; (ii) If \(\xi^h < \min\{\frac{1}{2}S_h + \Pi^h(t^w) - \Pi^h(t_f), S_h\} \equiv \xi^h\) and \(\xi^f < \min\{\frac{1}{2}S_h + \Pi^f(t^w) - \Pi^f(t_h), S_f\} \equiv \xi^f\), then \(A^h = A^f = 1\) is the unique equilibrium.

In what follows I will focus on the case \(\xi^h < \xi^h\) and \(\xi^f < \xi^f\), so that there is a unique equilibrium in which both lobbies engage in rent-seeking, because this case highlights more sharply the potential anti-lobbying gains from an international agreement. But in order to understand the nature of such gains, it is important to understand the logic of the rent-seeking game examined above. The key point is that (binding) policy commitments reduce the available joint surplus for the government and the lobbies. In particular, it can already be understood that removing policy discretion will shrink the available surplus to zero, thus the only equilibrium will be \(A^h = A^f = 0\) and all rent-seeking waste will be eliminated. If, on the other hand, policy discretion is reduced but not eliminated, the available surplus will be correspondingly reduced but not eliminated, thus there may still be wasteful lobbying in equilibrium.

Next I focus on the effects of international commitments.
2.2. Exact Policy Commitments

The natural starting point is to consider the most rigid type of rule, that is, one that specifies an exact policy level, say \( t^A = \bar{t} \). This kind of rule is not very frequent in real-world agreements, but it is an important benchmark to consider. Clearly, this type of agreement removes all policy discretion, and hence it shuts down any ex-post lobbying and associated rent-seeking waste.

To examine the welfare gains from exact policy commitments, I first define a benchmark: I will refer to the “traditional” welfare gains from an agreement as the increase in global welfare generated by that agreement (relative to the noncooperative equilibrium) when \( \xi_f = \xi^h = 0 \). Recall that in the noncooperative scenario, absent rent-seeking costs, both lobbies bargain with the government and the resulting tariff is \( t_{hf} \). Thus, the traditional gains from an agreement are \( W(\bar{t}) - W(t_{hf}) \), where \( W(t) \equiv W^h(t) + W^f(t) \).

Now consider the total gains from the agreement \( t^A = \bar{t} \). Recall that I am focusing on the case where \( \xi^h < \hat{\xi}^h \) and \( \xi^f < \hat{\xi}^f \), so that in the noncooperative equilibrium both lobbies engage in rent-seeking and the resulting tariff is \( t_{hf} \). In this case, the total gains are \( \Delta W \equiv W(\bar{t}) - W(t_{hf}) + \xi^h + \xi^f \). Thus I can state:

**Proposition 2.** Assume \( \xi^h < \hat{\xi}^h \) and \( \xi^f < \hat{\xi}^f \), so that both lobbies engage in rent seeking in the noncooperative equilibrium. Then an agreement of the type \( t^A = \bar{t} \) provides “anti-lobbying” gains of \( \xi^h + \xi^f \) in addition to the traditional welfare gains.

The simple point here is that, if one ignores the effects of international agreements on the lobbies’ rent-seeking activities, one will underestimate the gains from international agreements.

Before proceeding, an important question is whether the anti-lobbying argument for policy commitments calls specifically for an international agreement, as opposed to a domestic commitment that a country can make unilaterally, through for example a change in its domestic constitution. I have argued elsewhere (Maggi and Rodriguez-Clare, 1998 and 2007) that making unilateral economic policy commitments in practice may be hard to self-enforce, especially for weakly-institutionalized countries. But the present model suggests that, even if unilateral commitments are feasible, an international agreement may still be necessary, and the reason is that policy discretion causes not just domestic waste of resources (captured by \( \xi^h \) in the model), but it also imposes a negative international externality, by inducing waste of foreign resources (captured by \( \xi^f \) in the model). Addressing this negative international externality may be difficult.
without international agreements.\footnote{For example, suppose there is no domestic rent-seeking waste ($\xi^h = 0$). In this case the Home government has no incentive to make any unilateral commitments, so unless there is an international agreement, the rent-seeking waste caused by foreign lobbying ($\xi^f$) will not go away.} For this reason, in what follows I will distinguish between the “anti-domestic-lobbying” and the “anti-foreign-lobbying” effects of policy commitments.

The next observation is that the potential for anti-foreign-lobbying gains cannot be considered a stand-alone rationale for an international agreement, because it is tightly linked to the presence of direct international policy externalities (in my model, the direct impact of $t$ on foreign profits and welfare). Clearly, if the domestic policy $t$ had no externality on the foreign country, then $\frac{d}{dt} \Pi^f(t) = 0$ and there would be no reason for foreign producers to lobby the domestic government. Rather, the anti-foreign-lobbying gains should be thought of as amplifying the traditional gains from an international agreement.

This point can be formalized in the following way. Let us abstract for a moment from the anti-domestic-lobbying gains by setting $\xi^h = 0$, and let us parametrize the intensity of the international policy externality (and hence the traditional gains from an international agreement) by writing foreign profits as $\Pi^f(t) = \delta \Pi^f(t)$ (keeping the assumption $\frac{d}{dt} \Pi^f(t) < 0$). Note that increasing $\delta$ increases the marginal impact of $t$ on foreign welfare as well, since foreign welfare is the sum of foreign profits and foreign consumer surplus, thus increasing $\delta$ strengthens the international policy externality, and hence the traditional gains from an international agreement. It is not hard to show that increasing $\delta$ expands the range of $\xi^f$ for which the foreign lobby engages in rent-seeking at the noncooperative equilibrium, and in this sense it increases the anti-foreign-lobbying gains from an exact policy commitment.

This is a good juncture to discuss the relationship between the anti-foreign-lobbying argument for an international agreement and the argument made by several authors, for example Emily Blanchard, that the presence of cross-border ownership and foreign lobbying may reduce the scope for international agreements, since it induces a government to internalize part of the international policy externality. In the context of import tariffs, cross-border ownership and foreign lobbying tend to bring noncooperative equilibrium tariffs closer to the cooperative tariff levels. While my model has nothing to say about cross-border ownership, in the case of foreign lobbying it highlights a force that goes in the opposite direction as the one highlighted by these authors: if foreign lobbying entails wasteful rent-seeking, the potential for foreign lobbying can amplify the value of international agreements.

These two forces can be formalized in the context of my model. Let us compare the setting
above, where foreign lobbying can occur, with the benchmark case in which foreign lobbying is not feasible at all, and evaluate the gains from an exact policy commitment $t^A = \bar{t}$ in each scenario. For the purpose of this comparison I will focus on the example of a tariff agreement.

If foreign lobbying is feasible, the welfare gains from an agreement $t^A = \bar{t}$ are given by $\Delta W = W(\bar{t}) - W(t_{hf}) + \xi^h + \xi^f$, while if foreign lobbying is not feasible the gains are $\bar{\Delta} W = W(\bar{t}) - W(t_h) + \xi^h$ (recall that $t_{hf}$ and $t_h$ are the noncooperative policies respectively with and without foreign lobbying).

Notice that, in the noncooperative scenario, foreign lobbying lowers the noncooperative tariff level. To see this, recall that $t_h$ maximizes $aW^h(t) + \Pi^h(t)$, while $t_{hf}$ maximizes $aW^h(t) + \Pi^h(t) + \Pi^f(t)$. Since $\frac{d}{dt}\Pi^f(t) < 0$, it follows that $t_h > t_{hf}$. Recalling that $W^f$ is decreasing in $t$, it follows that this reduction in $t$ will increase global welfare, unless the foreign lobby’s influence on the tariff is much stronger than the domestic lobby’s, so that $t_{hf}$ is a large import subsidy. I summarize this point with:

**Remark 1.** The potential for foreign lobbying has two effects on the welfare gains from an international agreement (relative to the benchmark case of no foreign lobbying): (i) it lowers the noncooperative policy level from $t_h$ to $t_{hf}$; (ii) it increases the anti-lobbying gains from $\xi^h$ to $\xi^h + \xi^f$. The net welfare effect can go either way, and it is possible that introducing foreign lobbying increases the welfare gains from an international agreement.

### 2.3. Policy Caps

In this section I consider a common type of international rule, namely a bound on the policy $t$. This is an agreement that allows only one-sided policy discretion. Since in my setting an increase in $t$ exerts a negative international externality, I will consider policy caps of the kind $t \leq \bar{t}$. Real-world examples of policy caps are tariff ceilings for trade agreements, or emission caps for environmental agreements. If an increase in $t$ exerted a positive international externality instead, we would consider a lower bound for $t$, and the analysis would be qualitatively similar; an example of a lower policy bound might be a minimum product standard or a minimum environmental tax.

I will consider a policy cap $\bar{t}$ that is binding and is not so low that it removes the foreign lobby’s benefit from participating in the bargain (otherwise the cap has no interesting effects), and compare it with the corresponding exact policy commitment ($t = \bar{t}$).
Recalling the assumption that $\xi^h < \xi^h$ and $\xi^f < \xi^f$, so that both lobbies engage in rent seeking in the noncooperative equilibrium, the noncooperative policy is $t_{hf}$. For the policy cap to be binding, it has to be strictly lower than the noncooperative policy level, so I consider a cap $\bar{t} < t_{hf}$.

Intuitively, an agreement in the form of a policy cap may forego some or all of the anti-lobbying gains, because it does not remove shut down wasteful ex-post lobbying. But the analysis will reveal further, subtle implications of policy caps.

Let us revisit the rent-seeking game under the policy cap. First note that, whichever lobbies participate in the bargain, in case of disagreement the government will choose policy $t_d \equiv \min\{t^w, \bar{t}\}$. Going by backward induction, let us re-examine the four subgames:

1. If only the domestic lobby participates ($A^h = 1$, $A^f = 0$), the agreed-upon policy maximizes $aW^h(t) + \Pi^h(t)$ subject to $t \leq \bar{t}$. The cap is clearly binding, so the resulting policy is $\bar{t}$ and the joint surplus for $G^h$ and $L^h$ is:

$$S_h = [aW^h(\bar{t}) + \Pi^h(\bar{t})] - [aW^h(t_d) + \Pi^h(t_d)] .$$

The resulting net payoffs for the lobbies are:

$$L^h = \Pi^h(t_d) + S_h(\bar{t}) - \xi^h$$

$$L^f = \Pi^f(\bar{t})$$

2. If both lobbies participate ($A^h = A^f = 1$), the agreed-upon policy maximizes $aW^h(t) + \Pi^h(t) + \Pi^f(t)$ subject to $t \leq \bar{t}$. Since $\bar{t} < t_{hf}$ the policy cap is binding, thus the resulting policy is again $\bar{t}$. The joint surplus from the bargain in this case is:

$$S_{hf} = [aW^h(\bar{t}) + \Pi^h(\bar{t}) + \Pi^f(\bar{t})] - [aW^h(t_d) + \Pi^h(t_d) + \Pi^f(t_d)] .$$

The net payoffs for the lobbies are:

$$L^h = \Pi^h(t_d) + \frac{1}{2}S_{hf}(\bar{t}) - \xi^h$$

$$L^f = \Pi^f(t_d) + \frac{1}{2}S_{hf}(\bar{t}) - \xi^f$$

3. If only the foreign lobby participates ($A^h = 0$, $A^f = 1$), the agreed-upon policy maximizes $aW^h(t) + \Pi^f(t)$ subject to $t \leq \bar{t}$. Recall that the unconstrained optimum in this case is denoted $t_f \equiv \arg \max_t [aW^h(t) + \Pi^f(t)]$, and recall also that $t_f < t^w$. 

14
In this case, the policy that results from the bargain is \( \min\{\tilde{t}, t_f\} \), so the joint surplus is:

\[
S_f = aW^h(\min\{\tilde{t}, t_f\}) + \Pi^f(\min\{\tilde{t}, t_f\}) - [aW^h(t_d) + \Pi^f(t_d)],
\]

and the net payoffs are:

\[
L^h = \Pi^h(\min\{\tilde{t}, t_f\})
\]
\[
L^f = \Pi^f(t_d) + S_f - \xi^f
\]

4. If \( A^h = A^f = 0 \), there is no bargain and the policy outcome is \( t_d \).

The payoff matrix is thus the following:

<table>
<thead>
<tr>
<th></th>
<th>( A^f = 0 )</th>
<th>( A^f = 1 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>( A^h = 0 )</td>
<td>( \Pi^h(t_d), \Pi^f(t_d) )</td>
<td>( \Pi^h(\min{\tilde{t}, t_f}), \Pi^f(t_d) + S_f - \xi^f )</td>
</tr>
<tr>
<td>( A^h = 1 )</td>
<td>( \Pi^h(t_d) + S_h - \xi^h, \Pi^f(\tilde{t}) )</td>
<td>( \Pi^h(t_d) + \frac{1}{2}S_{hf} - \xi^h, \Pi^f(t_d) + \frac{1}{2}S_{hf} - \xi^f )</td>
</tr>
</tbody>
</table>

It is important to understand that the imposition of a policy cap changes the lobby participation game in two ways relative to the noncooperative scenario. First, it reduces the joint surplus for the government and the lobbies that choose to engage, although it may not reduce it to zero. Second, it may change the disagreement policy: if \( \tilde{t} < t^w \), the disagreement policy is lowered from \( t^w \) to \( \tilde{t} \).

Note that, when the policy bound becomes the new disagreement policy \( (\tilde{t} < t^w) \), this wipes out the joint surplus available when the domestic lobby is in the bargain. To see this recall from the analysis above that, if the domestic lobby is in the bargain, then the cap is binding; so if the policy bound is also the disagreement point, then \( S_h = 0 \). But if the foreign lobby is the only one participating the joint surplus \( S_f \) may be positive, if the cap is not binding. Let us consider the two cases:

**Case A: the policy cap does not affect the disagreement policy \( (\tilde{t} > t^w) \).**

In this case, \( t_d = t^w \) and \( \min\{\tilde{t}, t_f\} = t_f \), so the payoff matrix above is qualitatively similar as the one in the non-cooperative scenario, except that the joint surplus terms \( (S_f, S_h \text{ and } S_{hf}) \) are uniformly lower. But note the joint surplus is strictly positive regardless of which lobbies participate. Thus, if the lobbying costs \( \xi^f \) and \( \xi^h \) are below some threshold levels, the unique
equilibrium is for both lobbies to engage in rent-seeking. In this case, the use of a policy cap foregoes all the anti-lobbying gains from the international agreement.

More generally, depending on $\xi^f$ and $\xi^h$, the policy cap may reduce the number of active lobbies relative to the non-cooperative scenario, in which case part or all of the anti-lobbying gains from the agreement are retained:

**Proposition 3.** Suppose $\bar{t} > t^w$, so that the policy cap does not affect the disagreement policy. Then the policy cap weakly reduces the anti-lobbying gains relative to the corresponding exact policy commitment, and it foregoes all anti-lobbying gains if $\xi^f$ and $\xi^h$ are below some threshold levels.

Next I focus on the case in which the policy bound becomes the new disagreement point.

**Case B: the policy cap becomes the new disagreement policy ($\bar{t} < t^w$).**

Recall first from the previous section that $t_f < t^w$. If $\bar{t} < t_f < t^w$, then in all subgames the cap is binding and $\bar{t}$ is the disagreement policy, so the joint surplus is zero in all subgames, and hence the unique equilibrium is $A^h = A^f = 0$. This is not a very interesting case: the policy cap is so low that the discretion it leaves is irrelevant, so it is equivalent to an exact policy commitment $t = \bar{t}$. I will thus ignore this case in what follows.

The interesting case is the one in which $\bar{t}$ is not so low that it removes the foreign lobby’s incentive to get engaged, that is $t_f < \bar{t} < t^w$. In this case, if the lobbying costs $\xi^f$ and $\xi^h$ are sufficiently small, the policy cap is an assassin: it kills any pure-strategy equilibrium, and only a mixed-strategy equilibrium survives. To see this, suppose $\xi^f$ and $\xi^h$ are infinitesimally small. First, $A^h = A^f = 0$ is not an equilibrium, because the foreign lobby can gain from deviating and entering. Second, $A^h = 0, A^f = 1$ is not an equilibrium: given that the foreign lobby is in the bargain and pushes the policy below the cap, the domestic lobby has incentive to enter in order to prevent this from happening and bring the policy to the cap. Third, $A^h = 1, A^f = 1$ is not an equilibrium: if both lobbies are in the bargain, the policy is at the cap, and if the foreign lobby exits the policy will still be at the cap, so the foreign lobby prefers to save the rent-seeking cost and exit. Finally, $A^h = 1, A^f = 0$ is not an equilibrium: if only the domestic lobby is in the bargain, the policy is at the cap, and the foreign lobby will want to enter in order to push the policy down.
Intuitively, the simple reason for the non-existence of pure-strategy equilibria is the following: the foreign lobby has incentive to engage in rent-seeking only if the domestic lobby does not, because only in this case it can convince the government to lower the policy below the cap \( \bar{t} \); and the domestic lobby has incentive to participate only if the foreign lobby does too, because in this case it wants to prevent the policy from being lowered below \( \bar{t} \). At a basic level, what kills pure-strategy equilibria is a key asymmetry: given the opposite policy interests of the two lobbies, the policy cap is binding for the domestic lobby but not for the foreign lobby.

In this case, there is only a mixed-strategy equilibrium in which each lobby pays the access cost with some probability.\(^8\) In expectation, then, the policy cap will reduce lobbying waste relative to the non-cooperative scenario, but will not eliminate it, so a policy cap \((t < \bar{t})\) is worse than the corresponding exact policy commitment \((t = \bar{t})\).

The following proposition summarizes:

**Proposition 4.** Suppose \( t_f < \bar{t} < t_w \), so that the policy cap becomes the disagreement policy (but is not so low that it removes the foreign lobby’s benefit from bargaining with the government). Then, if the rent-seeking costs \( \xi_f \) and \( \xi_h \) are sufficiently small, there exists only a mixed strategy equilibrium of the rent-seeking game. In this case, the expected rent-seeking waste is lower than in the non-cooperative scenario, but strictly positive.

It is worth noting that the result of Proposition 4 extends beyond the simple model I consider here, and applies more generally to the effect of a policy cap when there is countervailing lobbying. For example, it would apply also to a model of tariff-setting where there is no foreign lobbying but there is countervailing lobbying between final-good producers and intermediate-good producers about the tariff choice.

Before moving on, it is worth highlighting the contrast between the point I am making here and the point made by Maggi and Rodriguez-Clare (2007) regarding tariff caps. The present model highlights a shortcoming of tariff caps, namely that they may invite wasteful ex-post lobbying. In contrast, Maggi and Rodriguez-Clare (2007) highlights an advantage of tariff caps: by inviting ex-post lobbying, a tariff cap in a given sector induces the lobby to pay monetary contributions to the government ex-post, thus reducing the net returns from investment in that sector, and hence reducing the ex-ante misallocation of resources. These results should be seen as complementary. Taken together, they suggest that policy discretion can have opposite effects.

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\(^8\)It is a well-known result that a mixed-strategy Nash equilibrium always exists in a game of this type.
on the resource misallocations caused by lobbying: to the extent that it induces lobbies to make monetary payments to the government and hence lowers returns to lobbying, it is a good thing; to the extent that it induces lobbies to engage in wasteful activities, it is a bad thing. The relative importance of wasteful activities versus pure transfers in the lobbying process is a fascinating empirical question in its own right.

3. The value of non-discrimination rules

To examine the effects of nondiscrimination rules, I now extend the model to a simple three-country setting. I will argue that a non-discrimination rule can achieve some or all of the potential anti-lobbying gains from an international agreement, by reducing the rent-seeking waste caused by foreign lobbying.

Consider a world comprised of the home country and two foreign countries. In the sector under consideration, the two foreign countries are symmetric. For each foreign country \(k \in \{1, 2\}\), the home government can choose a bilateral policy \(t^k\). This could be interpreted as a bilateral tariff, or a bilateral investment policy, or a bilateral immigration policy. I define a non-discriminatory policy as one that entails \(t^1 = t^2 \equiv t\).

The two foreign lobbies face the same access cost \(\xi^f\). To focus more sharply on the important points, I assume in this section that the domestic lobby has zero cost of access: \(\xi^h = 0\). Under this assumption, it is a dominant strategy for the domestic lobby to participate in the bargain with the government, so I can take a shortcut and fix \(A^h = 1\) throughout the analysis, and focus on the access decisions of the foreign lobbies.

I continue to assume that the bargaining power is shared evenly by the lobbies that participate in the bargain.

The home country’s gross welfare function is now \(W^h(t^1, t^2)\), the gross profit function for the domestic lobby is \(\Pi^h(t^1, t^2)\), and the gross profit function of foreign lobby \(k\) is \(\Pi^k(t^k, t^{-k})\). Note that, given the symmetry of foreign lobbies, \(\Pi^1(t, t) = \Pi^2(t, t)\). With a slightl abuse of notation, I will denote \(\Pi^k(t, t)\) the foreign lobbies’ common profit function given a symmetric policy \(t\).

I assume that: (i) the domestic lobby’s profit \(\Pi^h\) is increasing in each \(t^k\); (ii) foreign lobby \(k\)’s profit \(\Pi^k\) is decreasing in \(t^k\) and increasing in \(t^{-k}\); and (iii) a uniform increase in \(t\) hurts each foreign lobby: \(\frac{d}{dt}\Pi^k(t, t) < 0\). In a trade application, the interpretation of these assumptions
would be that the import-competing lobby prefers higher tariffs on imports from both countries, each exporter prefers a lower tariff on its own products but a higher policy on the competing exporter, and each exporter dislikes uniform policy increases.

I am now ready to launch into the analysis. I will first characterize the noncooperative equilibrium, and then examine the effects of a nondiscrimination (ND) rule that imposes the constraint \( t^1 = t^2 \equiv t \) on the Home country’s policies.

3.1. Non-cooperative equilibrium

Let us examine the rent-seeking game in the noncooperative scenario. Having set \( A^h = 1 \), we have a symmetric game between the two foreign lobbies. Let us proceed by backward induction and examine the various subgames.

In what follows, the subscript(s) of the policy \( t \) indicate the foreign lobbies that participate in the bargain, while the supercript of \( t \) indicates the country that the policy applies to, and I use no superscript when the policy is non-discriminatory; thus, for example, \( t^2_1 \) is the policy that applies to foreign country 2 when only foreign lobby 1 is in the bargain, and \( t^1_{12} \) is the symmetric policy that emerges when both lobbies are in the bargain.

Focus first on the subgame \( (A^1 = 1, A^2 = 1) \).

With both foreign lobbies in the bargain, the agreed-upon policy is

\[
t_{12} = \arg \max_t \Omega_{12}(t, t) = \arg \max_t [aW^h(t, t) + \Pi^h(t, t) + 2\Pi^k(t, t)].
\]

The joint surplus in this case is

\[
S_{12} = \max_t \Omega_{12}(t, t) - \Omega_{12}(t^w, t^w),
\]

where \( t^w \) denotes the (symmetric) unilateral welfare-maximizing policy. The net payoffs for the foreign lobbies are:

\[
L^1 = L^2 = \Pi^k(t^w, t^w) + \frac{1}{3} S_{12} - \xi^f
\]

Next focus on the subgame \( (A^1 = 1, A^2 = 0) \) (given that the foreign lobbies are symmetric, the subgame \( (A^1 = 0, A^2 = 1) \) is analogous).

The agreed-upon policies are

\[
(t^1_1, t^2_1) = \arg \max_{t^1_1, t^2_1} \Omega_1(t^1_1, t^2_1) = \arg \max_{t^1_1, t^2_1} [aW^h(t^1_1, t^2_1) + \Pi^h(t^1_1, t^2_1) + \Pi^1(t^1_1, t^2_1)]
\]
The joint surplus in this case is

\[ S_1 = \max_{t^1, t^2} \Omega_1(t^1, t^2) - \Omega_1(t^w, t^w), \]

and the net payoffs for the foreign lobbies are:

\[ L^1 = \Pi^k(t^w, t^w) + \frac{1}{2} S_1 - \xi^f \]
\[ L^2 = \Pi^2(t^1, t^2). \]

Finally focus on the subgame \((A^1 = 0, A^2 = 0)\). The policy in this case is

\[ t_0 = \arg \max_t [a W^h(t, t) + \Pi^h(t, t)] \]

and the net payoffs for the foreign lobbies are:

\[ L^1 = L^2 = \Pi^k(t_0, t_0) \]

Having derived the subgame equilibrium payoffs, I can now move backwards and examine the equilibrium access decisions of the foreign lobbies.

The first question is: under what conditions is \((A^1 = 1, A^2 = 1)\) an equilibrium? This requires that foreign lobby 1 have no incentive to deviate and step out, which in turn requires the following condition (the condition for foreign lobby 2 is equivalent, given symmetry):

\[ \xi^f < \Pi^k(t^w, t^w) + \frac{1}{3} S_{12} - \Pi^1(t^1, t^2) \equiv \tilde{\xi}^f. \]

Next, under what conditions is \((A^1 = 1, A^2 = 0)\) an equilibrium? This requires that (i) lobby 2 has no incentive to step in, which in turn requires: \(\Pi^2(t^1, t^2) > \Pi^k(t^w, t^w) + \frac{1}{3} S_{12} - \xi^f\), and (ii) lobby 1 has no incentive to step out, which in turn requires: \(\Pi^k(t^w, t^w) + \frac{1}{2} S_1 - \xi^f > \Pi^k(t_0, t_0)\). Thus the condition is

\[ \tilde{\xi}^f \equiv \Pi^k(t^w, t^w) + \frac{1}{3} S_{12} - \Pi^2(t^1, t^2) < \xi^f < \Pi^k(t^w, t^w) + \frac{1}{2} S_1 - \Pi^k(t_0, t_0) \equiv \bar{\xi}^f \] (3.1)

By symmetry, (3.1) is also the condition for \((A^1 = 0, A^2 = 1)\) to be an equilibrium. Also note that the interval \((\xi^f, \bar{\xi}^f)\) may be empty, which is the case if \(\frac{1}{2} S_1 - \frac{1}{3} S_{12} < \Pi^k(t_0, t_0) - \Pi^2(t^1, t^2)\).
Finally, under what conditions is \((A^1 = 0, A^2 = 0)\) an equilibrium? Clearly this is the case if
\[
\xi^f > \Pi^k(t^w, t^w) + \frac{1}{2}S_1 - \Pi^k(t_0, t_0) \equiv \tilde{\xi}^f
\]

Notice that the equilibrium number of foreign lobbies that participate in the bargain is unique, and in particular, it is equal to two if \(\xi^f < \tilde{\xi}^f\), one if \(\tilde{\xi}^f < \xi^f < \tilde{\xi}^f\), and zero if \(\xi^f > \tilde{\xi}^f\). Thus the total rent-seeking waste in equilibrium, which I denote \(RS^f\), is
\[
RS^f = \begin{cases} 
2\xi^f & \text{if } \xi^f < \tilde{\xi}^f \\
\xi^f & \text{if } \tilde{\xi}^f < \xi^f < \tilde{\xi}^f \\
0 & \text{if } \xi^f > \tilde{\xi}^f
\end{cases}
\]

Also note that the equilibrium rent-seeking waste is non-monotonic in \(\xi^f\): it is initially increasing, then it jumps down when \(\xi^f\) crosses the first threshold \(\tilde{\xi}^f\), then it starts increasing again, and finally jumps down to zero as \(\xi^f\) crosses the second threshold \(\tilde{\xi}^f\) (with the interval \((\tilde{\xi}^f, \tilde{\xi}^f)\) possibly empty, as I noted above). Figure 1 illustrates.

### 3.2. Impact of the ND rule

Let us now revisit the rent-seeking game under the ND rule, which imposes the constraint \(t^1 = t^2\) on the bargain.
Consider first the subgame \((A^1 = A^2 = 1)\). With both foreign lobbies in the bargain, the agreed-upon policy maximizes
\[
\Omega_{12}(t, t) \equiv aW^h(t, t) + \Pi^h(t, t) + 2\Pi^k(t, t)
\]
The joint surplus in this case is
\[
S_{12}^{ND} = \max_t \Omega_{12}(t, t) - \Omega_{12}(t^w, t^w)
\]
and the net payoffs for the foreign lobbies are:
\[
L^1 = L^2 = \Pi^k(t^w, t^w) + \frac{1}{3}S_{12}^{ND} - \xi^f
\]

Next consider the subgame \((A^1 = 1, A^2 = 0)\) (given symmetry, the subgame \((A^1 = 0, A^2 = 1)\) is analogous).

The agreed-upon policy is
\[
t_1^{ND} = \arg \max \Omega_1(t, t) = \arg \max_t [aW^h(t, t) + \Pi^h(t, t) + \Pi^1(t, t)]
\]
The joint surplus from the bargain in this case is
\[
S_1^{ND} = \max_t \Omega_1(t, t) - \Omega_1(t^w, t^w)
\]
and the net payoffs for the foreign lobbies are:
\[
L^1 = \Pi^1(t^w, t^w) + \frac{1}{2}S_1^{ND} - \xi^f
\]
\[
L^2 = \Pi^2(t_1^{ND}, t_1^{ND}).
\]

Finally consider the subgame \((A^1 = 0, A^2 = 0)\). The policy in this case is
\[
t_0 = \arg \max_t [aW^h(t, t) + \Pi^h(t, t)]
\]
Thus the net payoffs for the foreign lobbies are the same as in the absence of the ND rule:
\[
L^1 = L^2 = \Pi^k(t_0, t_0)
\]

Having derived the subgame equilibrium payoffs under the ND rule, I can now move backwards and examine the equilibrium access decisions of the foreign lobbies.
Clearly, for \((A^1 = 1, A^2 = 1)\) to be an equilibrium we need:

\[
\xi^f < \Pi^k(t^w, t^w) + \frac{1}{3}S_{12}^{ND} - \Pi^2(t_{1}^{ND}, t_{1}^{ND}) \equiv \xi_{ND}^{f}
\]

For \((A^1 = 1, A^2 = 0)\) to be an equilibrium, we need that: (i) lobby 2 has no incentive to step in, which requires: \(\Pi^2(t_{1}^{ND}, t_{1}^{ND}) > \Pi^k(t^w, t^w) + \frac{1}{3}S_{12}^{ND} - \xi^f\), and (ii) lobby 1 has no incentive to step out, which requires: \(\Pi^k(t^w, t^w) + \frac{1}{2}S_{1}^{ND} - \xi^f > \Pi^k(t_0, t_0)\). Thus the condition for \((A^1 = 1, A^2 = 0)\) to be an equilibrium, and by symmetry also for \((A^1 = 0, A^2 = 1)\) to be an equilibrium, is

\[
\xi_{ND}^{f} = \Pi^k(t^w, t^w) + \frac{1}{3}S_{12}^{ND} - \Pi^2(t_{1}^{ND}, t_{1}^{ND}) < \xi^f < \Pi^k(t^w, t^w) + \frac{1}{2}S_{1}^{ND} - \Pi^k(t_0, t_0) \equiv \tilde{\xi}_{ND}^{f}
\]

Note that the interval \((\xi_{ND}^{f}, \tilde{\xi}_{ND}^{f})\) may be empty, which is the case if \(\frac{1}{2}S_{1}^{ND} - \frac{1}{3}S_{12}^{ND} < \Pi^k(t_0, t_0) - \Pi^2(t_{1}^{ND}, t_{1}^{ND})\).

Finally, the condition for \((A^1 = 0, A^2 = 0)\) to be an equilibrium is

\[
\xi^f > \Pi^k(t^w, t^w) + \frac{1}{2}S_{1}^{ND} - \Pi^k(t^h, t^h) \equiv \tilde{\xi}_{ND}^{f}
\]

Note that, just as in the noncooperative scenario, the number of foreign lobbies that engage in rent-seeking is unique, and in particular, it is equal to two if \(\xi^f < \xi_{ND}^{f}\), one if \(\xi_{ND}^{f} < \xi^f < \tilde{\xi}_{ND}^{f}\), and zero if \(\xi^f > \tilde{\xi}_{ND}^{f}\). Thus the equilibrium rent-seeking waste under the ND rule is:

\[
RS_{ND}^{f} = \begin{cases} 
2\xi^f & \text{if } \xi^f < \xi_{ND}^{f} \\
\xi^f & \text{if } \xi_{ND}^{f} < \xi^f < \tilde{\xi}_{ND}^{f} \\
0 & \text{if } \xi^f > \tilde{\xi}_{ND}^{f}
\end{cases}
\]

Next I argue that imposing the ND rule decreases both cost thresholds relative to the noncooperative equilibrium, that is \(\xi_{ND}^{f} < \xi^f\) and \(\tilde{\xi}_{ND}^{f} < \tilde{\xi}^f\), thus it reduces (weakly) the number of foreign lobbies that engage in rent-seeking.

The first observation is that, since the foreign lobbies are symmetric, the ND constraint is not binding when both lobbies are in the bargain, thus \(S_{12}^{ND} = S_{12}\). Furthermore, it can be shown that \(\Pi^2(t_{1}^{ND}, t_{1}^{ND}) > \Pi^2(t_{1}^{1}, t_{1}^{1})\), that is, the ND rule increases the payoff of a foreign lobby that stays out when the other foreign lobby is in the bargain.\(^9\) It follows that \(\xi_{ND}^{f} < \tilde{\xi}^f\).

\(^9\)To see this, note that in the absence of the ND rule, if only lobby 1 is in the bargain the agreed-upon tariffs maximize \([aW^h(t_1, t_2) + \Pi^h(t_1, t_2) + \Pi^1(t_1, t_2)]\). Clearly, this leads to \(t_1^1 < t_2^1\). In the presence of the ND rule, the agreed-upon tariffs maximize the same objective, but under the constraint \(t_1 = t_2\). Given that the objective function is concave in \(t_1\) and \(t_2\), imposing the equality constraint leads to a higher \(t_1\) and a lower \(t_2\), and as a consequence \(\Pi^2\) increases.
Next note that $S_1^{ND} < S_1$, because imposing the ND constraint lowers the available surplus when only one foreign lobby is in the bargain, and hence $\tilde{\xi}_{ND}^{f} < \tilde{\xi}^{f}$.

We can conclude that imposing the ND rule weakly reduces the number of foreign lobbies that engage in rent-seeking, and hence the total rent-seeking waste, for any given $\xi^{f}$, and the reduction is strict for a range of $\xi^{f}$. Figure 2 visualizes this point, by contrasting the $RS_{ND}^{f}(\xi^{f})$ function with the $RS^{f}(\xi^{f})$ function.

Another way to describe the impact of the ND rule on the equilibrium rent-seeking waste is to think of $\xi^{f}$ as a parameter that is ex-ante uncertain. In this case it is straightforward to show that, for any ex-ante distribution of $\xi^{f}$, imposing the ND rule decreases the equilibrium rent-seeking waste $RS^{f}$ in a first-order stochastic sense. I can thus state:

**Proposition 5.** Relative to the non-cooperative equilibrium, imposing the ND rule weakly reduces the number of foreign lobbies that engage in rent-seeking in equilibrium for any $\xi^{f}$, and the reduction is strict for a range of $\xi^{f}$. Thus, for any ex-ante distribution of $\xi^{f}$, imposing the ND rule decreases the equilibrium rent-seeking waste in a first-order stochastic sense.

The broad intuition for this result is that the ND rule injects a free-rider problem in the
strategic interaction between the foreign lobbies, and more specifically, it modifies the rent-seeking game in two ways. First, it increases the payoff of a lobby that stays out of the fray when the other one engages in rent-seeking, and this increases the incentive to deviate from an equilibrium where both foreign lobbies participate in the bargain. Second, it reduces the available surplus when only one foreign lobby is in the bargain, and this decreases the incentive of that lobby to stay in the bargain.

The logic of this result is reminiscent of the well-known free-rider problem in trade negotiations caused by the MFN rule, however there are some differences. First, in the present context the free-riding occurs in the process of ex-post lobbying, not in the process of negotiating the agreement, so free-riding is not necessarily a “problem”. Second, the nature of the free-riding is somewhat different. The free-riding problem caused by the MFN rule in trade negotiations occurs because a country that participates in the bargain must make trade concessions, while a country that stays out does not. Here the lobby that participates in the bargain may get a higher payoff than the lobby that stays out: to see this, suppose $t_1^{ND} > t^w$; then the participating lobby gets a side transfer for accepting an increase in the tariff relative to the disagreement policy $t^w$, so it gets a higher payoff than the non-participating lobby.

The final observation is that, while imposing the ND rule reduces wasteful rent-seeking, it may worsen the policy outcome relative to the non-cooperative scenario. This is because, as discussed in section 2.2, foreign lobbying pushes non-cooperative policies closer to their cooperative levels. Thus, to the extent that the ND rule induces one or both of the foreign lobbies to disengage, it leads to a worse policy outcome. The net effect is ambiguous, and it is possible that imposing the ND rule is worse than imposing no rule at all.

**Remark 2.** The ND rule has two opposite effects on global surplus: it reduces wasteful rent-seeking but it distorts the equilibrium policy outcome relative to the non-cooperative equilibrium. The net effect can go in either direction.

It is worth highlighting, however, that the beneficial effect of foreign lobbying on the equilibrium policy levels depends on the assumption that Home’s policy affects foreign lobbies and foreign welfare in the same direction. In the trade application, this is the feature that an increase in Home’s tariff damages the foreign lobby as well as foreign welfare. But it is not hard to think of policy domains where this is not the case. For example, a tax on FDI from a given country may hurt producer lobbies in that country, but it may increase welfare in that country.
by inducing those producers to invest more locally (if for example there are local agglomeration externalities).

4. Discussion

The analysis in this paper has taken international rules as exogenous. While this approach is useful to examine the impacts of different types of international rules on the rent-seeking behavior of lobbies, it leaves open two important questions. First, from a normative perspective, what are the optimal international rules from a global-welfare standpoint? And second, from a positive perspective, what kind of international rules should we expect to arise endogenously, if the negotiation of these rules is influenced by lobbies?

The model developed above is arguably not rich enough to examine the endogenous determination of international rules. For example, the model abstracts from some important advantages of tariff caps, for example the flexibility they afford in the presence of uncertainty (see e.g. Horn, Maggi and Staiger, 2010, and Mueller, 2019). But even in the context of the model above, it is not obvious what rules would arise endogenously when the agreement is negotiated. In what follows I make a couple of observations about the choice between exact policy commitments and policy caps within the basic two-country model.

As a preliminary observation, when it comes to the negotiation of an agreement, we can consider two distinct scenarios: (i) the case where lobbies can influence the agreement in the same way as they can influence the choice of policies ex post (ex-ante lobbying), and (ii) the case in which lobbies do not influence the formation of the agreement (no ex-ante lobbying).

Consider first the case of ex-ante lobbying, and suppose the agreement maximizes the joint payoff of the two governments and the two lobbies \((G_h + G_f + L_h + L_f)\). In this case the equilibrium agreement will specify exact policy commitments. The reason is simple: suppose the agreement specifies a policy cap \(t\) and ex-post this results in a policy outcome \(t_e\), a certain

10 As noted above, Maggi and Rodriguez-Clare (2007) highlight another advantage of tariff caps, namely that they may induce lobbies to pay monetary contributions to the government, thus lowering the net returns from investment in politically-powerful sectors.

11 The case of no ex-ante lobbying is considered for example by Maggi and Rodriguez-Clare (1998) and Mitra (2002), while the case of full ex-ante lobbying is considered by Maggi and Rodriguez-Clare (2007) and, in a slightly different context, Maggi and Ossa (2019). International agreements are arguably long-term commitments, so the importance of ex-ante lobbying depends, among other things, on the time horizon of lobbies. For example, if a lobby represents the owners of a factor that is fixed in the short run but mobile in the long run, this lobby will not be very interested in lobbying for long-term commitments.
amount of contributions and a certain amount of rent-seeking waste. Since contributions are a pure transfers and rent-seeking waste is bad for both governments and lobbies, this outcome can be improved upon by an agreement that specifies an exact policy commitment $t = t^e$. A policy cap can be optimal only if it does not induce any rent seeking ex-post (that is, $\bar{t}$ is so low that no lobby engages in rent-seeking), in which case it is equivalent to an exact policy commitment.

Next consider the case of no ex-ante lobbying, and suppose the agreement maximizes the joint payoff of the two governments, $G^h + G^f$. In the basic model above I focused for simplicity on the special case in which governments have zero bargaining power vis-a-vis the lobbies, but if this assumption is relaxed, governments may jointly prefer a tariff cap to an exact policy commitment. The reason is that, if the governments have some bargaining power vis-a-vis the lobbies, the governments may prefer to retain some discretion in the form of a policy cap, because this allows them to extract some rents from lobbies ex-post.\(^{12}\)

There is another interesting question that arises when considering the endogenous determination of international rules: lobbies may engage in rent-seeking not only to influence ex-post policy choices, but also to influence the ex-ante agreement. Is it possible that such ex-ante rent seeking activities might offset the anti-lobbying gains that I highlighted above? I would argue that, while some wasteful rent-seeking should be expected at the agreement negotiation stage, the magnitude of ex-post rent-seeking waste is likely to be higher, because ex-ante lobbying occurs once and for all, while ex-post lobbying occurs repeatedly over a long period of time after the agreement is signed. In other words, the ex-post rent-seeking costs in my model should be interpreted as the present discounted value of rent-seeking costs over a potentially long period of time. If one is willing to assume that the ex-post rent-seeking waste is larger than the ex-ante rent-seeking waste, the net anti-lobbying gains from an agreement will still be positive.

As I highlighted throughout the paper, the model can be applied to a variety of policy areas, but additional insights could be gained by imposing more structure and focusing on a specific policy area. For example, it would be worthwhile to explore more in depth the case of trade agreements. In a trade application of the model, it would be important to allow for a broader set of policy instruments than just import tariffs, and this would introduce new and interesting questions. For example, suppose a government can use not only tariffs, but also export taxes

\(^{12}\)This point is reminiscent of the result in Maggi and Rodriguez-Clare (1998), where a small-country government prefers to retain discretion if its bargaining power vis-a-vis domestic lobbies is above some threshold level.
and domestic instruments (such as production subsidies). Then a tariff agreement, or even an agreement that covers import and export instruments, may have limited success in reducing rent-seeking waste, because special interest groups will focus their lobbying efforts on the policies that are not covered by the agreement. So a question that arises is: how comprehensive does an international agreement have to be in order to achieve anti-lobbying gains?

Finally, extending the model to allow for heterogeneous firms and firm-level lobbying would open it up to further fascinating questions. For example, suppose that engaging in rent-seeking makes a firm less productive, because the firm diverts resources away from investment and innovative activities. Then rent-seeking activities would affect trade not only indirectly, as they lead to more import protection, but would also have a direct negative impact on a firm’s export performance. And as a consequence, a trade agreement would affect the volume of trade not only through the traditional channel of lowering trade barriers, but also through a new channel, because reducing rent-seeking would lead to higher firm productivity.

5. Conclusion

I have argued that an important potential benefit of international agreements is to reduce wasteful rent-seeking activities through a reduction in policy discretion, thus ignoring the role of rent-seeking would lead us to underestimate the gains from international agreements.

I distinguished between “anti-domestic-lobbying” and “anti-foreign-lobbying” gains from international agreements. While the former have been highlighted in previous work, the latter are novel and have distinct implications: to the extent that policy discretion induces rent-seeking activities by foreign lobbies, it imposes a negative externality on foreign countries, by inducing waste of foreign resources. This in turn suggests a new motive for international agreements. While anti-domestic-lobbying gains can be achieved in principle by a unilateral commitment, anti-foreign-lobbying gains call specifically for an international agreement.

To examine the potential anti-lobbying effects of various types of international rules, I developed a simple model in which domestic and foreign lobbies can engage in costly lobbying and have opposite policy interests, thus generating countervailing lobbying. I focused on three types of international rules: exact policy commitments, policy bounds and non-discrimination rules. An exact policy commitment is a natural benchmark and has straightforward implications. Since it removes policy discretion, this type of rule shuts down ex-post lobbying and hence
eliminates all rent-seeking waste. Policy bounds have more subtle effects, because they may invite ex-post lobbying and therefore may forego part or all of the potential anti-lobbying gains. An interesting implication of policy bounds is that they may lead lobbies to randomize their rent-seeking choices. I then examined non-discrimination rules in the context of a three-country extension of the model, and argued that this type of rule can reduce rent-seeking by foreign lobbies, by injecting a free-rider problem in the strategic interaction between these lobbies. Under some conditions a non-discrimination rule can achieve all the potential anti-foreign-lobbying gains from an agreement; but at the same time, by discouraging foreign lobbying it may distort the policy outcome relative to the non-cooperative equilibrium.
6. References


