

Trading Interests: Domestic Institutions, International Negotiations, and the Politics of Trade

by

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ABSTRACT

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This dissertation addresses the relationship between domestic and international institutions in the context of the politics of trade. The dissertation identifies specific instances of how international institutions modify the effects of domestic institutions, and it shows how domestic institutions affect government behavior in international institutions. The first chapter focuses on the domestic politics of trade. A prominent literature argues that electoral institutions favoring narrow interest groups result in higher average tariff rates. The chapter argues that this literature has largely ignored the role of exporter interests and shows that, in the presence of trade agreements, this omission results in a biased understanding of trade politics. The second chapter expands on these issues, turning to electoral campaigns. Narrow interest institutions are not only associated with more support for protectionist trade policies in campaign statements, as would be expected from standard accounts, but also with more support for free trade. The finding further underscores the contemporaneous influence of protectionist and free trade interest groups in trade politics. The third chapter turns to government behavior in international institutions. It shows that domestic institutions can provide an explanation for differences in government engagement with dispute settlement procedures. Governments under institutions that are more prone to support narrow interest groups are more active in filing trade disputes against other governments. The final chapter addresses the question of why many international agreements lack strong enforcement and commitment mechanisms, even where agreements are used as hands-tying mechanisms by governments. The chapter emphasizes an incompatibility between institutions that tie the hands of governments, and thereby lock in policies, and international cooperation that is driven by domestic pro-cooperation groups. Agreements which lock in policies take an issue off the table, such that a government can no longer leverage it in political campaigns. Anticipating this, governments may be reluctant to lock in policies through international agreements.

CHAPTER I

Introduction

Governments face opportunities and constraints that are shaped by institutions at the domestic and at the international level. How do domestic and international institutions interact in creating these incentives? This dissertation addresses the interplay of domestic institutions and international institutions with respect to trade politics, and it addresses in particular questions about the joint influence of domestic and international institutions. Trade policies regulate flows of goods (and, increasingly, services) across borders, which underlines the international implications of trade policy choices. At the same time, by affecting prices and opening or closing markets to foreign competition, trade policies have domestic distributional consequences. As such, studies of trade policies feature prominently in several subfields of international relations. On the one hand, a large body of research, rooted in the literature on special interest politics, attempts to explain why some governments provide more protectionist trade policies and higher average tariff rates than others. Starting at least with Rogowski (1987), this literature asserts that electoral institutions influence a government's choice of trade policies. Similar arguments have been made with respect to the distinction between democracies and autocracies (Mansfield, Milner and Rosendorff, 2000; Milner and Kubota, 2005).

On the other hand, a large literature draws on trade agreements to gain an

understanding of the design and effects of international institutions. Indeed, the General Agreement on Tariffs and Trade (GATT) and the World Trade Organization (WTO), as the global trade institutions, are akin to the paragon of the institutionalist literature in international relations. They have been part of a rich “institutionalist literature that regards the GATT/WTO as its beau ideal” and accordingly are among “the most cited examples of a successful international institution” (Goldstein, Rivers and Tomz, 2007, p. 38). With currently 159 members, the WTO encompasses most countries in the world, as shown in Figure 1.1., and it is supplemented by a dense network of preferential trade agreements (PTAs) among subsets of countries (Mansfield and Milner, 1999). Much of this literature invokes commitment and information problems to explain the negotiation of trade agreements. Trade agreements are, for instance, considered to be commitment devices used by governments to tie their own and their successors’ hands with respect to trade policy (Baccini and Urpelainen, 2014; Busch and Mansfield, 2011), to provide external enforcement mechanisms for human rights (Hafner-Burton, 2005), to provide signals about a government’s preferences to its own electorate (Mansfield, Milner and Rosendorff, 2002), or to provide signals about the liberal economic preferences of governments to investors (Büthe and Milner, 2008). Additionally, the dispute settlement body of the GATT/WTO received much attention as an example of the legalization of world politics (Goldstein et al., 2000). Several authors suggested that governments use the dispute settlement body to tie their hands (Busch, 2000), examined how governments strategically choose dispute settlement venues (Busch, 2000), or how governments exploit the dispute settlement body to set legal precedent – even in an environment that explicitly rules out the legitimacy of legal precedent (Pelc, 2014).

Yet, to date, few if any connections have been formed between the literature that addresses the domestic sources of trade policies – such as domestic electoral

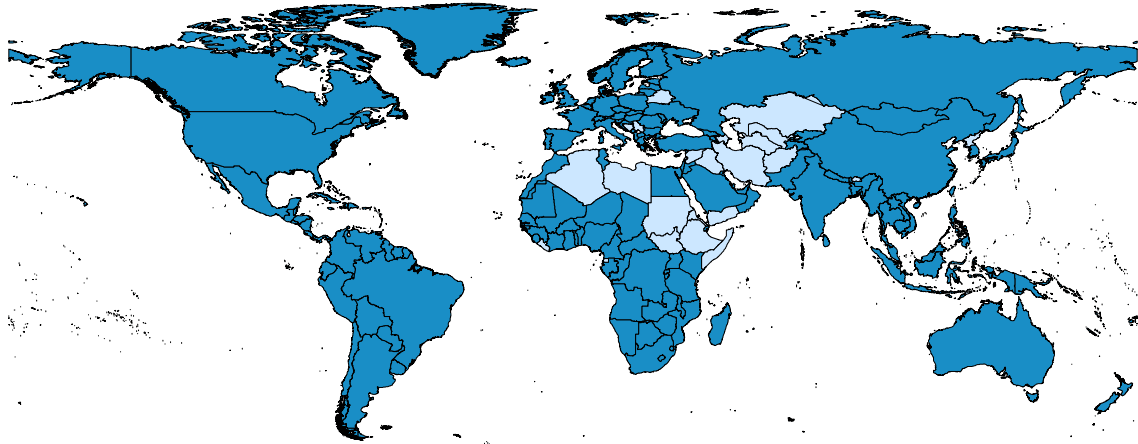


Figure 1.1.: GATT/WTO membership by March 2013. Darker shade corresponds to GATT/WTO membership. Data from the World Trade Organization’s website.

institutions – and the literature that addresses those international institutions that are concerned with trade policies – such as international trade agreements. In fact, as Lake (2009, p. 237) notes, “if international institutions really matter, they will alter the interests and possibly institutions within states as well. This feedback from the international political economy to the domestic arena is now almost entirely ignored.” This disconnect mirrors the international relations more generally. It is widely acknowledged that domestic politics matter for government behavior in international relations. Maybe most prominently, the difference between democratic and autocratic forms of government has been linked to the behavior of states in international conflict (Doyle, 1986; Bueno de Mesquita et al., 1999; Schultz, 2001). Domestic considerations have also been used to explain participation in and compliance with human rights agreements (Moravcsik, 2000; Vreeland, 2008; Powell and Staton, 2009; Simmons, 2009), involvement with the International Monetary Fund (Vreeland, 2003; Mukherjee and Singer, 2010), and engagement in international disputes over territorial conflict (Allee and Huth, 2006a). Similarly, domestic constraints in the form of democratic institutions or ratification constraints may affect a government’s bargaining leverage in international negotiations (Putnam, 1988; Fearon, 1994; Mo, 1995; Schultz,

1998, 2001; Tarar, 2001; Leventoglu and Tarar, 2005). Conversely, international forces may affect domestic political choices (Clark and Hallerberg, 2000; Dai, 2007; Franzese and Hays, 2007; Grieco, Gelpi and Warren, 2009). Yet, with few exceptions (see, e.g., Morrow 2013), the literature shows little concern for how international and domestic institutions may interact in shaping government behavior.

In the following chapters, I argue that ignoring this interplay between international institutions and domestic politics yields a biased picture of trade politics and, by extension, an incomplete and biased understanding of the effects of both domestic and international institutions. Integrating the largely distinct literatures on domestic institutions and on international trade agreements results in several new theoretical results and empirical implications, which affords a richer and better understanding of the politics of trade and a number of new insights on how international institutions can affect domestic politics.

The following chapters are tied together by the observation that the literature has largely ignored a simple motivation for negotiating international trade agreements: to reduce foreign trade barriers and improve market access abroad. Indeed, as a consequence of numerous rounds of trade negotiations, by now tariffs on many products have internationally negotiated upper bounds. Figure 1.2. displays the percentage of tariff lines in each country, for the year 2012, that are subject to such upper bounds. On average, for countries where data are available, 83 per cent of tariff lines are subject to bound tariffs.

Because trade agreements allow governments to negotiate lower tariffs abroad, they potentially insert a new set of interest groups into the domestic political contest over trade policy: exporters, who gain from improved and secured market access abroad (Gilligan, 1997*a*; Pahre, 2008; Handley, 2014). Exporters have a number of attributes that make them potentially powerful political actors: as is discussed in later chapters, they tend to be more productive and to have more

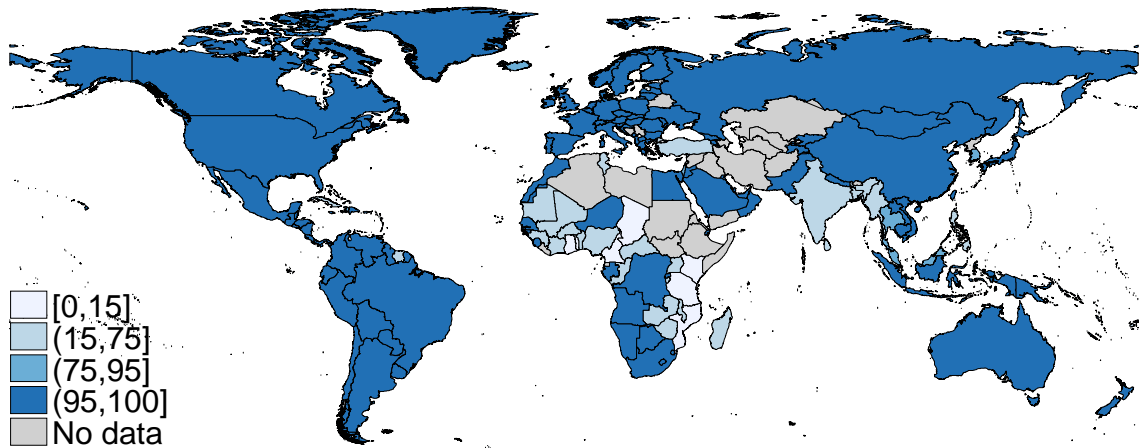


Figure 1.2.: Binding coverage in 2012: Percent of tariffs that are subject to internationally negotiated tariff bindings. Darker shades correspond to higher binding coverage. Data from the World Trade Organization’s website.

employees than firms producing solely for the domestic market (Bernhard and Leblang, 1999; Melitz, 2003; Osgood, 2013). Additionally, on each product the gains from exporting tend to be concentrated on only few firms, which provides large incentives to overcome any potential collective action problems that could otherwise inhibit political action. The following chapters explore some of the joint effects of domestic and international institutions that arise from taking into account exporters in the context of trade agreements and domestic institutions.

The next chapter is primarily concerned with the literature that suggests a relationship domestic electoral institutions and protectionist trade policies. This literature so far has largely focused on the political conflict between two groups. On the one hand, import-competing, protectionist interest groups are composed of firms and industries that are harmed by foreign competition and hence ask their government for protectionist trade policies. On the other hand, consumers as voters prefer lower prices and hence oppose free trade. Thus, the literature posits that governments face a trade-off between the interests of protectionist, import-competing interest groups and the interests of consumers, who prefer free trade (see, e.g., Kono 2006; Copelovitch and Pevehouse 2010; Mansfield and Milner

2012). The costs of protectionist trade policies are dispersed on a large number of voters, who will each perceive only a slight loss, whereas the benefits are typically concentrated on a small number of firms, and “This circumstance makes it easier to put a protection measure in place” (Pareto, 1927, p. 379).

The literature concluded that this implies that institutions favoring interest groups over the general public in the policy-making process will result in policies geared towards interest groups, and consequently more protectionist trade policies and higher average tariff rates (Rogowski, 1987; Rogowski and Kayser, 2002; Milner and Kubota, 2005; Ehrlich, 2007). A central distinction in this regard has been drawn between plurality rule and proportional representation.¹ Because the gains from protection tend to be concentrated, relative to the costs, there is some theoretical consensus in this literature that plurality rule should benefit protectionist interest groups and therefore be associated with higher average levels of protection. However, the literature has produced mixed empirical evidence on this proposition. The chapter provides an explanation for some of these inconclusive results by showing that the relationship between domestic institutions and policy outcomes is altered substantially in the presence of international trade agreements.

Trade agreements are predominantly negotiated under the principle of reciprocity. Under reciprocity, obtaining improved market access for exports requires a government to lower restrictions on some of its own imports. Thus, satisfying exporter demands requires sacrificing the interests of some protectionist firms. Because institutions favoring narrow interests should accede to protectionist interests as well as exporters, reciprocal trade negotiations break the relationship between narrow interest institutions and average tariff levels: governments can provide protection on some goods and, in exchange for market access abroad,

¹In plurality electoral rule, legislators are elected through single-member districts and the contestant with the highest vote share in each district wins. This contrasts with proportional representation, where legislators are elected in multi-member districts and seats are allocated according to vote shares.

dismantle trade barriers on others. The joint omission of exporter interests and reciprocal trade agreements therefore results in a biased understanding of trade politics, as it renders average tariff levels largely meaningless for evaluating the impact of electoral institutions.

Moreover, the demands for both protection and liberalization create incentives for governments under narrow interest institutions to provide higher tariff rates on some goods and lower tariff rates on others. This results in more dispersed tariff rates across products and within industries. By focusing attention on tariff rates at the product level, and dispersion across different products, this implication squares well with recent research in economics and political science on intra-industry conflict over trade policies, and it further underscores the need to move away from average tariff rates for empirical assessments of protectionist influences.

The third chapter expands on the link between domestic institutions and trade politics. The chapter moves away from tariff rates as the dependent variable and instead turns to political campaigns. If both exporters and protectionist firms are politically relevant interest groups, then politicians under narrow interest institutions should have incentives to cater to both types of groups and make references to both of them in political campaigns. Thus, countries with institutions favoring narrow interests should be associated with more appeals in political campaigns to both protectionism and free trade, not just to protectionism. This result contrasts with a model of trade politics based on a unilateral view, in which case only protectionist groups are relevant campaign targets under narrow interest institutions.

The chapter also introduces a new empirical model to account for the dependent variable, which is a percentage with a substantial fraction of zeros. The model combines a beta regression model, which accounts for positive values on the dependent variable, and a logit model, which accounts for zeros, not unlike a

zero-inflated count model typical for discrete count data. I briefly discuss various quantities of interest that can be estimated from the model and, through a small number of simulations, assess its performance in finite samples and relative to common alternatives.

The fourth chapter turns to government behavior in international institutions in the context of dispute settlement procedures. Many international agreements contain dispute settlement mechanisms (Koremenos and Betz, 2012), which contribute to the enforcement of international norms. In the majority of international agreements, only governments have the authority to initiate disputes, even where non-state actors are those most adversely affected by violations of international norms. These non-state actors may have incentives to bring disputes against another government, but they need to rely on their government to file the dispute on their behalf. In particular, this is the case at the GATT and the WTO, where governments enforce international commitments by trading partners through the initiation of trade disputes, typically on behalf of exporting firms. Although almost all governments have a deep bench of potential cases they could bring to the dispute settlement body, only few of these result in actual dispute initiations (Allee, 2008).

The chapter shows that domestic institutions can provide one explanation for these differences. Domestic institutions that are more prone to cater to narrow interest groups – such as plurality rule – are more likely to pursue trade disputes on behalf of exporting firms. This finding relates domestic political institutions to differences in government engagement with international institutions, which can have important distributional consequences, especially as the benefits of (often discriminatory) settlements accrue and compound over time (Shaffer, 2003; Kucik and Pelc, 2013). That governments under plurality rule are more likely to force compliance onto other governments further underscores that there is nothing

inherently protectionist about narrow interest institutions and plurality rule, but is also bears a certain irony: while plurality is associated with more attempts to enforce a liberal international trading order on behalf of domestic exporters, others find that plurality rule is associated with more incentives to violate international commitments (Rickard, 2010). This domestic explanation of dispute behavior also adds to the extant literature, which points to factors such as the precision of international law, the legal capacity of governments, the economic prowess of countries, attempts of governments to gain political cover for unpopular decisions, or the need to attract foreign currency as drivers of dispute participation (Huth, Croco and Appel, 2011; Busch, Reinhardt and Shaffer, 2009; Sattler and Bernauer, 2010; Allee and Huth, 2006*b*; Betz and Kerner, 2014).

The fifth chapter addresses the interaction between domestic politics and international institutions from the perspective of arguments that governments use international agreements to lock in policies. From this perspective, international institutions with weak or absent enforcement mechanisms are puzzling. To be sure, the literature puts forward that such agreements can be attractive when governments anticipate random shocks in the future that require them to abandon their obligations (Koremenos, 2001; Rosendorff, 2005). But such agreements are surprising if governments use international agreements to solve commitment problems or to tie the hands of their successors, both of which are motivations for international agreements suggested by a sizeable literature (see, e.g., Bernhard and Leblang 1999; Abbott and Snidal 2000; Moravcsik 2000; Vreeland 2003; Baccini and Urpelainen 2014).

The chapter points out an incompatibility between institutions that tie the hands of governments, and thereby lock in policies, and international cooperation that is driven by domestic political concerns. As a result, flexible agreements – those that fail to lock in policies – become attractive to governments, and in particular

so in situations in which the government's preferences align with those of pro-cooperation groups. The reason for the result is that agreements which lock in policies effectively take an issue off the table, such that a government can no longer leverage it in political campaigns. Consequently, if there are both groups opposed to cooperation and groups supportive of cooperation (such as is the case in trade agreements), governments lose the ability to exact concessions or political support if they were to lock in policy through an externally enforced agreement that ties their hands. Conversely, an international agreement without external enforcement allows the government to continue collecting support from pro-cooperation groups, which is needed to maintain the agreement and sustain cooperation. One implication is that a lack of formal enforcement mechanisms need not be evidence of a lack of a government's incentives or intentions to comply with the agreement (Downs, Rocke and Barsoom, 1996); instead, it may reflect a government's unwillingness to surrender an issue's political salience, which it can leverage for domestic political gains.

The conclusion, as the final chapter, summarizes some of the main points, emphasizes implications for the international relations and political economy literature, and suggests some directions for future research.

CHAPTER II

Reciprocity and Domestic Politics

What explains differences in trade policies across countries? A large literature, starting at least with Rogowski (1987), points to a country's electoral institutions as a key explanation. Much of the literature shares some common lines of argument: Trade politics is about the conflict between narrow interest groups and the general public. Firms that benefit from protectionist trade policies form narrow interest groups. Electoral institutions that favor narrow interests over the general public ('narrow interest institutions') consequently produce more protectionist trade policies, resulting in higher average tariff rates. Aside from the central role of trade politics in the international political economy literature, this straightforward link has made trade policies a prominent application for evaluating the effect of domestic institutions on economic outcomes.

While there is some theoretical agreement that plurality electoral systems, through a large number of electoral districts and weak parties, increase access for narrow interest groups (Rogowski, 1987; Grossman and Helpman, 2005), the empirical evidence is mixed. Some find plurality systems to be conducive to protectionism (Rogowski, 1987; Evans, 2009). Others find them to result in less protectionism (Mansfield and Busch, 1995; Pinheiro, 2013). And while Hatfield and Hauk (2014) find an association between plurality rule and higher average tariffs,

they note that the association is not explained by plausible mechanisms, such as the number of electoral districts. These results suggest the need for an explanation for the mismatch between existing theoretical arguments and empirical results.

This chapter provides such an explanation. Much of the extant literature is based on a unilateral view of trade policy-making. Yet, trade policies are predominantly set in reciprocal trade agreements, such as the World Trade Organization and preferential trade agreements, rather than determined unilaterally. With reciprocal trade agreements, exporters support domestic trade liberalization in exchange for market access abroad, and therefore form narrow interest groups as well. The focus on protectionist interest groups in the extant literature implies too narrow a definition of narrow interests. Narrow interest institutions should support protectionist interests by raising trade barriers, but they should also support exporting interests, which with reciprocal trade agreements requires cutting some domestic trade barriers. This effect breaks the link between institutions and average tariff levels, and average tariff levels are no longer meaningful for evaluating differences in the influence of narrow interest groups across institutional settings. Given the ubiquity of trade agreements, this effect explains some of the inconclusive results in the literature.

This chapter suggests a number of new theoretical implications and provides empirical support for these. First, it emphasizes the structure of tariff rates, as opposed to the average tariff rate, as a measure of the influence of narrow interest groups. The incentives to both protect and to liberalize are higher under narrow interest institutions, which creates more dispersion in tariff rates across products. Second, the protectionist bias of narrow interest institutions decreases with the degree of participation in reciprocal trade negotiations, such that differences between electoral institutions in their impact on average tariff levels disappear. By incorporating trade agreements into the literature on the domestic politics of trade,

the view of trade politics presented in this chapter departs from the conventional perspective, which largely equates trade policy with protectionist trade policy. In the presence of trade agreements, trade politics is not just about the balance of political power between consumers and protectionist producers, but it has to incorporate exporters as well. Reciprocal negotiations drive a wedge between these groups and ensure that accommodating protectionist interests comes at the expense of exporter interests.

Of course, neither the existence of exporters nor of trade agreements is news to political science. Exporters and intra-industry trade have been considered as important influences on trade policies elsewhere (Milner, 1988; Gilligan, 1997*b*). Likewise, international trade institutions, such as the General Agreement on Tariffs and Trade (GATT) and its successor, the World Trade Organization (WTO), have been described as “one of the most cited examples of a successful international institution”, subject of a rich “institutionalist literature that regards the GATT/WTO as its *beau ideal*” (Goldstein, Rivers and Tomz, 2007, p. 38). This literature puts forth a large number of arguments surrounding trade agreements. Trade agreements have, for instance, been considered as commitment devices used by governments (Baccini and Urpelainen, 2014; Busch and Mansfield, 2011), as external enforcement mechanisms for human rights (Hafner-Burton, 2005), as signals used by governments to demonstrate sound economic policies to domestic populations (Mansfield, Milner and Rosendorff, 2002), or as signals to investors about the liberal economic preferences of governments (Büthe and Milner, 2008). However, this literature largely ignored a simpler motivation for negotiating trade agreements: reducing foreign trade barriers and improving market access abroad for exporting firms. What is missing, as a consequence, is the link between the largely distinct literatures on trade agreements, exporter interests, and electoral institutions. Despite a prominent literature on international institutions, few

of its insights have been brought to bear on the relationship between domestic institutions and policy outcomes, and no attempt has been made to consider the interaction between international and domestic institutions in explaining trade politics. This omission is far from trivial, and this chapter suggests that it results in a biased view of trade politics. Integrating these aspects – the existence of exporters, reciprocal trade negotiations, and domestic electoral institutions – yields an improved theoretical understanding of trade politics and produces novel empirical implications.

Indeed, the argument in this chapter provides a specific instance of how international institutions, by modifying the effect of domestic institutions, affect domestic politics, and shows that the effects of domestic institutions cannot be understood independently of international factors. The chapter thereby isolates a new effect of international institutions. They can mute the effects of domestic institutions on policy outcomes – in this case, driving down the protectionist bias of narrow interest institutions as evidenced in average tariff rates. At the same time, reciprocity is rechanneling the political incentives created by electoral institutions by contributing to more dispersion in tariff rates across products.

To the extent that questions of distributive politics are at the center of much of political science, these results provide an illustration of the powerful effects of international institutions on domestic politics, which become even more relevant when considering the implications of trade policy and trade reform on social stability (Ruggie, 1982), welfare policies (Hays, Ehrlich and Peinhardt, 2005), growth (Wacziarg and Welch, 2007), inequality (Helpman, Itskhoki and Redding, 2010), and the respective links to domestic political institutions. For instance, if trade policy is a more contentious issue in certain electoral systems, due to the increased pressures on policy-makers to trade off conflicting goals, we might expect more discontent with economic globalization in such settings.

The next section discusses the role of reciprocal negotiations for breaking the link between institutions and average tariff levels and derives a number of empirical implications; the appendix offers a formal model. The second section provides empirical evidence. The final section concludes.

II.1 Trade politics under reciprocity

The literature on electoral institutions and trade policies largely focuses on the political conflict between protectionist, import-competing firms and consumers, who prefer free trade.¹ Protectionist groups are thought to be better able to overcome collective action problems than consumers: Protectionist measures provide large benefits to a small number of firms, which therefore form narrow interest groups. It follows, according to this literature, that political institutions furthering the influence of narrow interest groups result in more protectionist trade policies and higher average tariff rates.

The presence of trade agreements changes this relationship between electoral institutions and protectionism: because trade agreements invite lobbying by exporters in support of domestic trade liberalization, and because exporters become relevant narrow interest groups.² International trade institutions, such as the GATT and WTO, have the explicit goal of “negotiating the reduction or elimination of obstacles to trade.”³ Membership in trade institutions is quite ubiquitous. With currently 159 members, the WTO encompasses most countries in the world, and it is supplemented by a dense network of preferential trade agreements (PTAs);

¹A number of authors emphasized exporters and multinational corporations as potentially important actors (see, e.g., Milner 1988; Gilligan 1997a; Pahre 2008), but none of these touches on the link between domestic institutions and trade policies.

²Which specific institutions are thought to be associated with more support for narrow interest groups is inconsequential for the main propositions in the following: narrow interest institutions – however defined – have an ambiguous effect on average tariff levels, but increase the dispersion in tariff rates.

³Mission Statement of the WTO, at <http://www.wto.org>.

almost 600 trade agreements have been negotiated and notified to the GATT/WTO between 1948 and 2014. In “negotiating the reduction or elimination of obstacles to trade,” almost all trade agreements rely on the principle of reciprocity. Reciprocity implies that, in order to gain tariff concessions for some of its products abroad, a government has to liberalize tariffs on some of its own products. These concessions do not necessarily apply to the same products or industries, and tariff concessions on one good are usually reciprocated in another good (Barton et al., 2008). This intersectoral reciprocity is considered the standard negotiation procedure (Freund, 2003), in part because it allows countries to take advantage of differences in comparative advantage (Takatoshi and Krueger, 1997). In the negotiations over the North American Free Trade Agreement, for instance, the United States offered to lower its restrictions on sugar imports from Mexico, receiving lower restrictions on automobile exports to Mexico in turn (USITC, 2009, p. 82). This exchange of concessions has been dubbed first-difference reciprocity (Bhagwati, 1988), because it involves tariff reductions of equivalent value, but not a reduction to equivalent levels. In addition to being the guiding principle in negotiations at the GATT and the WTO (Bhagwati, 1988; Stern, 2007; Oatley, 2010), over 96 per cent of current preferential trade agreements are based on reciprocity (Mansfield and Milner, 2012). Reciprocity was also common in less recent trade negotiations. In negotiations between Germany and Switzerland over a trade agreement in 1891, “it was known that Switzerland would accept a trade agreement [to lower tariffs on German machinery] only if it would achieve advantages for its cheese exports” (Weitowitz, 1978, p. 93).

Under reciprocity, exporters have incentives to support trade liberalization of the domestic market in exchange for concessions abroad. Exporters benefit from tariff concessions of other countries in several ways. Lowering tariffs increases sales and profits for exporters and can create new export markets. Even if exporters

do not exist yet for a specific target market, the possibility of creating new export opportunities can result in pressure by exporters for market liberalization. Such demands are likely to come from firms that have experience in other export markets and can transfer existing infrastructure and knowledge to new markets (Albornoz et al., 2012). Existing and potential exporters also benefit from the policy certainty of legally binding and formally negotiated tariff rates (Handley, 2014).⁴

Numerous anecdotes illustrate instance where exporters were willing to support domestic trade liberalization in order to gain improved foreign market access. In 1907, D. M. Perry, Vice-President of the Manufacturers Bureau of Indiana, pointed out that protectionist trade policies in the United States, by preventing a reciprocal agreement, are “barring us out of Canada and building up the industries of that country. Many factories have been established there in late years to supply a trade that could just as well have been supplied by our own factories. This is an example in which the tariff serves to protect the foreign producer instead of the home producer” (Perry, 1907, p. 465). Another lobbyist, recognizing that “reciprocity is the game of give and take,” was even more explicit in specifying demands for domestic trade liberalization, noting about reciprocal trade negotiations between the United States and European countries in the early 20th century that, “If arrangements for the entry of many farm and factory products to these great continental markets can be made on the basis of conceding up to twenty per cent of the Dingley duties, the bargain is a good one, and in the present temper of the people may not with impunity be strangled by interests that have grown rich and powerful by virtue of special privileges long enjoyed. We maintain that four-fifths

⁴Exporters may still benefit from protectionist trade policies in their home markets. For instance, the United States auto industry would benefit from reduced tariffs on their products abroad; at the same time, the auto industry benefits from restricted access to the United States market. While such intra-industry trade could potentially undermine the incentives for firms to lobby for trade liberalization, intersectoral reciprocity allows exporters to lobby for tariff liberalization without sacrificing their own domestic market. Moreover, exporting firms can benefit from market liberalization even if this implies an increase in foreign competition in their domestic market. For theoretical models with these results, see Melitz (2003) and Osgood (2013).

of the existing duties, plus 3,000 miles of transportation, is protection enough for any domestic industry” (Sanders, 1907, pp. 452-453). Instances of unilateral trade policy-making, consequently, are seen critical by exporting firms. In a presentation at the European Commission in January 2012, Liam Benham, a Ford representative, lamented that recent one-sided trade policies “provide insufficient opportunities for exports.”⁵ Similar demands for domestic concessions in exchange for market access abroad were made by the semi-conductor and aviation industries in the United States in the 1980s (Milner and Yoffie, 1989). The economic incentives underlying exporter demands can break up even the strongest political alliances, as in late 19th century Germany, where the alliance of “iron and rye” did not withstand the political conflict over trade. While agricultural groups wanted to maintain protectionist policies, firms in the manufacturing sector pushed for a liberalization of the agricultural market in exchange for market access in Russia and Austria in particular (Weitowitz, 1978, p. 255). Multinational firms have been particularly vocal in this regard, for instance in supporting European integration as well as the North American Free Trade Agreement, since such trade agreements allow them to take advantage of production networks across countries (Milner, 1988; Kim, 2015).

Exporters are also well-positioned to be politically influential and to successfully make demands on governments. As stated succinctly by Bernard and Jensen (1999, p. 1), “Exporters are better than non-exporters,” and they are so on many dimensions that are politically relevant. Exporting firms tend to be larger, more profitable, and to pay higher wages than firms that are producing only for the domestic market (Bernard and Jensen, 1999). Anecdotally, this is particularly evident from multinational corporations, which in many countries tend to be among the politically most influential and most prominent firms (Jensen, 2003).

To illustrate the point more generally with respect to exporting firms, Figure

⁵http://trade.ec.europa.eu/doclib/docs/2012/february/tradoc_149058.pdf.

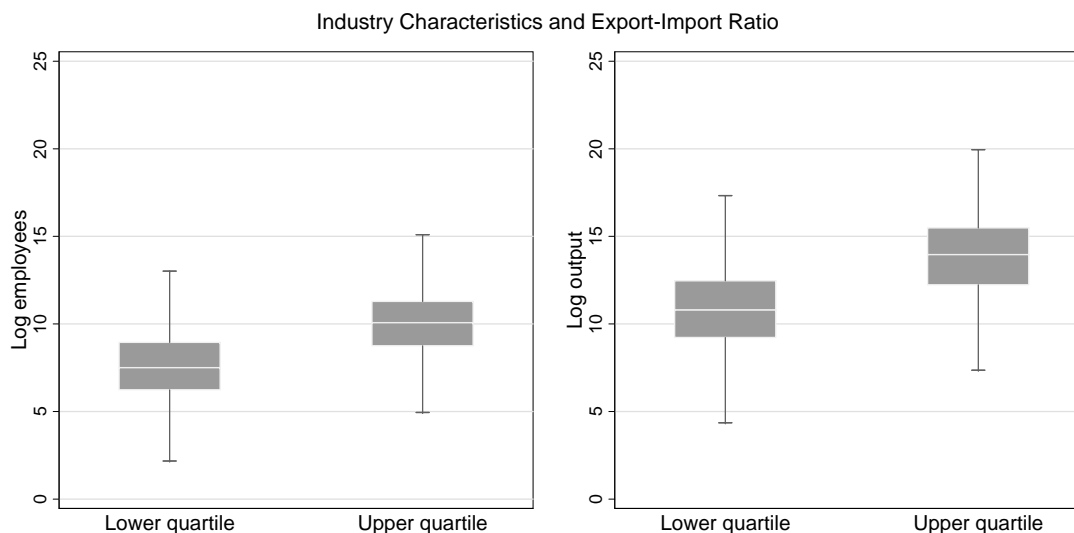


Figure 2.1.: Log number of employees (left panel) and log output (right panel) for industries in the lower quartile and upper quartile of the export-import ratio. Data from Nicita and Olarreaga (2006), covering 96 countries. Graph shows mean, upper and lower quartile, and upper and lower adjacent values.

2.1. displays box plots of the logged number of employees and logged output for industries that are in the lower and upper quartile of the export-import ratio, using data from 96 developed and developing countries (Nicita and Olarreaga, 2006).⁶ Figure 2.1. shows that industries heavily dependent on exports have both more employees and higher output. Industries in the upper quartile of the export-import ratio have about eleven times as many employees than industries in the lower quartile; their output is about twenty times as large as that for industries in the lower quartile.⁷ Their attributes put exporters into a position to successfully exert political influence.

Second, exporting firms can have substantial bargaining leverage over govern-

⁶I calculate the export-import ratio as the difference between the value of exports and the value of imports for each industry, divided by the sum of exports and imports for that industry. The resulting ratio is bound between -1 and 1 and provides a measure that is not a function of industry size. Industries are identified at the three-digit level. Because the ratio is bound between -1 and 1 and hence not dependent on industry size, the data in Figure 2.1. do not simply reflect that larger sectors have larger net trade balances and more employees.

⁷These characteristics have been well understood by policy-makers for a long time. In 1890, German chancellor Caprivi noted that exports “happen predominantly in firms which offer higher wages” (Weitowitz, 1978, p. 42).

ments. Import-competing firms are attractive targets for government support in part because they have a credible exit threat: If unable to maintain production when unshielded from international competition, governments have incentives to avert job losses through protectionist policies (Goodhart, 2014). Many exporting firms do not lag behind when it comes to credible exit threats. They have the option of leaving the home country and relocating production to the target market through tariff jumping – circumventing trade barriers by substituting foreign direct investment for exports (Ossa, 2010).

Third, collective action problems are unlikely to be more pronounced among exporting firms than among import-competing firms. Often, the gains from increased export opportunities for any specific good are concentrated on only a small number of firms (Cebeci et al., 2012). Especially where exporting comes at high start-up costs only the most competitive firms are able to take advantage of improved export opportunities (Bustos, 2011). As a consequence, even within generally competitive industries, few firms are able to reap the gains from exporting, as emphasized in recent theoretical models (Melitz, 2003) – which also underscores that exporters should in fact be considered ‘narrow’ interest groups. Consequently, reciprocal trade negotiations change the usual impact of collective action differentials on trade politics. “A protectionist measure provides large benefits to a small number of people, and causes a very great number of consumers a slight loss. This circumstance makes it easier to put a protection measure in place” (Pareto, 1927, p. 379). In reciprocal negotiations, a protectionist measure also causes a large loss to firms that lose or forego access to export markets, which makes it harder to put a protection measure in place.

That trade agreements allow governments to negotiate tariff reductions in foreign countries in exchange for own concessions, and that this effect turns exporters into supporters of domestic trade liberalization, has not gone unnoticed

in political science (see, e.g., Gilligan 1997a; Pahre 2008), but it has been absent from the literature on domestic institutions and trade policy-making. The latter implicitly rests on a unilateral view of trade politics that ignores trade agreements. If trade policy is set unilaterally, exporters do not affect the incentives of governments to provide protectionist trade policies at home. Governments may offer various policies to support exporters, such as subsidies, or gain market access abroad by force, as in European mercantilism in the 17th and 18th centuries. But the incentives to cater to exporters do not interfere with a government's ability to provide protectionist trade policies to import-competing firms. It follows that only import-competing firms, which oppose trade liberalization, and consumers, which support trade liberalization, have a stake in domestic trade policies. It follows, in the established unilateral framework, that the presence of exporters is irrelevant for the link between domestic institutions and tariff levels, and political institutions furthering the influence of narrow interest groups should be associated with higher average tariff rates.⁸

Reciprocity breaks this relationship between institutions and protectionism. Given the incentives for exporters to lobby for tariff reductions in the domestic market, and their potential ability to do so, electoral institutions that favor narrow interests should support some of these exporting interests and cut domestic trade barriers in order to gain market access abroad. Consequently, reciprocal trade negotiations require governments to provide protectionism more selectively, and governments can do so, since "full liberalization, the elimination of all trade barriers, is rarely if ever achieved in practice" (USITC, 2009, p. 91). Indeed,

⁸In the seminal model of trade politics (Grossman and Helpman, 1994), exporters may receive political support through export subsidies. This presence of exporters makes (almost) no difference to a government's decision to provide tariffs to protectionist sectors. Governments that are more dependent on contributions and therefore support from narrow interests will provide more benefits to exporting firms in the form of export subsidies and at the same time provide more benefits to import-competing firms in the form of tariffs. This is different under reciprocity, where supporting exporters comes at the expense of import-competing firms, and vice versa.

few trade agreements eliminate tariff barriers uniformly and across-the-board, such that “some sensitive sectors are typically excluded” from tariff cuts (Freund, 2003), and which sectors are considered sensitive will depend on the trading partner in question (Kono, 2008).

The selective provision of protectionism is possible, moreover, because tariff rates can be set individually for distinct goods – with more than 5,000 tariff lines in modern tariff schedules (Kee, Nicita and Olarreaga, 2009) – governments have the opportunity to accommodate exporters and protectionist groups at the same time: they can maintain high tariff rates on some goods, thereby providing support to select protectionist firms, and liberalize tariffs on goods where concessions can be turned into valuable market access abroad and where political pressure from protectionist groups is outweighed by exporters. The existing literature identifies a number of variables that affect the political influence of import-competing firms and industries – such as industry size, the number of employees, collective action problems, import levels, and the political and economic geography of industries (Alt and Gilligan, 1994; Busch and Reinhardt, 1999; McGillivray, 2004; Gawande and Krishna, 2003). Firms and industries that fall short on any of these measures are valuable targets for reciprocal liberalization if governments can sacrifice them in exchange for access to export markets. At the same time, politically influential firms and industries will be able to maintain protectionist trade policies.

This has several implications. First, if governments can sacrifice some import-competing firms in exchange for market access abroad, narrow interest institutions are not necessarily more protectionist on average. More influence for narrow interest groups should have two important effects. First, more influence makes it easier for exporters to lobby for tariff concessions in the home market in exchange for market access abroad. Second, because reciprocity is based on equivalent concessions under the principle of first-difference reciprocity, more influence allows

exporters to achieve larger tariff concessions in the home market, which offsets the potentially higher tariffs granted on some products for import-competing firms. Consequently, electoral institutions have an ambiguous impact on average tariff levels. Instead, different electoral institutions should produce systematic differences in the pattern of tariff rates across products. As institutions facilitate the influence of narrow interest groups, policies are increasingly geared toward *both* protectionist *and* exporting interests: some firms succeed in gaining protectionist tariff rates, resulting in higher tariffs on some products, while some exporting firms succeed in gaining access to foreign markets, which requires lowering domestic tariff rates on other goods. The guiding principle of first-difference reciprocity ensures that stronger demands for liberalization of export markets translate into stronger demands for tariff cuts at home.

If narrow interest institutions are more susceptible to these demands, then these demands should create more dispersed tariff rates across products under narrow interest institutions. Because governments can set tariffs on narrowly defined products (for instance, the United States tariff schedule lists different rates for zinc dust and zinc powders, or for cymbals and drums), the pattern of liberalization and protection should be evident even within sectors (such as metal products or musical instruments): producers of some of these products should succeed in gaining protection, and producers of others should be sacrificed in exchange for market access abroad. Thus, even within sectors, reciprocal trade negotiations imply that narrow interest institutions should create more dispersed tariff rates. This result moves the empirical focus away from average tariff rates as a measure of the influence of narrow interest groups, thereby also avoiding the difficulties of aggregating protectionist measures for a vast number of products (McGillivray, 2004).

This discussion leads to a first conjecture on electoral institutions and trade

policies.

Proposition 2.1. *Narrow interest institutions should be associated with more dispersion in tariff rates across products than broad-based institutions, both across and within sectors.*

Second, while narrow interest institutions should have a protectionist bias in the absence of reciprocal negotiations, as the opportunities for reciprocal trade liberalization increase and more exporters push for trade liberalization of the domestic market, the protectionist bias of narrow interest institutions should decrease. Indeed, where the number and political strength of exporters outweighs protectionist firms, narrow interest institutions may produce a free trade bias.⁹ As an example, a United States lobbyist proclaimed in 1907 that “Under the McKinley law, little of special value to American agriculture was to be had. [...] Hence the farmer took little interest in any of those arrangements. But now he is awake! European reciprocity means something to him. It means, in fact, millions annually to those who dwell upon the soil” (Sanders, 1907, p. 453). Agricultural interests in the United States had little reason to support trade liberalization in the United States in a number of earlier trade agreements, predominantly with Latin American countries. By contrast, gaining access to European markets was a sufficiently promising prospect to create explicit demands for domestic trade liberalization. Thus, as opportunities for reciprocal trade liberalization increase, demands for domestic trade liberalization should increase, and the protectionist bias of narrow interest institutions declines. That reciprocal trade negotiations can modify the impact of electoral institutions on tariff levels results in a second proposition.

Proposition 2.2. *The positive effect of narrow interest institutions on average tariff*

⁹Thus, while narrow interest institutions create more dispersed tariff rates within countries, a larger sensitivity to interest groups might also create more variance in average tariff rates across countries, a proposition that is not pursued further here.

levels should decrease in the number of trade negotiations in which a country has participated.

Before turning to an empirical evaluation of these two propositions, three alternative explanations are discussed: comparative advantage, differences in the political influence of industries, and the role of intermediate goods and multinational firms.

Comparative advantage. It is plausible that a higher dispersion in tariff rates across products arises under narrow interest institutions because different industries enjoy different degrees of comparative advantage relative to trade partners and electoral institutions reinforce these differences. For instance, in a country that has a comparative advantage in producing wood products, but a disadvantage in producing steel products, a government may have stronger incentives to protect the latter than the former. If these incentives are a function of electoral institutions, we might observe a larger dispersion in tariff rates under narrow interest institutions. This dispersion would not be due to the pattern of liberalization and protection described above. Instead, it is a function of the structure of a country's economy. Two empirical implications help distinguish between these two explanations. First, in an explanation based on differences in comparative advantage, the dispersion in tariff rates should arise across sectors, while tariff rates should be quite level within sectors (where the extent of comparative advantage is constant). By contrast, as noted above, the pattern of liberalization and protection emphasized in this chapter should result in a higher dispersion rate in tariff rates even within sectors. Second, in an explanation based on comparative advantage, narrow interest institutions should have unambiguously higher tariff levels, and trade agreements would be inconsequential for the average tariff level. By contrast, the explanation in this chapter implies that the effect of electoral institutions on tariff levels should be a function of trade agreements.

Differences in political influence. This second point also helps distinguish the argument from an explanation that emphasizes differences in the political strength of import-competing industries, which may create more dispersed tariff rates if such differences are amplified by political institutions. For instance, among two otherwise equivalent industries, the geographically more concentrated industry should be better able to secure protection (Busch and Reinhardt, 1999). If such differences are reinforced by narrow interest institutions, then more dispersed tariff rates arise based on differences in the political influence of firms, not because of reciprocal trade liberalization. While this is a plausible explanation for observing higher tariffs and a higher variance in tariff rates under narrow interest institutions, it cannot explain the pressure to liberalize select goods, and it would therefore not explain why the protectionist bias of narrow interest institutions decreases in the presence of reciprocal trade negotiations. Similarly, because such arguments are typically based on the political influence of industries, not firms, we should observe a higher dispersion in tariff rates only across, but not within, industries or sectors.

Intermediate inputs and multinational firms. A third alternative explanation is the presence of firms that use imported goods and the presence of multinational corporations. Some firms lobby for tariff reductions on intermediate inputs, and multinational corporations that take advantage of international production networks may lobby for tariff reductions on goods they produce abroad and sell in the home market (Milner, 1988). If narrow interest institutions are more susceptible to these demands, they would create more dispersed tariff rates and have an indeterminate effect on average tariff levels. Yet, because reciprocal trade negotiations are irrelevant in this explanation, the effect of narrow interest institutions on tariff levels should not be conditional on the presence of reciprocal negotiations; thus, the second proposition helps distinguish this explanation from the argument in this paper. Moreover, multinational corporations and

firms importing intermediate inputs do not require (unilateral or multilateral) domestic trade liberalization. Import subsidies are a more attractive alternative to governments, since they allow governments to avoid being caught in-between the interests of protectionist firms and importing firms. Moreover, because import subsidies benefit foreign producers, they are unlikely to raise complaints from foreign governments and producers.

Finally, in all three explanations, a higher dispersion in tariff rates would be caused by domestic institutions that are more susceptible to demands by narrow interest groups. While the theoretical mechanism would be complementary to the one proposed in this chapter, a higher dispersion in tariff rates remains a valid, but so far unused, indicator to assess how domestic institutions translate interest group demands into trade policies.

II.2 Empirical evidence

This section provides empirical evidence to assess the main propositions discussed in the previous section: first, narrow interest institutions should be associated with a higher dispersion in tariff rates, and, second, the protectionist bias of narrow interest institutions should decline in the number of trade negotiations in which a country has participated.

II.2.1 The structure of tariff rates

To measure dispersion in tariff rates, I draw on tariff data from the Trade Analysis Information System (TRAINS) of the United Nations Conference on Trade and Development, which provides tariff data for a cross-section of countries from 1988 to 2010 and, after accounting for data limitations on other variables, a sample of up to 137 developed and developing countries; all of these are GATT/WTO members. I use data at the four-digit level, which provides tariffs on up to 1255

products for each country-year. For instance, the data provides separate tariffs for ‘Wrist-watches, pocket-watches and other watches, including stop-watches, with case of precious metal or of metal clad with precious metal’, depending on whether they feature a ‘case of precious metal or of metal clad with precious metal’ (code 91.01) or whether they do not (code 91.02). For each country-year, I then compute the standard deviation in tariff rates across products.¹⁰ The standard deviation in tariff rates across products provides a direct measure of the overall dispersion in tariff rates; the appendix discusses alternative ways to evaluate the dispersion in tariff rates.

As noted above, unless the dispersion is exclusively due to differences in comparative advantage, the standard deviation should also increase within product categories. As a second dependent variable, I therefore calculate the standard deviation in tariff rates within broad product categories. To do so, I define fifteen product categories by their product codes, such as Mineral Products, Textiles, or Machinery and Electrical Products, following the Harmonized System classification scheme.

To define narrow interest institutions, note that trade policies affect both exporters and importers. Moreover, the argument in this chapter implies that trade policy typically does not affect entire industries the same way. Tariffs can be set on narrowly defined products, within and across industries. Indeed, for any given good, in most cases less than half a dozen of exporters exist (Cebeci et al., 2012). If conflict over trade policy is based on small sets of firms, not industries or even classes, political conflict runs along narrow lines, rather than broad segments of the population. Thus, interest groups are heterogeneous across districts – which is a crucial difference among arguments that find plurality systems to support narrow interest groups (such as Rogowski 1987) and those that find proportional

¹⁰Members of the European Communities are omitted from the data.

representation systems to support narrow interest groups (such as Rogowski and Kayser 2002).

Plurality systems tend to be more supportive of narrow, geographically heterogeneous districts than proportional representation systems for a number of reasons. Rogowski (1987) points to the small population size per district in single-member districts and the typically weaker parties in plurality systems as key factors enabling narrow interests to exert disproportionate influence. The smaller district size implies that individual legislators should be more willing to influence government policy on behalf of constituents. In the context of trade politics, smaller, single-member districts also imply that the congruence between firm and voter interests increases, reinforcing the incentives for legislators to provide policies that benefit firms in their constituencies – especially when the fortunes of voters are tied to local economic conditions, such as through home ownership (Scheve and Slaughter, 2001).¹¹

Data on political institutions are available from Beck et al. (2001); the variable `PLURALITY` is coded 0 for countries that use proportional representation systems and 1 for countries that use plurality rule.¹² While an indicator for plurality rule masks many differences within electoral systems, it has the advantage of being relatively simple and unambiguous, therefore being available for a large number of countries, and it is the variable used in the seminal literature. I consider several alternative variables for narrow interest institutions below: the number of electoral districts, the incentives to cultivate a personal vote, and the proportion of legislators with

¹¹In the context of United States policy-making, the President and members of the Senate are thought to pursue more broad-based interests than members of the House of Representatives, due to the differences in constituency size. Yet, Karol (2007) finds that differences in constituency size are a poor predictor of legislators' attitudes towards free trade and protectionism. The present argument provides an explanation for the result. Narrow constituencies need not be protectionist, and hence some legislators might well be in favor of free trade – not despite, but because of the small constituency size.

¹²In countries that use mixed systems, the variable is coded according to the rule that applies to the majority of seats.

subnational (hence particularistic) districts.

Country size is associated with both electoral institutions and trade openness (Katzenstein, 1985), and together with wealth also with the ability to engage with other countries in international negotiations. I therefore include the log of gross domestic product, GDP, and gross domestic product per capita, GDP PER CAPITA, as control variables. Because large agricultural sectors are prone to receiving protection (Davis, 2004), some models control for agricultural production as a percentage of gross domestic product, AGRICULTURE. The variables are obtained from the World Development Indicators.

Table 2.1. reports the results from models relating the standard deviation in tariff rates to political institutions; Table 2.2. replicates the models from Table 2.1., but uses the standard deviation in tariff rates within sectors as the dependent variable. The first three columns report results from generalized linear models that allow for serial correlation in the error term through a first-order auto-regressive process. The reported results allow the parameter for the auto-regressive process to vary for each panel. In almost all cases, larger coefficient estimates are obtained when restricting the parameter for the auto-regressive process to be identical across panels; similar results are obtained when allowing for serial correlation across panels. The first column omits any control variables, the second column includes two control variables, GDP and GDP PER CAPITA, and the third column additionally includes AGRICULTURE. The results are consistent with the first proposition: plurality electoral systems, as narrow interest institutions, are associated with more spread in tariff rates than proportional representation. The difference corresponds to about a thirty per cent increase compared to the sample average.

A small number of tariff rates assumes extreme values, some in excess of 2000 per cent. Such extreme values may skew results in linear regression models based on means; they may also skew the dependent variable itself, the standard deviation

in tariff rates. While such extreme values accurately reflect highly protectionist trade policies, they may unduly influence the results. I consider three approaches to assess the sensitivity of the results in Tables 2.1. and 2.2. to such extreme values. First, I drop tariff rates in excess of 1000 per cent from the calculation of the standard deviation. Second, I drop observations where the calculated standard deviation exceeds 100. The results are robust to these approaches (not reported).¹³ Third, instead of relying on a linear regression model based on means, column 4 reports the results of a quantile regression at the median of the data, which provides estimates that are more resilient to outliers. The results are substantively similar, suggesting that the results are not driven by few large observations.

¹³Dropping the largest one per cent or largest .1 per cent of tariff rates does not affect the results.

Table 2.1.: Standard Deviation in Tariff Rates,
Country-Year Level

	(1)	(2)	(3)	(4)
PLURALITY	1.54*** (.000)	2.17*** (.000)	2.53*** (.000)	2.73*** (.000)
GDP		.447*** (.000)	.489*** (.000)	.094 (.302)
GDP PER CAPITA		.052** (.023)	.038 (.106)	-.013 (.698)
AGRICULTURE			.023*** (.000)	-.009 (.326)
CONSTANT	10.3*** (.000)	-1.46 (.381)	-2.80 (.108)	4.85** (.029)
Number Obs.	1804	1780	1675	1679
Number Countries	137	136	129	134

Coefficient Estimates and p -values.

*** significant at 1%, ** significant at 5%, * significant at 10%.

Columns (1)-(3): GLS, AR(1) error process. (4): Quantile regression.

Table 2.2.: Standard Deviation in Tariff Rates,
Country-Year-Sector Level

	(1)	(2)	(3)	(4)
PLURALITY	1.10*** (.000)	1.39*** (.000)	1.53*** (.000)	1.02*** (.000)
GDP		.190*** (.000)	.215*** (.000)	-.099*** (.000)
GDP PER CAPITA		-.009*** (.005)	-.013*** (.004)	-.080*** (.000)
AGRICULTURE			.014*** (.000)	.001 (.654)
CONSTANT	7.06*** (.000)	2.36*** (.000)	1.51*** (.000)	7.90*** (.000)
Number Obs.	25,860	25,500	23,964	24,036

Coefficient Estimates and *p*-values.

*** significant at 1%, ** significant at 5%, * significant at 10%.

Columns (1)-(3): GLS, AR(1) error process. (4): Quantile regression.

The appendix provides a number of robustness checks and assesses alternative explanations, and considers, for instance, the role of government partisanship, veto players, region- and country-specific effects, or spatial dependence. The following addresses the four most salient robustness checks; the results are reported in Tables 2.3. and 2.4.. First, while the sample used for the previous models contains only countries that participate in at least one reciprocal trade agreement, the effect of plurality rule should increase in the number of trade agreements a country has negotiated. Many exporters have only a limited number of export markets, such that in any specific trade agreement only a limited number of exporters may be pushing for liberalization. The more trade agreements a country is member to, the larger is the number of exporters that had a chance to support domestic tariff reductions, and the stronger the link between narrow interest institutions and the dispersion in tariff rates should be. I therefore interact the variable on plurality rule with the logged number of a country's preferential trade agreements, obtained from Kucik (2012). As expected, the interaction between trade agreements and electoral rule is positive, such that the effect of plurality rule on the standard deviation in tariff levels increases in the number of trade agreements (column 1, Table 2.3.).

Figure 2.2. reports the marginal effect of plurality rule as a function of the number of trade agreements, with the distribution of the data on trade agreements shown in the background. For countries with the lowest number of trade agreements, the effect is close to zero; at the upper end of the distribution, the effect is about twice as large as in the models not accounting for the interaction term. This conditional effect is consistent with the theory based on reciprocal trade negotiations. By contrast, if the standard deviation in tariff rates arose from pressure from multinational corporations or reflected differences in the political influence of import-competing firms, the effect should not depend on the number

of trade agreements.¹⁴

Second, and as noted previously, multinational corporations may push for unilateral trade liberalization on goods that are produced abroad and re-imported. Then, the dispersion in tariff rates would not be due to reciprocity, but to unilateral liberalization. I include a variable measuring a country's stock of outward foreign direct investment as a percent of GDP, available from the World Bank, to account for the potential influence of multinational corporations (column 2, Table 2.3.). If a country's stock of foreign direct investment abroad is associated with the activities and political influence of multinational corporations (Wacker, 2013), then the variable on foreign direct investment stocks will account for this alternative explanation, such that the coefficient on plurality rule isolates the effect emphasized in this chapter. The coefficient on plurality rule remains statistically significant and slightly increases in size.

Third, I include the average tariff rate for the country-year as control variable (column 3, Table 2.3.). If plurality rule is associated with higher average tariff rates, and higher average tariff rates are associated with more dispersed tariff rates (because there is more room for downward movement), then the previously reported results would be biased. The results are also robust to this specification.

Finally, Table 2.4. considers three alternative measures for the incentives to provide policies to narrow constituencies, each representing a different dimension of common differences between plurality rule and proportional representation. First, as the number of electoral districts increases, the incentives to provide policies to narrow interest groups should increase as well: through a larger number of districts, smaller interest groups can gain representation in the political process

¹⁴Countries negotiating a large number of trade agreements could differ systematically from those countries that negotiate few trade agreements. To account for this potential endogeneity of trade agreements, I split the sample according to the electoral system variable and use the number of trade agreements by countries in the same geographic region in the previous year as instrument for a country's trade agreements (see Bütte and Milner (2008) for a similar strategy). The results are substantively similar.

Table 2.3.: Dispersion: Alternative Explanations

	(1)	(2)	(3)
PLURALITY	-.602*	3.05***	2.76***
	(.051)	(.000)	(.000)
x PTAs	1.55***		
	(.000)		
OUTWARD FDI		-.004	
		(.824)	
AVERAGE TARIFF			.040***
			(.000)
GDP	.413***	.490***	.347***
	(.000)	(.088)	(.000)
GDP PER CAPITA	.059**	.016	.074**
	(.011)	(.534)	(.016)
AGRICULTURE	.019*	.034***	.006
	(.079)	(.001)	(.552)
PTAs	-.176		
	(.406)		
CONSTANT	-.461	-2.73	-.080
	(.836)	(.182)	(.966)
Number Obs.	1456	1375	1657
Number Countries	108	110	129

Coefficient Estimates and *p*-values.

*** significant at 1%, ** significant at 5%, * significant at 10%.

Columns (1)-(3): GLS, AR(1) error process.

(Rogowski, 1987; Ehrlich, 2007). Data on the number of electoral districts are available from Golder (2005).¹⁵ Second, legislators from national constituencies should have more broad based interests than legislators from smaller geographic constituencies. I obtain a variable on the proportion of national constituencies from Seddon et al. (2002). The variable ranges from zero to one, where a value of zero represents a system where all legislators come from national districts. Third, the influence of narrow interest groups should increase as legislators have more ‘Incentives to Cultivate a Personal Vote’ (Carey and Shugart, 1995). Data are again available from Seddon et al. (2002). The variable is an index of party control

¹⁵Because the data are only available for one or two years for many countries in the sample, the table reports ordinary least squares estimates with standard errors clustered by countries.

over ballots, whether and how votes are pooled, and how votes are allocated. The resulting index ranges from zero to eight, with higher values indicating more incentives to cater to narrow interest groups. As with the variable on plurality versus proportional representation, incentives to cultivate a personal vote have been associated with more protectionist trade policies (Nielson, 2003).

The results using these alternative measures confirm the previous results: as the number of electoral districts increases, the share of legislators from nationwide districts decreases, and incentives for individual legislators to cater to narrow groups increase, the standard deviation in tariff rates increases. Moreover, these variables appear to pick up relevant aspects of the distinction between plurality rule and proportional representation. When including each of them in addition to the plurality rule variable, the coefficient on plurality rule loses statistical significance at conventional levels (except for the variable on subnational districts, where both coefficients remain significant).

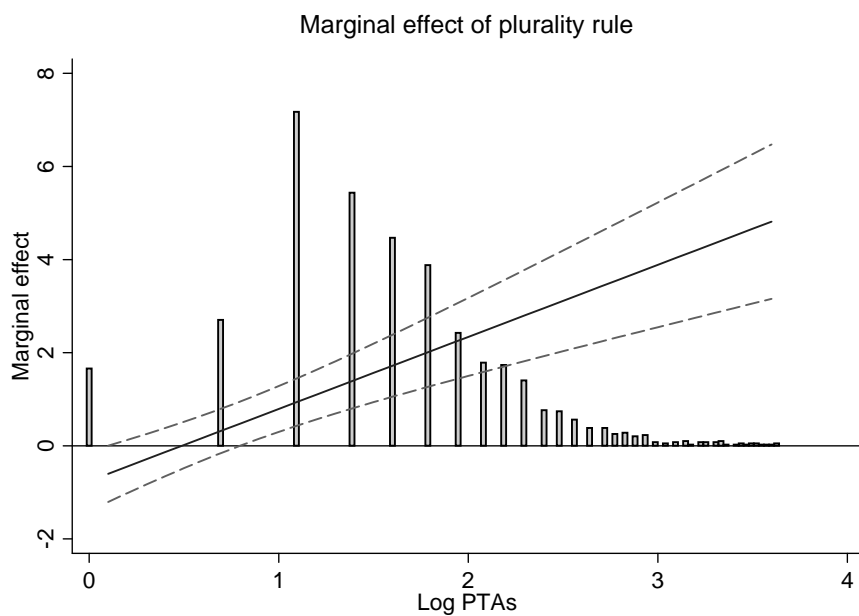


Figure 2.2.: Marginal effects of electoral system on standard deviation of tariff rates and 95 per cent confidence intervals, as a function of logged number of trade agreements. Histogram in the background shows the distribution of the data on trade agreements in the sample. Based on column 1 in Table 2.3.

Table 2.4.: Dispersion: Alternative Institutions

	(1)	(2)	(3)
DISTRICTS	1.78** (.018)		
SUBNATIONAL DISTRICTS		5.06*** (.000)	
PERSONAL VOTE			1.28*** (.000)
GDP	-.478 (.351)	.331** (.013)	.712*** (.000)
GDP PER CAPITA	.264* (.062)	.031 (.400)	.034 (.258)
CONSTANT	13.9 (.290)	-1.38 (.679)	-8.64 (.005)
Number Obs.	124	726	722
Number Countries	67	94	94

Coefficient Estimates and p -values.

*** significant at 1%, ** significant at 5%, * significant at 10%.

Column (1): OLS, clustered standard errors.

Columns (2) and (3): GLS, AR(1) error process.

II.2.2 Institutions and tariff levels

Proposition 2.2 suggests that the protectionist bias of narrow interest institutions decreases in the presence of reciprocal trade liberalization. To assess this relationship, I rely on average tariff levels as the dependent variable, obtained from the World Bank. Figure 2.3. shows preliminary evidence that the effect of plurality systems on tariff levels declines over time, as the number and – plausibly – the importance of reciprocal trade negotiations increases. The graph displays the average tariff rate for plurality and proportional representation systems from 1990 to 2010. Average tariff rates differed substantially across electoral systems in the early 1990s. The average tariff rate stayed relatively stable for proportional representation systems, but declined steadily for plurality systems, such that at the end of the sample period the differences between electoral systems are eliminated almost entirely.

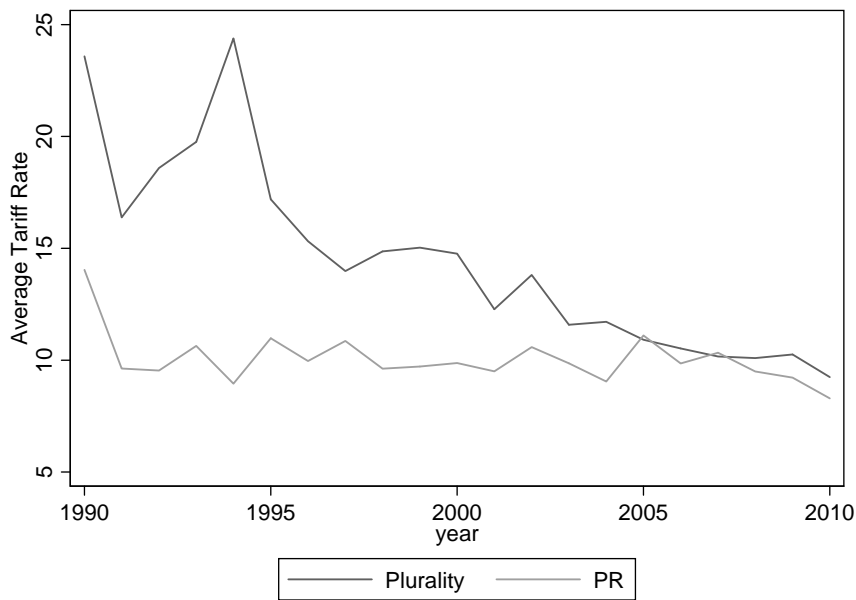


Figure 2.3.: Average tariff rates (World Development Indicators) 1989-2010, 145 countries.

Table 2.5. provides results from a number of regression models that account for the conditional effect of electoral institutions on tariff levels more rigorously. Proposition 2.2 suggested that the effect of plurality rule should be conditional on the number of trade agreements a country has negotiated, because opportunities for exporting firms to lobby for reciprocal trade liberalization increase with the number of a country's trade agreements. For the number of trade agreements, I rely on the same variable used above, obtained from Kucik (2012).¹⁶ Table 2.5. also presents results from two alternative measures. The second column relies on the number of negotiation rounds at the GATT/WTO a country participated in. I compute for each country the number of GATT/WTO negotiation rounds in which it participated.¹⁷ This variable ranges from zero to seven. The third

¹⁶Similar results are obtained when using the number of trade agreements by countries in the same geographic region in the previous year as instrument for the number of a country's trade agreements.

¹⁷While joining the GATT/WTO is a decision by individual countries, and therefore potentially gives rise to endogeneity concerns (only those countries with plurality systems that have an unusually strong interest in free trade enter into trade agreements), the timing of GATT/WTO rounds is not

column instead relies on the strength of exporters. More tariff reductions should be achieved in the presence of powerful interest groups pushing for improved export opportunities. One measure for the strength of exporter interests would be the size of the exporting sector. This variable, however, has clear disadvantages. Most importantly, firms may have strong interests in expanding export opportunities because they currently have relatively low exports. Thus, I consider the logged number of patents held by residents of a country in any given year as a measure for the global competitiveness of domestic firms. The more patents domestic residents hold, the more likely they are to benefit from export opportunities and therefore to support reciprocal trade liberalization. This variable is obtained from the World Intellectual Property Organization. The logged variable ranges from 0 to 14.5, which corresponds to a sample maximum of just over two million patents.

The results in Table 2.5. and the marginal effects displayed in Figure 2.4. indicate that at the upper end of the distribution – those countries with the most trade agreements, those countries that participated in the WTO the longest, and those countries whose residents hold the most patents – the effect of plurality rule on tariff levels either is close to zero or even turns negative. By contrast, at the lower end of the distribution – where reciprocal trade negotiations had the least effect – plurality rule is still associated with higher average tariff rates. These results demonstrate a conditional effect of domestic institutions on trade policies, consistent with Proposition 2.2. The results also provide evidence for an effect of international institutions on domestic politics that is more subtle than what is commonly ascribed to them. While there is little evidence that international institutions in general reduce average tariff rates, the protectionist bias of plurality rule is muted as the importance of reciprocal trade negotiations increases.

a decision by individual countries or governments. The drawback is that there are substantial concerns about whether participation in GATT/WTO rounds means the same thing for different countries, given that not all governments participate in GATT/WTO rounds with an equally strong voice.

The countries that participated in international institutions the most actively and that have the strongest exporting sectors tend to be developed countries. The effects of electoral institutions on tariff levels should be most muted among these countries, and the effects should differ from the effects among developing countries. A common distinction in this regard is membership in the Organization for Economic Co-Operation and Development (OECD), which is usually equated with the category of high-income countries. Column 4 in Table 2.5. interacts the variable for plurality rule with a dummy variable that equals one for OECD members and zero otherwise. The results indicate that plurality rule is associated with higher tariff levels in non-OECD countries, but the protectionist bias of plurality rule is more than offset for OECD countries, where proportional representation systems are associated with higher average tariff rates.

The differential impact of domestic institutions may go some way in explaining existing mixed results on the impact of electoral rule on average tariff levels, because data are often collected along income levels. For instance, Ehrlich (2007) looks at tariff levels in developed democracies, while Nielson (2003) looks at trade protection in middle-income countries, and Rogowski and Kayser (2002) look at price levels in OECD countries. Similarly, there may be little relationship between district size and trade policy stances of United States legislators (Karol, 2007), but this need not be the case in settings where opportunities for reciprocal trade concessions are fewer and exporter pressures for liberalization weaker than in the United States. The focus on specific product categories, such as agricultural products (see, for instance, Weinberg 2012 and Park and Jensen 2007), introduces another source of bias if the goal is to draw inferences about protectionism, or the balance between producer and consumer power more generally. Narrow interest institutions may result in lower average tariff levels for some product categories if those tariffs were liberalized in exchange for market access in other goods.

Table 2.5.: Tariff Levels and Institutions

	(1)	(2)	(3)	(4)
PLURALITY	3.40*** (.000)	3.44*** (.000)	1.04*** (.000)	1.99*** (.000)
x PTAs	-0.973*** (.000)			
x GATT/WTO ROUNDS		-0.668*** (.000)		
x PATENTS			-0.073** (.019)	
x OECD				-2.51*** (.000)
PTAs	.234 (.117)			
GATT/WTO ROUNDS		.446*** (.000)		
PATENTS			.098** (.001)	
OECD				1.17*** (.000)
GDP	-2.05*** (.000)	-2.22*** (.000)	-1.58*** (.000)	-2.15*** (.000)
GDP PER CAPITA	.023 (.267)	.034** (.042)	-.013 (.107)	.008 (.609)
CONSTANT	25.6*** (.000)	26.1*** (.000)	21.3*** (.000)	27.2*** (.000)
Number Obs.	1089	1144	409	1144
Number Countries	115	119	83	119

Coefficient Estimates and p -values.

*** significant at 1%, ** significant at 5%, * significant at 10%.

Columns (1)-(3): GLS, AR(1) error process.

II.2.3 Additional results

This section provides two additional pieces of evidence to corroborate the plausibility of the argument in this chapter. The first shows that the protectionist bias of narrow interest institutions is still present with non-tariff barriers, which have not been subject to as extensive international negotiations. The second shows that the contemporaneous influence of import-competing and exporter interests is also evident in political campaigns.¹⁸

II.2.3.1 Non-tariff barriers

Non-tariff barriers (NTBs) are an important alternative to tariffs (see, e.g., Kono 2009; Mansfield and Busch 1995). NTBs have not been subject to as extensive negotiations as tariffs. NTBs may also engender different political dynamics. For instance, large firms may benefit from NTBs that are difficult or costly to meet and thereby restrict market access for new entrants, essentially ensuring monopoly or oligopoly rents to the incumbent firms. Because the harmonization of NTBs in many cases imposes adjustment costs unilaterally, the political demands for liberalization and standardization are reduced further. Thus, there may be less demand for the (reciprocal) liberalization of NTBs than for tariffs. If reciprocal trade negotiations have been less relevant for NTBs than for tariffs, then we may expect that differences in electoral institutions should still be visible in the levels of NTBs. To obtain comparable measures of protection through tariffs and protection through non-tariff barriers, I draw on the Overall Trade Restrictiveness Index (OTRI) provided by Kee, Nicita and Olarreaga (2009), which is an aggregate measure of protectionist policies. The OTRI provides the tariff rate that, if applied uniformly across all products, would leave aggregate imports unchanged. The OTRI measure is available for a sample of 87 countries (once data limitations on electoral institutions are taken

¹⁸The next chapter provides a more thorough treatment of the second point as well.

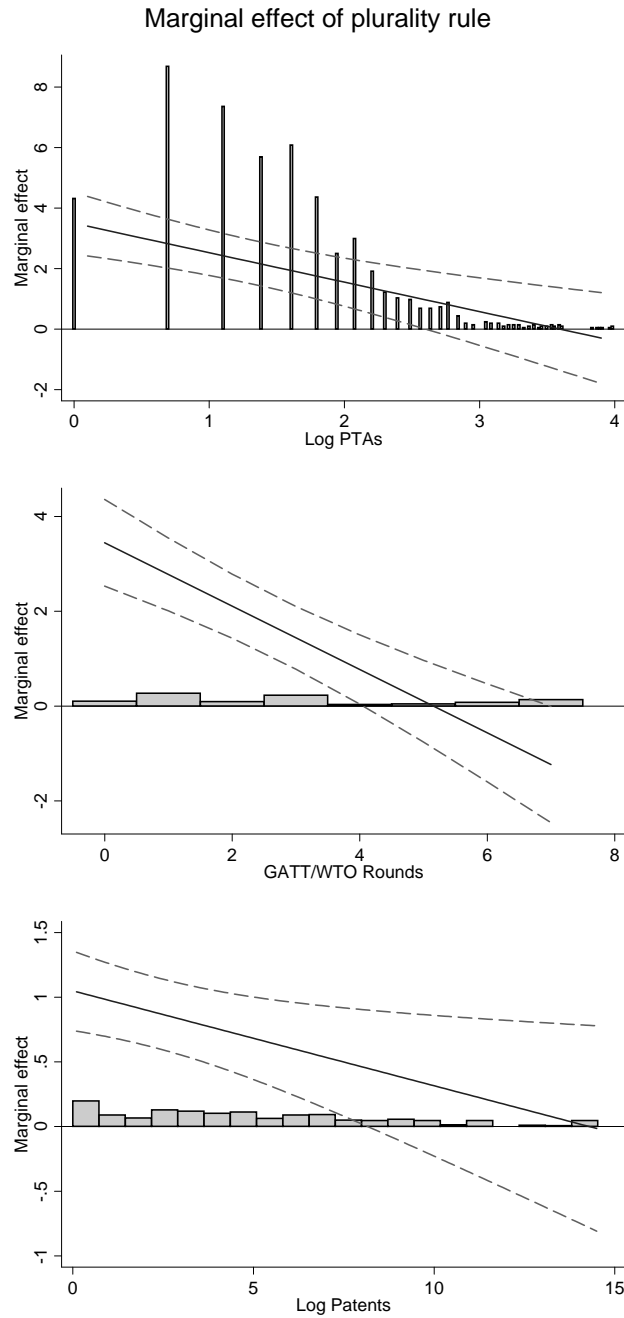


Figure 2.4.: Marginal effects of electoral system on tariff levels, and 95 per cent confidence intervals, as a function of logged number of trade agreements (top), GATT/WTO rounds (middle), and log patents held by domestic residents (bottom). Histograms in the background show the distribution of the data in the sample. Based on Table 2.5.

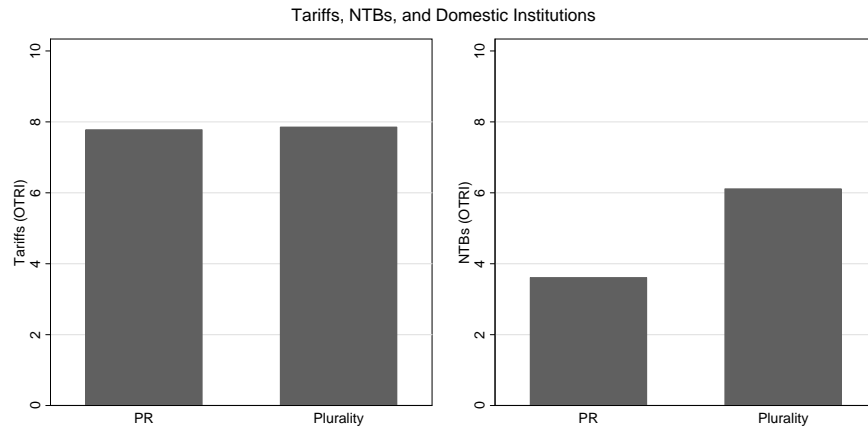


Figure 2.5.: Average tariff barriers (left panel) and non-tariff barriers (right panel) to trade for plurality and proportional representation system, using OTRI data from Kee, Nicita and Olarreaga (2009). Data covers 87 countries.

into account) in 2009 and on comparable scales for both tariff and non-tariff barriers, which allows a direct evaluation of whether the differences are more pronounced for NTBs than for tariffs. Figure 2.5. suggests that this is indeed the case. The left panel shows that average tariff rates among plurality and proportional representation systems are almost identical. By contrast, the right panel shows that the equivalent average rate for non-tariff barriers is substantially higher for plurality systems than for proportional representation systems (however, the difference is not statistically significant at the conventional five per cent level). The differences between tariffs and NTBs are consistent with the interpretation that governments increasingly turn to NTBs instead of tariffs to provide protectionist trade policies (Marvel and Ray, 1983). In this view, tariffs and NTBs are substitutes, and the incentives to engage in this form of substitution are plausibly larger in plurality systems, limiting the impact of international negotiations on effective trade liberalization, as it might be observed in trade flows.

II.2.3.2 Electoral campaigns

The incentives to appeal to both protectionist and exporter interests should also be evident in political campaigns. While the existing literature focuses on protectionist interest groups, exporting firms can be a valuable target in political campaigns. In 1986, John Dingell, who at the time chaired the Subcommittee on Oversight and Investigations, circulated a report which concluded that “U.S. trade policy generally, and policy toward export promotion specifically, has been conducted on an ad hoc basis, addressing problems only after significant political pressure has been applied” (cited in Bayard and Elliott 1994, p. 32). The statement shows that exporters were able to exert political pressure and, conversely, suggests that exporters can be a valuable target in political campaigns. Thus, if exporters and protectionist groups are targeted as narrow interest groups in political campaigns, plurality rule should be associated with more references to both free trade and protectionism. This proposition contrasts with the existing literature, according to which institutions that create more incentives to appeal to the general public should create more incentives to appeal to free trade (which benefits consumers) than to protectionism (which benefits protectionist firms as narrow interest groups). A finding that the same set of political institutions is associated with more appeals to both free and trade protectionism would be puzzling from the perspective of standard accounts, but consistent with the theory presented here.

To assess the relationship between electoral systems and political rhetoric, I leverage data from the Comparative Party Manifesto Project (Volkens et al., 2011), which codes the proportion of sentences in electoral platforms of political parties devoted to specific topics. I create three variables, aggregating data across parties for each election-year. The first is the proportion of positive references to protectionism by all parties in a country. In order to avoid that the positions of a few extreme, but politically irrelevant, parties bias the results, the parties’ positions are weighted by

their vote shares in the election.¹⁹ The variable may therefore be interpreted as the electoral appeal of protectionist trade policies in a country. The second variable measures negative references to protectionism and positive references to free trade, mirroring the first variable. The third variable is the difference between these two variables and can be interpreted as the net appeal of free trade policies. In total, the data set contains observations on 48 countries from 1975 to 2010. The first two variables are proportions. In about 13 per cent of the observations no party made any references to protectionism or free trade (the results in the following are robust to omitting these cases). Because of the presence of observations that assume zero values, I estimate a generalized linear model with logit link (Papke and Wooldridge, 1996). The results in the following are similar when estimating a linear regression model. Similar results are also obtained from non-linear least squares estimates when modeling the dependent variable using a logistic function and including a lagged dependent variable additively, as show in the appendix. The next chapter provides results when estimating the models using an adjusted beta regression model, which allows for distinct processes to produce zeros and positive values. The third variable may take on positive or negative values. I therefore estimate a linear regression model. All three models include the previous control variables, GDP and GDP PER CAPITA.

The results in Table 2.6. suggest that plurality systems in fact make more positive references to protectionist trade policies. Moving from a proportional representation system to a plurality system roughly doubles positive references to protectionism. However, plurality systems are also associated with more references to free trade and negative references to protectionism. Substantively, plurality system make about three times as many references in favor of free

¹⁹The results are robust to using the unweighted measure, but conceptually the weighted sum seems the more appropriate measure. The variable is normalized by the number of parties in a country; otherwise, countries with a larger number of parties would receive higher values.

Table 2.6.: Manifestos and Institutions

	(1) Protectionism	(2) Free Trade	(3) Difference
PLURALITY	.771*** (.002)	1.09*** (.000)	.001 (.183)
GDP	-.038 (.445)	-.074 (.316)	-.000 (.734)
GDP PER CAPITA	-1.55 (.122)	-.026 (.976)	.001 (.238)
CONSTANT	-5.80*** (.000)	-5.07*** (.006)	.001 (.773)
Number Obs.	341	341	341
Number Countries	48	48	48

Coefficient Estimates and p -values. *** significant at 1%, ** at 5%, * at 10%. Column (1): GLM, logit link. DV: Protectionism. Column (2): GLM, logit link. DV: Free trade. Column (3): OLS. DV: Protectionism – Free trade.

trade as proportional representation systems. In both cases, the effects are statistically significant, with p -values of .000. The third column, finally, shows that plurality systems are not biased in favor of protectionism in terms of net references: the difference between proportional representation and plurality systems is small and not statistically significant at conventional levels. There is nothing inherently protectionist about plurality rule. While narrow interest institutions are plausibly geared towards pleasing narrow interest groups, these groups need not be protectionist.

II.3 Conclusion

This chapter highlights a specific instance of how international institutions affect domestic politics. In the unilateral framework, institutions favoring narrow interests are expected to produce more protectionist trade policies. In the context of international institutions, these same institutions are no longer linked to more protectionist trade policies, but to more dispersed tariff rates across groups. This result responds to calls for more research on how international institutions affect domestic politics (West and Lee, 2014), in particular in the field of open economy politics (Lake, 2009, pp. 237-238), and it shows how the joint effects of domestic and international institutions differ substantially from their effects in isolation. An international political economy approach that accounts for both international factors, such as the possibility of international agreements, and domestic factors, such as domestic electoral institutions, is required to account for the political dynamics in trade politics.

Reciprocity is one of the main pillars of the GATT/WTO's success in reducing tariff barriers (Oatley, 2010). The argument in this chapter suggests that reciprocity may be poorly suited to achieve universal trade liberalization. First, if protectionism becomes a more scarce policy, granting protectionism to specific firms becomes a more meaningful tool to policy-makers. Reciprocity makes protectionism less attractive to grant for some goods – those where the government can turn liberalization into a valuable concession to domestic exporters – but more attractive for others. In several instances, protectionist trade policies in the United States were contested by exporters, and yet the government upheld the protectionist policies (Destler and Odell, 1987). In these cases, resisting demands for liberalization strengthened the government's ability to demonstrate its support to protectionist groups.

Second, reciprocity creates incentives to maintain protectionist trade policies as

bargaining chips in negotiations. For instance, in the negotiations between Germany and Austria over a trade agreement in 1891, the German government faced domestic demands to reduce tariffs on agricultural goods in order to lower food prices. While in general inclined to do so, German negotiators quickly recognized that a unilateral tariff reduction would weaken Germany's bargaining position, since it could no longer demand a reduction of Austrian tariffs on industrial goods in exchange. Consequently, German negotiators went to all lengths to avoid a unilateral tariff reduction and to diffuse rumors about mounting domestic demands that could force a unilateral reduction (Weitowitz, 1978, p. 27). Similarly, many proponents of free trade in the United States in the early 20th century pushed for temporarily protectionist trade policies at home in order to force open foreign markets and increase the concessions extracted during negotiations. However, once protectionist policies are granted to some firms, it can be difficult to reverse these policies if reciprocal negotiations stall or fail. In this case, reciprocal trade negotiations would contribute to an increase in tariff rates on some products.²⁰

Both of these effects put a dent into arguments that regard reciprocity as key to liberalizing trade universally. The most politically savvy firms may well be able to maintain protectionist policies in their favor, and some firms may receive protection merely for the sake of maintaining a strong bargaining position. Instead of resulting in universal free trade, reciprocity results in spotty liberalization: Compared to unilateral policy-making, the incentives to provide protection to some firms are strengthened, while they are weakened for others. In this regard, the view on trade agreements emphasized here differs from the literature that treats trade agreements as solutions to domestic commitment or information problems, and in particular from those parts of the literature that consider trade agreements as signals to voters

²⁰Pond (2014) argues that the temporary protection afforded by trade sanctions strengthens demands by import-competing firms in the sanctioned country for continued protection through tariffs, even once sanctions are lifted. Temporarily provided protection, used as bargaining chip in negotiations, plausibly can have similar effects on strengthening protectionist demands.

that the government is free of influence by special interest groups (Mansfield and Milner, 2012, pp. 15-16). The tariff reductions achieved in trade agreements are as much a signal of the influence of special interest groups as are the exemptions granted. Rather than signaling a government's independence from special interest groups, trade agreements demonstrate the government's support for a specific set of interest groups, some of them protectionist and some of them exporters.

The chapter also speaks to the literature that emphasizes the ability of international institutions to create pro-cooperation groups that monitor and enforce agreements (Dai, 2007). Trade agreements, from this perspective, create pro-cooperation groups that push for domestic trade liberalization. The argument in this chapter suggests that this relationship is dependent both on the strength of anti-cooperation groups – protectionist firms – and the nature of domestic political institutions. While international agreements may be able to mobilize domestic pro-compliance groups, they tend to do so most successfully in environments that also advantage groups opposing cooperation and compliance, potentially resulting in more domestic contestation over policies and international agreements. More generally, those governments that have the strongest domestic incentives to cooperate and to comply with international agreements also tend to have the strongest incentives to defect from agreements, which suggests that there might be few observable differences in the effects of international agreements on policy outcomes and compliance rates across institutional settings.

The decision to support exporters can have implications beyond trade politics. Many countries rely on foreign currency denominated debt to finance government expenditures. Such debt requires foreign currency for repayment, and export revenue can be a substantial contributor to a country's foreign exchange position. Revenue from export receipts can also be crucial for a country's ability to operate a managed exchange rate regime, because foreign exchange reserves are needed

for the market interventions necessitated by a managed exchange rate regime. Reciprocal trade negotiations may allow governments to score points politically with exporting firms while at the same time securing access to foreign exchange. The coincidence of political and economic motives in such circumstances can make participation in international negotiations and institutions an important tool to governments. Once established, the presence of strong exporters may help governments carry foreign currency denominated debt and operate managed exchange rates, both of which have important macroeconomic implications (Walter, 2008). Concerns about their external financial positions may trigger governments to push stronger on behalf of their exporters. International institutions provide one means to do so, such that the effects of international trade agreements may go well beyond trade policies.

II.A Appendix

II.A.1 Empirical models

This section of the appendix contains additional empirical models for the propositions on the dispersion in tariff rates as well as for the data on electoral party platforms. I consider a combination of additional control variables, different variable measurements, and different estimation methods.

II.A.1.1 Dispersion in tariff rates

The empirical models in the main body of the chapter were very sparse and included few control variables. Table 2.A.1. provides a number of additional models that include control variables common in studies of trade politics. Column 1 controls for the logged length of a country's coast line. Countries with longer coast lines tend to be more reliant on trade; at the same time, longer coast lines also make it harder to combat smuggling, which may have implications for a country's tariff rates. The variable is available from the CIA Factbook. While there are quite substantial problems in measuring and estimating coast lines (mainly because of the dependence on the level of aggregation), this variable is publicly available and used elsewhere and appears as sufficient for the present purposes. Where different measures were available, I used only the coast line of a country's main land, not of related islands. As the results show, countries with longer coast lines tend to have more dispersed tariff rates, but the inclusion of the control variable does not affect the coefficient on plurality rule.

Second, country size has been associated with both trade openness and the electoral rule: smaller countries tend to be more dependent on trade and also tend to be more likely to have electoral rules following proportional representation. While log GDP is one measure of country size, logged population size, available

from the World Bank, is a popular alternative. Column 2 shows that population size is associated with more dispersed tariff rates, and that the coefficient on plurality rule remains positive and significant after including the variable. The third column includes a variable for natural resource wealth, obtained from the World Bank. Again, the coefficient estimate on plurality rule is hardly affected by including this control variable.

Fourth, left governments have been argued to pursue more protectionist trade policies (e.g., McKibben and Taylor 2014). Left governments also tend to be represented in government more often under proportional representation (Iversen and Soskice, 2006), such that partisanship may be an important confounder. Column 4 therefore includes a variable to control for the partisanship of the chief executive, obtained from the Database of Political Institutions (Beck et al., 2001), which emphasizes the economic orientation of governments. The results in column 4 show that left governments have more dispersed tariff rates, but including the variable in the empirical model does not wash out the effect of the electoral rule; while the coefficient drops in size, much of this change is attributable to the change in the estimation sample that is due to including the additional variable; note that the number of observations decreases by about a third.

Fifth, as an institutional variable, the number of veto players may be an important confounding variable. Veto players are actors who can block a policy change (Tsebelis, 2002). Moreover, previous authors have found that veto players assume an important role in trade politics (Mansfield and Milner, 2012): Their ability to block policy change may prevent the negotiation of trade agreements; at the same time, governments with large numbers of veto players may feel compelled to 'tie their hands' by negotiating trade agreements that overcome domestic opposition. Column 5 includes the number of veto players, as measured by the Database of Political Institutions (Beck et al., 2001). The variable is increased

by one, for instance, if in a presidential system the government is divided (the chief executive is from a different party than the legislature's majority), and in parliamentary systems for each party in the government coalition. Since the number of parties in particular has been related to the electoral rule, there is some concern that the number of veto players may be correlated with the electoral rule. The results in column 5 show, however, that the main results are unaffected by the inclusion of the additional control variable. It is also notable that the coefficient on veto players is negative, suggesting that a larger number of veto players is associated with less dispersed tariff rates.

On the one hand, this result may be interpreted as being broadly consistent with the theory in this chapter. If the dispersion comes indeed about through trade negotiations and the incentives of governments to sacrifice some import-competing interest groups for the sake of obtaining market access abroad in exchange, veto players should facilitate blocking such changes in policy and consequently be associated with less dispersed tariff rates. On the other hand, while it is encouraging that the results are not affected by the inclusion of the variable on veto players, the notion of veto players poses some conceptual problems for the trade politics literature. In some ways, veto player theories takes a view of the policy-making process that is vastly different from what is prevalent in the trade literature. In the veto player literature, the dominant approach is to think about ways to block change; by contrast, in the trade politics literature, much of the focus is on how actors gain access to influence the policy-making process. While the two approaches are not mutually exclusive, they do arrive at rather different conclusions: For veto player theory, more access implies less change and greater policy stability; for most theories related to trade politics, more access implies more policy bias towards special interest group, largely regardless of the status quo. It seems plausible that individual veto players, who could block trade liberalization, can

be ‘flipped’ through political pressure from exporter interest groups who prefer free trade; and those protectionist interest groups that fail to capture a veto player may be sacrificed as well. But this is clearly not sufficient to reconcile the different theoretical intuitions behind veto player theory and access-based approaches to trade politics, and I would note that this topic deserves a more coherent and full treatment elsewhere.

Finally, column 6 controls for regional fixed effects, since electoral rules and, plausibly, tariff rates share some forms of regional clustering. Column 7 includes year fixed effects as one way to account for contemporaneous correlation and common time shocks. The main results are again robust to these additions.

Table 2.A.1.: Dispersion: Alternative Explanations and Control Variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
PLURALITY	2.33*** (.000)	2.15*** (.000)	2.20*** (.000)	1.86*** (.000)	2.32*** (.000)	2.15*** (.000)	2.43*** (.000)
COAST LINE	.346*** (.000)						
POPULATION		.604*** (.000)					
NATURAL RESOURCES			.001 (.564)				
LEFT GOVERNMENT				.721*** (.000)			
VETO PLAYERS					-.091** (.011)		
GDP	.286*** (.000)	.002 (.975)	.451*** (.000)	-.025 (.690)	.492 (.000)	.588*** (.000)	.417*** (.000)
GDP PER CAPITA	.049** (.012)	.098 (.000)	.056** (.016)	.167*** (.000)	.041* (.052)	.056** (.029)	.122*** (.000)
CONSTANT	.629 (.638)	-.628 (.616)	-1.59 (.348)	8.27*** (.000)	-2.28 (.182)	-2.82 (.280)	4.78* (.069)
Number Obs.	1734	1773	1770	1087	1766	1780	1780
Number Countries	133	136	136	88	136	136	136
Region Dummies	-	-	-	-	-	yes	-
Year Dummies	-	-	-	-	-	-	yes

Coefficient Estimates and p -values. *** significant at 1%, ** significant at 5%, * significant at 10%. All models: FGLS, AR(1) error process.

The previous tables reported mostly the estimates from models estimated with feasible generalized least squares and allowed for serial correlation in the error process through an AR(1) process. Table 2.A.2. considers three alternative estimators, each of which accounts for cross-sectional, contemporaneous correlation as well. Column 1 relies on the Driscoll-Kraay estimator for the covariance matrix, which provides standard errors that are robust to cross-sectional correlation as well as to heteroskedasticity and autocorrelation that follows a moving-average process (as opposed to an autoregressive process, which was the assumption underlying the FGLS estimates). The estimator is robust to spatial correlation, since it is a heteroskedasticity and auto-correlation (HAC) robust covariance matrix estimator based on cross-sectional averages of the moment conditions (as opposed to averages of each individual's HAC covariance matrix). Vogelsang (2012) provides an asymptotic theory ('fixed-b asymptotics') which improves inference substantially compared to conventional inference based on a normal approximation.²¹ As shown in Column 1, the results are robust to these alternative standard errors.

Column 2 provides estimates from ordinary least squares with clustered standard errors. In order to account for serial as well as cross-sectional correlation, which is a form of non-nested correlation, I compute standard errors that are two-way clustered as described in Cameron, Gelbach and Miller (2011), which are standard errors on standard sandwich-form variance estimators (White, 1980). In particular, let $\widehat{\mathbf{V}}_c$ be the estimated variance matrix clustered on countries, let $\widehat{\mathbf{V}}_t$ be the estimated variance matrix clustered on years, and let $\widehat{\mathbf{V}}_{tc}$ be the estimated OLS variance matrix. Then, the double-clustered standard errors are obtained as the square root of the diagonal elements of

$$\widehat{\mathbf{V}} = \widehat{\mathbf{V}}_c + \widehat{\mathbf{V}}_t - \widehat{\mathbf{V}}_{tc}. \quad (2.1)$$

²¹See Mueller (2014) for a discussion; Bunzel, Kiefer and Vogelsang (2001) provide additional discussion and an application to non-linear models.

These two-way clustered standard errors have a number of advantages over the other alternatives considered above. Most notably, because they are non-parametric, they do not rely on any specific assumptions about the error process in either the cross-section or over time.²² Column 2 in Table 2.A.2. shows that the coefficient estimate on plurality rule is significant at the 10 per cent level when using double-clustered standard errors, but no longer at the 5 per cent level.

The third column models the potential spatial correlation explicitly through a spatial lag, following the discussion in Franzese and Hays (2007). In particular, the model to be estimated is, following equation 2 in Franzese and Hays (2007),

$$\mathbf{y} = \rho \mathbf{W}\mathbf{y} + \mathbf{X}\boldsymbol{\beta} + \boldsymbol{\epsilon}, \quad (2.2)$$

with dependent variable \mathbf{y} , covariate matrix \mathbf{X} , coefficient vector $\boldsymbol{\beta}$, scalar ρ , residual vector $\boldsymbol{\epsilon}$, and a spatial-weighting matrix \mathbf{W} . The spatial model defined in equation (2.2) gives rise to two considerations. First, the spatial lag, $\mathbf{W}\mathbf{y}$, allows the dependent variable – tariff dispersion – to be affected by the tariff dispersion in other countries. As noted by Franzese and Hays (2007, p. 142), this is different from, for instance, time shocks that affect all countries the same way (which could be modeled using year fixed effects) or external shocks whose effects may depend country characteristics. Instead, the spatial lag allows the tariff dispersion in other countries to directly affect a country’s tariff dispersion, and for this country’s tariff dispersion to feed back into other countries’ tariff dispersion. As this latter part indicates, spatial dependence thus defined implies endogeneity of the spatial lag, and consequently estimating equation (2.2) by ordinary least squares results in biased, inconsistent estimates. I therefore follow Franzese and Hays (2007) and

²²The drawback, of course, is that this may come at a loss of efficiency and, with short or small panels, potentially severely biased inference. A potential solution to address the small-sample bias is, drawing on the literature on clustered standard errors in small samples (for a review, see Cameron and Miller (2015)) to base inference on a T distribution with degrees of freedom equal to $\min\{\#\text{countries} - 1, \#\text{years} - 1\}$, but I leave this question open for future research.

employ their spatial maximum likelihood estimator.

Second, to estimate the model, the spatial-weighting matrix \mathbf{W} has to be specified. I model these spatial effects as occurring through joint membership in a preferential trade agreement. This implies that the spatial lag, $\mathbf{W}\mathbf{y}$, for observation i effectively becomes the average tariff dispersion in countries $j \neq i$ that have negotiated a trade agreement with i ; the tariff dispersion in countries $j \neq i$ that have not negotiated a trade agreement with i does not enter the spatial lag for country i at all. The results in Column 3 of Table 2.A.2. show that the positive association between plurality rule and tariff dispersion remains. In addition, the results show that there is an, albeit small, spatial interdependence in tariff dispersion, as indicated by the coefficient on the spatial lag.

Table 2.A.2.: Alternative Empirical Models

	(1)	(2)	(3)
PLURALITY	2.94*** (.000)	2.94* (.061)	3.16*** (.000)
GDP	.760*** (.000)	.760 (.152)	.856*** (.000)
GDP PER CAPITA	.076 (.123)	.076 (.487)	.062 (.127)
SPATIAL LAG			.004** (.013)
CONSTANT	-9.02*** (.003)	-9.02 (.461)	-12.1*** (.018)
Number Obs.	1784	1784	1694

Coefficient Estimates and p -values. *** significant at 1%, ** significant at 5%, * significant at 10%. (1) Driscoll-Kraay, fixed-b asymptotics. (2) Two-way clustered standard errors, clustered on country and year. (3) Spatial lag, using membership in preferential trade agreements as weights.

Most of the previous models measured the dispersion in tariff rates as the standard deviation in tariff rates across products. While the standard deviation provides a familiar and convenient measure of dispersion, it also has a number of drawbacks, not least due to its strong parametric form. Moreover, it makes the previous models sensitive to outliers in two ways: single high tariff rates may skew not only the coefficient estimates from linear models based on means, but also the calculation of the standard deviation in the first place. As an alternative to modeling the dispersion in tariff rates using the standard deviation, this subsection provides results from quantile regression models.

Quantile regression provides a more flexible means to evaluate the relationship between the variance in tariff rates and electoral rules. While a regression line estimates a line at the mean, quantile regression provides a regression line for percentiles of the data. Most commonly, this is the median, or the 50th percentile, because the median is identical to the mean if the data is symmetric, yet it is more robust to extreme values in the data than the mean. However, quantile regression can also be applied to other percentiles of the data, which in turn can be used to evaluate the relationship between the variance in the dependent variable and a covariate. If the variance of the dependent variable is independent of the covariate, then the regression lines for different percentiles should have the same slope, that is, they should run in parallel. By contrast, if the variance of the dependent variable is a (linear) function of the covariate, then the slopes for different percentiles will differ. Most importantly, if the dependent variable fans out as the value of the covariate increases, then the quantile regression lines for different percentiles should also fan out. Specifically, the slope at lower percentiles should be smaller than the slope at higher percentiles, and consequently the difference in the slope, the interquartile range, should increase in x . Most commonly, the interquartile slope is calculated for the 25th and the 75th percentile or the 10th and the 90th

percentile.

Figure 2.A.1. provides two examples to illustrate these points. The left panel represents data where the variance of the dependent variable on the y -axis is independent of the covariate on the x -axis. Consequently, the slopes of the quantile regression at the 25th, 50th, and 75th percentile are identical. By contrast, the right panel represents data where the variance of the dependent variable increases with the predictor variable. Consequently, the slopes of the quantile regression at the 25th, 50th, and 75th percentile fan out, indicating the larger dispersion in the data at higher values of the covariate.²³

²³See Koenker and Bassett (1978) for the first description of quantile regression models. Deaton (1997, pp. 80-83) offers a brief overview. Stasavage (2002) provides an application to assess whether an increase in political constraints is associated with less variation in private investment levels.

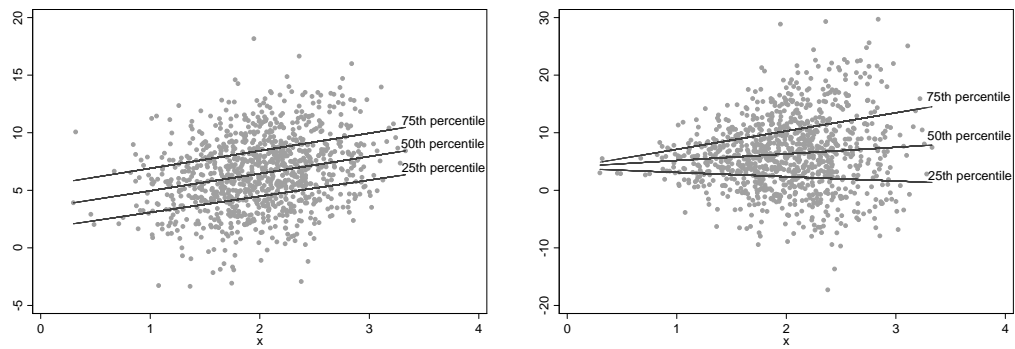


Figure 2.A.1.: Illustration of quantile regression to evaluate whether the dispersion in tariff rates increases in a covariate x . In the left panel, the dispersion in tariff rates is constant and not a function of x . In the right panel, the dispersion increases in x . Both panels include quantile regression lines for the 25th, 50th, and 75th percentiles. Note how the lines fan out in the right panel, while they are parallel in the left panel. Consequently, if the difference between quantiles, the interquartile range, increases in x , the dispersion increases.

The implication for the link between electoral systems and variation in tariff rates is that the coefficient on plurality electoral systems should increase at higher percentiles of the data, such that the interquartile range – the difference in the slopes at different percentiles of the data – should be higher under plurality rule. Table 2.A.3. shows that this is indeed the case for both the comparison between the 25th and the 75th percentile and for the comparison between the 10th and the 90th percentile. The models in Table 2.A.3. are identical to previous ones and control for log GDP and GDP per capita. To obtain p -values that take into account the serial correlation in the data, standard errors were obtained through a bootstrap clustered on countries. As the results show, the interquartile range indeed increases in plurality rule; the coefficient estimate is positive and statistically significant at the 1% level.

Table 2.A.3.: Interquartile Range

	25th-75th	10th-90th
PLURALITY	2.45*** (.000)	3.84*** (.005)
GDP	.062 (.631)	-.033 (.927)
GDP PER CAPITA	.019 (.342)	.110 (.237)
CONSTANT	2.17 (.477)	9.79 (.244)

Coefficient Estimates and p -values. *** significant at 1%, ** significant at 5%, * significant at 10%. p -values based on cluster-bootstrap (by countries).

II.A.1.2 Party platforms

Figure 2.A.2. displays the marginal effects of plurality rule on the number of references to protectionism and free trade, respectively, for the models shown in Table 2.6. in the main chapter. The marginal effect is expressed as a percentage and represents the difference between plurality rule and proportional representation, relative to proportional representation. Thus, Figure 2.A.2. shows that plurality rule is associated with about 200 per cent more references in support of protectionist trade policies, but also with more than 300 per cent more references in support of free trade. As mentioned in the main body of the text, the first result is broadly consistent with the extant literature, while the second is not. Moreover, and in line with the mixed effects in the case of average tariff rates, there is no evidence that plurality rule produces policy-makers that are, in terms of net statements in favor of free trade, any more or less protectionist than those under proportional representation (see Column 3 in Table 2.6.).

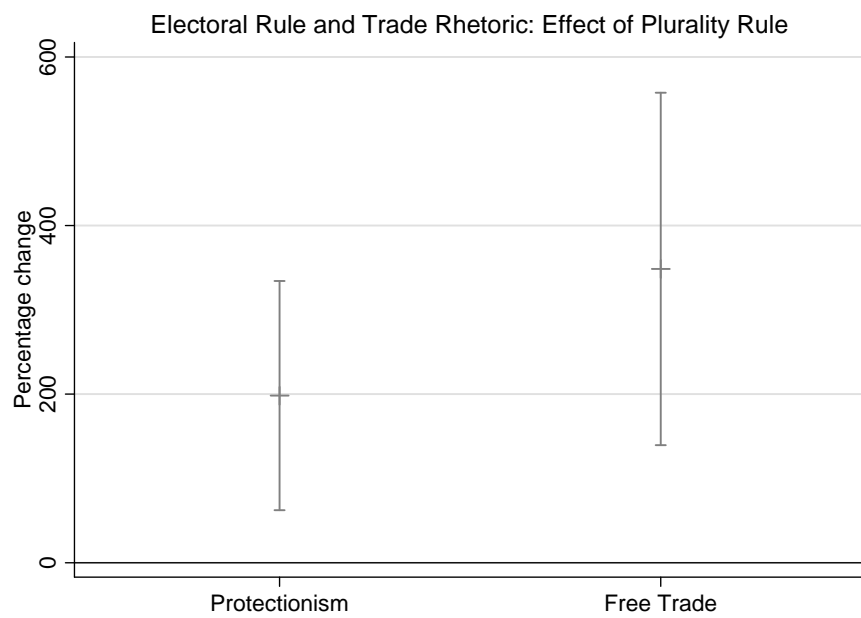


Figure 2.A.2.: Marginal effects of plurality rule on references to protectionism (left bar) and free trade (right bar). 95 per cent confidence intervals based on Delta Method. GLM, logit link.

Table 2.A.4. provides a number of robustness checks for the association between plurality rule and support for free trade. First, the higher number of references in favor of free trade may be reflecting a more contentious political climate with respect to economic policies more generally, not support for exporters explicitly. Thus, column 1 additionally controls for the total dispersion in the number of references to economic issues across parties in a country. Second, party size, which reasonably is correlated with the electoral system, may be an important confounder: larger parties, and in particular ‘catch-all parties’, may need to appeal to a larger number of segments of the population and thereby provide fewer references to any specific topic. At the same time, plurality rule should be associated with fewer, more centrist parties. As column 2 shows, larger parties (measured by the percentage vote share) tend to make more references in favor of free trade, but the result remains that plurality rule is associated with more references in favor of free trade as well. Third, while the standard errors were clustered on countries in order to take into account serial correlation, the strong correlation of the dependent variable over time may warrant a lagged dependent variable. Column 3 therefore presents the results from non-linear least squares, where the lagged dependent variable enters additively the logistic function that ‘wraps’ the other covariates. That is, column 3 reports the coefficient estimates and p -values from estimating

$$y_{i,t} = y_{i,t-1} + \frac{\exp(x'_{i,t}\beta)}{1 + \exp(x'_{i,t}\beta)} + \epsilon_{i,t}, \quad (2.3)$$

with non-linear least squares, where i indicates the country, t is time, x' is a vector containing the variable on the electoral rule and the two control variables, y is the dependent variable, and ϵ is a residual. As column 3 shows, the coefficient on the lagged dependent variable is indeed positive and statistically significant, underscoring the temporal dependence in the data.

Column 4 reports non-linear least squares estimates when using the ‘fixed-b asymptotics’ for obtaining test statistics robust to serial correlation in the data (Bunzel, Kiefer and Vogelsang, 2001). To obtain the test statistics and p -values, moment conditions similar to HAC estimators familiar from time-series cross-section models are used; similar to the Driscoll-Kraay estimates reported above, I construct these as the HAC estimator of the cross-sectional average of the moment conditions and then construct test statistics as described in Bunzel, Kiefer and Vogelsang (2001). While Bunzel, Kiefer and Vogelsang (2001) only derive the asymptotic distribution of their test statistic for the case of pure time series, based on a limited number of simulations I have conducted, applying their procedure to cross-sectional averages appears to perform well even in relatively small data sets. That being said, I leave a more extensive treatment for future work.

Finally, column 5 reports the estimates when disaggregating the data by relying on party-election level. I include two additional control variables relative to the main model, the party size (since now the dependent variable is no longer weighted by party size) and references by other parties running the same election to protectionist trade policies, in order to ensure that more references in favor of free trade are not simply an electorally driven response to more support for protectionist trade policies by other parties (which, according to the standard account, should be more attractive under plurality rule). Ideally, this would be constructed as a spatial lag to explicitly model the interdependence in the data (Franzese and Hays, 2007), but the non-linear structure of the model makes this difficult; I would like to mark this as a potentially important future extension, especially since, to my knowledge, spatial models have not been applied to model this kind of data.

Table 2.A.4.: Manifesto Data: References to Free Trade

	(1)	(2)	(3)	(4)	(5)
PLURALITY	1.09*** (.000)	.935*** (.000)	1.56** (.014)	1.46*** –	.638** (.015)
GDP	-.071 (.183)	-.098* (.065)	-.098 (.371)	-.005 –	-.133** (.013)
GDP PER CAPITA	-.038 (.957)	.119 (.866)	.015 (.438)	-.009 –	.008 (.313)
ISSUE POLARIZATION	.857 (.503)				
AVG PARTY SIZE		2.62*** (.001)			
PARTY COMPETITION					.134 (.019)
PARTY SIZE					.016*** (.000)
LAGGED DV			.704*** (.000)		
CONSTANT	-5.32*** (.000)	-4.97*** (.000)	-7.14*** (.000)	-6.03* –	-3.31** (.012)
Number Obs.	341	341	315	315	2196

Coefficient Estimates and p -values. *** significant at 1%, ** significant at 5%, * significant at 10%. Columns (1)-(2): GLM, logit link. Column (3): Non-linear least squares. (4): Non-linear least squares, Bunzel, Kiefer and Vogelsang (2001) fixed-b asymptotics (p -values omitted). Column (5): GLM, logit link. Standard errors clustered (by countries) for columns (1)-(3), clustered by party for column (5).

II.A.2 Formal model

This appendix provides a formal model to illustrate how, under reciprocal trade negotiations, an increase in the reliance on narrow interest groups has an ambiguous effect on tariff levels. The model builds on a probabilistic voting model with three sets of actors – individual voters, organized lobbies, and a government (see in particular chapter 7.5 in Persson and Tabellini 2002) – and introduces the distinction between import-competing and exporting groups to discuss the role of reciprocal trade policy; the model also has some parallels to the model in Grossman and Helpman (1994) and hence does not stray away too far from the seminal literature, but it departs in two ways. First, it incorporates an electorally motivated government which has to trade off consumer interests with those of narrow interest groups. Second, it incorporates the trade off between import-competing interests, which prefer higher tariffs on their own products, and exporters, which due to reciprocity prefer lower tariffs on domestic products. I first describe the model and its equilibrium under unilateral policy-making, deriving the standard result: an increase in the reliance on narrow interest groups increases average tariff rates. I then turn to trade policy under reciprocity.

II.A.2.1 Unilateral trade policy

The model contains three sets of actors: a government, which can set a vector of trade policies, t_g ; individual voters, each of whom belongs to one of J groups, and who evaluate the vector t_g relative to the status quo, t_0 ; and organized lobbies which may represent the interest of voters in a group. An arbitrary group is denoted by $j \in \mathcal{J}$, and \mathcal{J} is the set of all groups in the electorate. The game proceeds as follows. First, the government, g , proposes a vector of trade policies to maximize its probability of winning an election. Second, organized groups evaluate the proposed policy vector relative to the status quo and decide whether to provide political

support for or against the government. Third, given the proposed policy vector, the groups' contributions, and the status quo, voters in the electorate decide whether to vote for or against the government.

I assume that all groups are of equal size and normalize the size of the electorate to one, such that each group is of size $\frac{1}{J}$. Goods are produced either by import-competers or by exporters, such that \mathcal{J} comprises two mutually exclusive sets of groups: the set of exporters, \mathcal{E} , and the set of import-competers, \mathcal{I} . All members of group j are associated with the production of some good, also denoted by j , and consume a basket of all goods that are produced by import-competers. A subset of groups, denoted by \mathcal{L} , is represented by organized interest groups, which can make contributions. Total contributions in favor of the government are denoted by $C_g = \sum_{j \in \mathcal{L}} C_{j,g}$, while contributions against the government are denoted by $C_o = \sum_{j \in \mathcal{L}} C_{j,o}$. Contributions are required to be non-negative.

The trade policy vector set by the government determines a specific price for each good produced by an import-competer, and therefore for all goods in \mathcal{I} ; the government's proposed tariff on good j is denoted by $t_g(j)$. Each group benefits from a higher price on the good it produces, but also loses utility from an increase in the price of all other goods. Specifically, the utility of individual i in group j derived from the trade policy vector is determined by

$$W_{ij}(t_g) = W_j(t_g) = H_j(t_g) - \frac{1}{I} \sum_{j \in \mathcal{I}} t_g^2(j), \quad (2.4)$$

where for individuals in import-competing groups, $j \in \mathcal{I}$,

$$\frac{\partial H_j(t_g)}{\partial t_g(j)} > 0, \quad \frac{\partial^2 H_j(t_g)}{\partial t_g(j)^2} < 0, \quad \text{and} \quad \frac{\partial H_j(t_g)}{\partial t_g(-j)} = 0, \quad (2.5)$$

such that $H_j(t_g) = H_j(t_g(j))$ is increasing and concave in the group's own tariff and the tariffs set on the goods produced by other groups do not enter $H_j(t_g)$.

Additionally, assume that $H_j(0) = 0$ and $\lim_{t_g(j) \rightarrow 0} \frac{\partial H_j(t_g)}{\partial t_g(j)} = \infty$, which are aspects of the common Inada conditions and imply that group j receives no utility if tariffs are at zero, that the utility is increasing sharply at very low tariff levels, but that the benefits of an additional increase in tariffs decline as tariffs increase. H_j here can be interpreted as the economic well-being of the firm or industry to which a voter is linked directly, such as through employment, or indirectly, such as through ownership of assets whose value is associated with the fortunes of firm or industry j (Scheve and Slaughter, 2001). Group j 's utility further decreases in the tariffs set on all goods at an increasing rate, as implied by the term $\tau_g = \frac{1}{I} \sum_{j \in \mathcal{I}} t_g^2(j)$. As in Grossman and Helpman (1994), therefore, each individual in group j benefits from an increase in the price of its own good, and is harmed by an increase in the price of all other goods.²⁴

Because tariffs neither increase nor decrease the utility of exporters (aside from the higher prices on goods not produced by them), for $j \in \mathcal{E}$ it follows that $\frac{\partial H_j(t_g)}{\partial t_g(m)} = 0 \quad \forall m \in \mathcal{I}$ such that individuals associated with exporters don't gain from tariffs and only lose from the higher prices implied by tariffs on goods they consume.

In addition to the utility derived from economic policies described in equation (2.4), the utility of individuals has a component that determines how much individuals value the current government. This component may reflect ideological attachment to the current government, it could reflect how much individuals value other policies proposed by the government that are unrelated to trade policies, or it could reflect uncertainty on part of the government about the specific preferences

²⁴In order to focus the discussion on the political incentives, the model abstracts from many economic characteristics on which goods may differ, such as differences in import elasticities, which in Grossman and Helpman (1994) also play a role for equilibrium tariffs. Introducing such differences across goods and groups would be quite straightforward and not change the main conclusions, but add unnecessary notation for the present purposes.

of voters. Voter i in group j votes for the current government if and only if

$$W_j(t_g) + \sigma_{ij} + \delta > W_j(t_o),^{25} \quad (2.6)$$

where σ_{ij} and δ are both random variables reflecting the additional voter utility in favor of the current government. σ_{ij} is distributed uniformly, such that

$$\sigma_{ij} \sim \left[-\frac{1}{2\phi_j}, \frac{1}{2\phi_j} \right], \quad (2.7)$$

and let $\phi = \frac{1}{J} \sum_j \phi_j$ be the average density; to simplify the model, let $\phi = \phi_j$ in the following. δ is an aggregate shock to voter utility that is not group-specific and can be written as $\delta = \tilde{\delta} + h(C_g - C_o)$. The term $\tilde{\delta}$ is distributed uniformly as well, such that

$$\tilde{\delta} \sim \left[-\frac{1}{2\psi}, \frac{1}{2\psi} \right]. \quad (2.8)$$

Through the term $h(C_g - C_o)$, campaign contributions by organized groups can affect voter utility and thereby election outcomes. These campaign contributions could reflect lobbying expenditures, advertisement campaigns, and other forms of political support in favor of or against the current government. The term h reflects the sensitivity of the electorate to such campaigns and expenditures, with larger values corresponding to higher sensitivity.

To solve for the subgame perfect Nash equilibrium of the game by backwards induction, consider first the voters' decision. From equation (2.6), it follows that a voter i in group j is indifferent between voting for and against the current government if

$$\sigma_{ij} = W_j(t_o) - W_j(t_g) - \tilde{\delta} - h(C_g - C_o) \equiv \sigma_j, \quad (2.9)$$

and all voters with $\sigma_{ij} \geq \sigma_j$ vote in favor of the current government, such that σ_j is

²⁵Equivalently, utility of voter i in group j could be written as $w_{ij}(t) = W_j(t) + (\sigma_{ij} + \delta)I_g$, where I_g is an indicator assuming the value one if the current government stays in office and zero otherwise.

the swing voter in group j . An increase in total spending in favor of the current government, C_g , pushes down this threshold, such that more voters vote for the current government; the size of this effect increases (in absolute value) in h .

From the distribution of σ_{ij} in equation (2.7), it follows that the share of voters in group j that vote in favor of the government is

$$\pi_{j,g} = \frac{1}{2} - \phi_j \left[W_j(t_o) - W_j(t_g) - \tilde{\delta} - h(C_g - C_o) \right], \quad (2.10)$$

such that the total vote share of the government is

$$\pi_g = \frac{1}{J} \sum_{j \in \mathcal{J}} \left\{ \frac{1}{2} - \phi_j \sigma_j \right\} = \frac{1}{2} - \frac{1}{J} \sum_{j \in \mathcal{J}} \phi_j \sigma_j. \quad (2.11)$$

The government wins the election with probability $p_g = \Pr\left(\pi_g \geq \frac{1}{2}\right)$, which, using equations (2.10) and (2.11), yields

$$p_g = \frac{1}{2} + \frac{\psi}{J} \sum_{j \in \mathcal{J}} \left[W_j(t_g) - W_j(t_o) \right] + \psi h(C_g - C_o). \quad (2.12)$$

Thus, the government is more likely to win the election as the proposed trade policies increase, on average, in value for the j groups compared the status quo, and as the contributions in favor of the government increase.

A subset \mathcal{L} of the groups is represented by organized lobbies that can make contributions, $C_{j,g}$ if in favor of the government or $C_{j,o}$ if in favor of the opposition; as in Grossman and Helpman (1994), whether groups are organized is determined outside the model. These organized lobbies could represent, for instance, industry associations that can take political action on behalf of their members. Because they are only concerned with the effects of trade policies on the firm's or industry's welfare, these lobbies derive utility from the effects of tariffs on the economic welfare of their group's members in terms of H_j ; however, lobbies do not take into

account the effects of tariff policies on the prices of other goods. On the one hand, this assumption reflects that lobbies rarely engage in political action to drive down prices of consumption goods. On the other hand, this assumption rules out that lobbies engage in lobbying for intermediate goods that are imported. The following does not depend on this assumption, but it allows focusing the discussion on the effects of reciprocal trade negotiations on trade policies (as opposed to the influence of imported inputs and intermediate goods). Thus, if group j is represented by an organized lobby, the lobby chooses the size of its contributions in favor of or against the current government in order to maximize

$$U_j = p_g H_j(t_g) + (1 - p_g) H_j(t_o) - \frac{(C_{j,g} + C_{o,g})^2}{2}, \quad (2.13)$$

such that the utility of lobbies decreases in contributions at an increasing rate; contributions are constrained to be non-negative.

It follows that lobbies provide contributions

$$\begin{aligned} C_{j,g} &= \max \left\{ 0, \frac{\psi h}{J} [H_j(t_g) - H_j(t_o)] \right\}, \\ C_{j,o} &= -\min \left\{ 0, \frac{\psi h}{J} [H_j(t_g) - H_j(t_o)] \right\}, \end{aligned} \quad (2.14)$$

such that lobby j makes contributions in favor of the government if the trade policy set on good j is better for the lobby than the status quo, and the lobby makes contributions against the government if the trade policy set on good j is worse for the lobby than the status quo. Thus, a lobby makes contributions either for or against the government, but it never makes both kinds of contributions. If the two policies are identical, in equilibrium the lobby makes no contributions at all, where policies only need to be identical with respect to good j ; the proposed government policy and the status quo may still differ with respect to other goods.

Equation (2.14) implies that only organized import-competing groups make any contributions under unilateral policy-making. Exporters do not lobby, even if they are represented by organized groups. The reason is that under unilateral policy-making, a government cannot affect the welfare of exporters through domestic tariff rates aside from the effect on prices on other goods: for all $j \in \mathcal{E}$, $H_j(t_g)$ is not affected by changes in t_g . While the government may still use export subsidies, for instance, doing so is unrelated to domestic tariff rates. This underscores how the assumption of unilateral policy-making justifies the focus on protectionist interest groups at the expense of exporters in most of the existing literature.

Equation (2.14) further implies that lobbies make contributions that reflect the marginal benefit from the proposed trade policy to their welfare, where the marginal benefit is defined as the difference between the utility derived from the proposed policy and the status quo. This is not dissimilar from the restriction to equilibria with truthful contribution schedules in Grossman and Helpman (1994); however, in the present game, such truthful contributions arise directly from the groups' equilibrium policies and are not the result of a restriction to the game. Finally, note that lobbies do not have to make contingent promises in this game; nor do they have to overcome a commitment problem. Because the lobbies have a direct interest in either obtaining the government's proposal or defeating it, and because contributions affect the electorate's choice, lobbies have an incentive to make contributions in equilibrium, despite moving after the government.

From equation (2.14), it also follows that aggregate, net contributions in favor of the current government are

$$C_g - C_o = \frac{\psi h}{J^2} \sum_{j \in \mathcal{L} \cap \mathcal{I}} [H_j(t_g) - H_j(t_o)]. \quad (2.15)$$

The government maximizes the probability of winning the election by proposing

t_g , taking into account the contributions by organized groups that this trade policy vector elicits and its effect on the electorate's voting decision. Substituting equations (2.15) and (2.4) into the government's probability of winning yields

$$p_g = \frac{1}{2} + \frac{\psi}{J} \left\{ \sum_{j \in \mathcal{J}} [(H_j(t_g) - \tau_g) - (H_j(t_o) - \tau_o)] + \alpha \sum_{j \in \mathcal{L} \cap \mathcal{I}} [H_j(t_g) - H_j(t_o)] \right\}, \quad (2.16)$$

where $\tau_g = \frac{1}{I} \sum_{j \in \mathcal{I}} t_g^2(j)$ and $\alpha = \frac{\psi h^2}{J}$. As pointed out in Persson and Tabellini (2002), α in this model is similar to the weight on social welfare versus contributions in Grossman and Helpman (1994), as it implies an additional weight on the welfare of organized groups relative to unorganized groups, which in this model is due to the effect of contributions on election outcomes.²⁶ This parameter, in turn, has been linked to the supply of protectionist trade policies under different electoral systems (see, e.g., Nielson 2003): a larger dependence on contributions creates a larger incentive for governments and policy-makers to rely on organized interest groups, and therefore more influence of narrow interests. The main body of the text suggests a number of reasons why plurality systems plausibly create a larger dependence on organized interest groups, such that plurality systems should be associated with larger values of α than proportional representation systems. However, which specific institutions are thought to be associated with more support for narrow interest groups is inconsequential for the main result in the following: under reciprocity, narrow interest institutions – however defined – have an ambiguous effect on average tariff levels, but increase the dispersion in tariff rates.

²⁶In the original model of Grossman and Helpman (1994), α has the opposite interpretation, as it reflects the government's weight on social welfare relative to contributions.

Maximization of equation (2.16) with respect to t_g yields as first-order conditions

$$\frac{\partial H_j(t_g)}{\partial t_g(j)} = 2\rho^{-1}t_g(j) \quad \text{for } j \notin \mathcal{L}, \quad (2.17)$$

$$\frac{\partial H_j(t_g)}{\partial t_g(j)} = 2[\rho(1 + \alpha)]^{-1}t_g(j) \quad \text{for } j \in \mathcal{L}, \quad (2.18)$$

which implicitly define the equilibrium tariff rates for all $j \in \mathcal{I}$ and where $\rho = \frac{I}{J}$ is the share of import-competers among all groups. Because $\lim_{t_g(j) \rightarrow 0} \frac{\partial H_j(t_g)}{\partial t_g(j)} = \infty$ and $H_j(t_g)$ is strictly increasing in $t_g(j)$ and concave, it follows that for each group j , a tariff rate satisfying the equilibrium conditions exists and, moreover, is unique; it is determined by the point at which the right-hand side in equation (2.17) and (2.18), respectively, equals the slope of $H_j(t_g)$, or, equivalently, the derivative of $H_j(t_g)$ with respect to $t_g(j)$.

The equilibrium tariff rates determined by equations (2.17) and (2.18) have a number of properties. First, the equilibrium tariff rate for groups represented by organized lobbies is always higher than the equilibrium tariff rate for unrepresented groups. To see this, note that the right-hand side of equation (2.18) is always strictly smaller than the right-hand side of equation (2.17), because $(1 + \alpha) > 1$. It follows that the slope of H_j at the equilibrium tariff rate must be flatter for organized groups than for unorganized ones; because H_j is concave, this implies that the equilibrium tariff rate must be larger for organized groups than for unorganized ones. Second, the equilibrium tariff rate for groups represented by organized lobbies increases in α . The intuition is the same: as α increases, the right-hand side of equation (2.18) becomes smaller, such that the slope of H_j must be flatter, which implies a higher equilibrium tariff rate.

Figure 2.A.3. illustrates these points (the implicit function theorem provides an analytic alternative to the geometric interpretation). The downward sloping curve represents the left-hand side of the equilibrium conditions, the first derivative of

H_j , as a function of the tariff rate; while the chosen shape is arbitrary, the graph will be positive across all values of t_g and be sloping downwards. The straight, upwards sloping lines represent the right-hand side of the equilibrium conditions. The top line represents the line for an unorganized interest group; the middle line for an organized interest group where $\alpha = .25$; and the bottom line, which has the flattest slope, is for an organized interest group where $\alpha = .75$. Again, while the specific slope of these lines is chosen arbitrarily, the equilibrium conditions in equations (2.17) and (2.18) ensure that the slope is flatter for organized groups than for unorganized ones and that the slope decreases in α . The intersections of the lines with the downward sloping curve determine the equilibrium tariff levels for the three groups, denoted by t_1 (for unorganized groups), t_2 (for organized groups when $\alpha = .25$), and t_3 (for organized groups when $\alpha = .75$); as the graph shows, because the intersection is further to the right for organized groups and for higher values of α , the equilibrium tariff level is higher for organized than for unorganized groups, and it further increases in α , such that $t_1 < t_2 < t_3$.

With respect to electoral institutions, because the tariff rate strictly increases in α for $j \in \mathcal{L}$ and is unaffected by changes in α for $j \notin \mathcal{L}$, it follows that the average equilibrium tariff rate strictly increases in α . Thus, and as expected from standard accounts of trade politics, a higher influence for narrow interest groups results in higher average tariff rates under unilateral policy-making.

Finally, note that the equilibrium tariff rates in this model do not result in free trade, even in the absence of organized lobbies that attempt to influence trade policies. The reason is that protectionist trade policies benefit voters, such that modest tariffs are the optimal policy. However, the presence of organized groups increases tariffs to a level that is no longer optimal from the view of aggregate welfare, and as the influence of narrow interest groups increases, the distortion becomes larger, as reflected in higher average tariff rates.

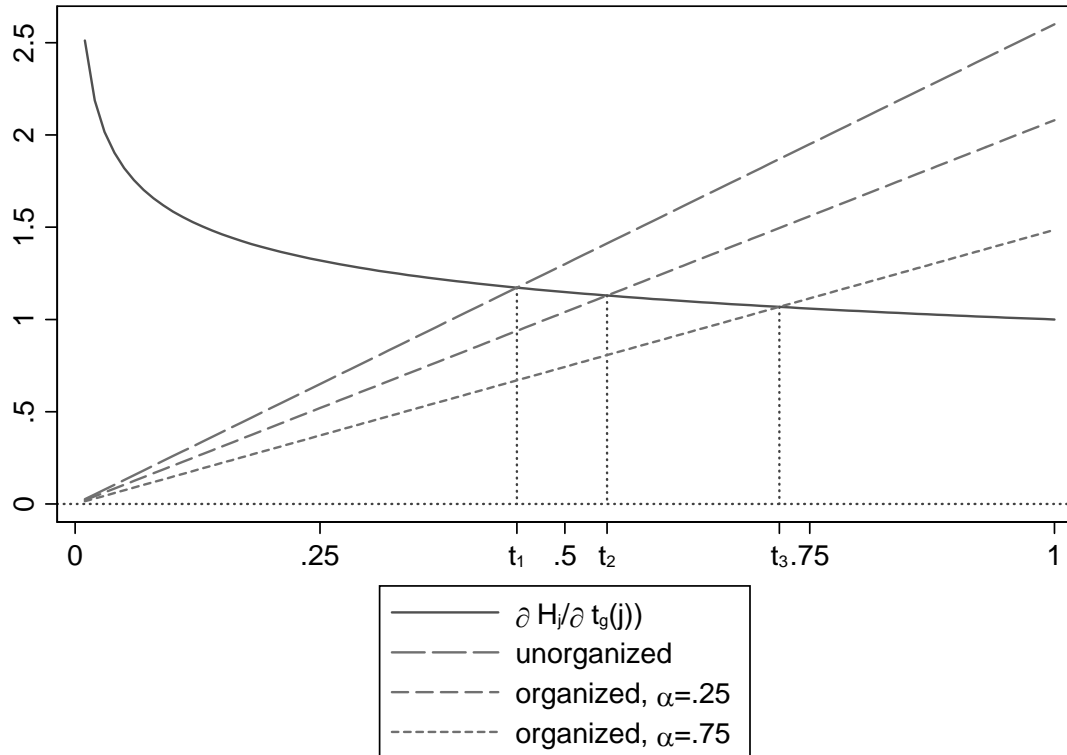


Figure 2.A.3.: Illustration of equilibrium tariff policies, defined in equations (2.17) and (2.18), for unorganized and organized interest groups, for two values of α , .25 and .75. The equilibrium tariffs are determined by the intersection of the downward sloping curve and the respective upward sloping line, as indicated by t_1 , t_2 , and t_3 on the horizontal axis. The equilibrium tariff is higher for organized groups than for unorganized groups and increases in α .

II.A.2.2 Reciprocal trade policy

If tariffs are determined in a reciprocal trade agreement, the utility of voters and groups associated with import-competers remains unchanged. However, the utility functions change for those associated with exporters. Let j be an arbitrary group in the set of exporters; j may be represented by an organized lobby, but need not be. Suppose that in a reciprocal trade agreement, the foreign country is willing to lower its own tariffs on good j if the home country of j is willing to lower its domestic tariffs on good $j' \neq j$. Thus, the two governments can exchange concessions through intersectoral reciprocity; as is standard in the negotiations, the concessions are, roughly, reciprocated in value: larger concessions on the home tariff on j' result in larger concessions on the foreign tariff on j . For group $j \in \mathcal{E}$, $H_j(t_g) = H_j(t_g(j'))$, where

$$\begin{aligned}
 H_j(t_g(j')) &> H_j(t_o(j')) && \text{if } t_g(j') < t_o(j'), \\
 \frac{\partial H_j(t_g)}{\partial t_g(j')} < 0, \quad \frac{\partial^2 H_j(t_g)}{\partial t_g(j')^2} < 0, && \text{if } t_g(j') < t_o(j'), \\
 H_j(t_g(j')) &= H_j(t_o(j')) && \text{if } t_g(j') \geq t_o(j'), \\
 \frac{\partial H_j(t_g)}{\partial t_g(j')} &= 0 && \text{if } t_g(j') \geq t_o(j').
 \end{aligned} \tag{2.19}$$

Thus, as long as the government's proposed tariff on good j' is below the status quo, members of group j benefit from a decrease in the tariff; if the tariff on good j' is equal to the status quo or larger, the direct economic utility of group j is unaffected by the tariff (the group members still suffer from the higher price on good j'). These assumptions reflect that the two governments are engaging in the possibility of reciprocal trade liberalization, but not in reciprocal protectionism or even retaliation (in which case the partial derivative in equation (2.19) would be negative at all levels of $t_g(j')$) – that is, an increase in the domestic tariff on good j ,

compared to the status quo, is not reciprocated with an increase in the foreign tariff on good j' . While the following results do not depend on ruling out such retaliatory trade policy, the conditions in (2.19) allow isolating the effect of reciprocal trade liberalization on trade policies.

Voters follow the same voting rule as before, and lobbies follow the same contribution rule as described in equations (2.14), such that

$$\begin{aligned} C_{j,g} &= \max \left\{ 0, \frac{\psi h}{J} [H_j(t_g) - H_j(t_o)] \right\}, \\ C_{j,o} &= -\min \left\{ 0, \frac{\psi h}{J} [H_j(t_g) - H_j(t_o)] \right\}. \end{aligned} \quad (2.20)$$

However, the identity of contributing groups now changes. Under unilateral policy-making, only import-competing lobbies contributed in equilibrium. Groups associated with exporters never made positive contributions for or against the government. In reciprocal negotiations, exporters may make positive contributions in equilibrium. If exporters make any contributions, these are always in favor of the current government, but never against it: If the government were to increase the price on good j' beyond the status quo, the utility of the lobby representing exporter j would not be affected by this policy, and its equilibrium contributions therefore would be zero. Moreover, note that either group j or group j' may make contributions in favor of the government, but never both: if the proposed tariff is higher than the status quo, such that $t_g(j') > t_o(j')$, only the import-competing group, j' , will make a contribution; if the proposed tariff is below the status quo, such that $t_g(j') < t_o(j')$, the exporting group, j , will make a contribution in favor of the government, while the import-competing group, j' , will make a contribution against the government. Thus, a government benefits from lowering tariff rates by attracting contributions from exporters and by increasing the welfare of all consumers, but the government also invites contributions that are directed against

it from lobbies representing the affected import-competing group. Finally, note that the situation of import-competers that are not faced with demands for reciprocal trade liberalization and of exporters without an opportunity for making reciprocal demands does not change compared to unilateral policy-making.

That exporters potentially join import-competing groups in making contributions is reflected in aggregate net contributions, which now are given by

$$C_g - C_o = \frac{\psi h}{J^2} \sum_{j \in \mathcal{L} \cap \mathcal{I}} [H_j(t_g) - H_j(t_o)] + \frac{\psi h}{J^2} \sum_{j \in \mathcal{X}} [H_j(t_g) - H_j(t_o)], \quad (2.21)$$

where \mathcal{X} is the set of exporters making positive contributions in equilibrium (that is, all exporters who receive lower foreign tariffs in exchange for domestic concessions). Which exporters are in this group is determined by the government's equilibrium policy vector, which is derived in the following.

For determining the equilibrium trade policy vector, first note that for goods where no reciprocal liberalization is offered, the government's equilibrium policies remain the same as in the unilateral case. Let $\mathcal{R} \subseteq \mathcal{I}$ be the set of goods produced by import-competers on which the foreign government requests reciprocal trade liberalization, offering to lower its own tariff on some good exported by the home country in turn, while $\mathcal{N} \subseteq \mathcal{I}$, with $\mathcal{R} \cup \mathcal{N} = \mathcal{I}$ and $\mathcal{R} \cap \mathcal{N} = \emptyset$, is the set of goods on which no reciprocal liberalization is offered. Then, for $j \in \mathcal{N}$ the equilibrium tariffs determined in equations (2.17) and (2.18) remain, such that

$$\frac{\partial H_j(t_g)}{\partial t_g(j)} = 2\rho^{-1} t_g(j) \quad \text{for } j \in (\mathcal{L}^- \cap \mathcal{N}), \quad (2.22)$$

$$\frac{\partial H_j(t_g)}{\partial t_g(j)} = 2[\rho(1 + \alpha)]^{-1} t_g(j) \quad \text{for } j \in (\mathcal{L} \cap \mathcal{N}), \quad (2.23)$$

Thus, for any goods that are unaffected by reciprocal trade liberalization, the same conclusions as in the unilateral case follow. In particular, tariffs are

higher for groups represented by organized lobbies than for groups represented by unorganized lobbies, and among the former, tariffs increase in the influence of narrow interest groups. For $j \in \mathcal{R}$, the government faces two decisions: Whether to liberalize tariffs on j in exchange for trade liberalization by the foreign government on some $j' \neq j$; and, depending on the first decision, at what level to set the equilibrium tariffs.

Let $t_l(j)$ denote the equilibrium tariff on $j \in \mathcal{R}$ if the government decides to lower the tariff rate below the status quo in exchange for concessions on good j' , and let $t_p(j)$ denote the tariff rate on $j \in \mathcal{R}$ if the government does not lower the tariff rate below the status quo; equilibrium expressions for these tariff rates are derived further below, in equations (2.25) through (2.30). For good j , the government implements the lower tariff rate over the higher tariff rate if and only if

$$\rho^{-1} \left[t_p^2(j) - t_l^2(j) \right] + (1 + D_j \alpha) \left[H_{j'}(t_l(j)) - H_{j'}(t_p(j)) \right] \geq (1 + D_j \alpha) \left[H_j(t_p(j)) - H_j(t_l(j)) \right], \quad (2.24)$$

where D_j is an indicator variable equal to one if group j is represented by an organized lobby and equal to zero otherwise.

To find expressions for the equilibrium tariff rates $t_l(j)$ and $t_p(j)$, suppose the government does not lower the tariff on good $j \in \mathcal{R}$, as determined by condition (2.24). In this case, the presence of exporters does not affect the government's tariff decision, and the main difference for the government is whether the import-competing group j is represented by an organized lobby or not. This yields the same equilibrium tariffs as under unilateral policy-making, such that

$$\frac{\partial H_j(t_g)}{\partial t_g(j)} = 2\rho^{-1} t_g(j) \quad \text{for } j \notin \mathcal{L}, \quad (2.25)$$

$$\frac{\partial H_j(t_g)}{\partial t_g(j)} = 2[\rho(1 + \alpha)]^{-1} t_g(j) \quad \text{for } j \in \mathcal{L}. \quad (2.26)$$

Now, suppose the government lowers the tariff on good $j \in \mathcal{R}$ in exchange for concessions on j' . Then, the equilibrium tariff rate depends on whether j and j' are represented by organized lobbies. The tariff rates can be derived from the first-order conditions to the government's objective function and are defined by²⁷

$$\frac{\partial H_j(t_g)}{\partial t_g(j)} = 2\rho^{-1}t_g(j) - \frac{\partial H_{j'}(t_g)}{\partial t_g(j)} \quad \text{for } j \notin \mathcal{L} \wedge j' \notin \mathcal{L}, \quad (2.27)$$

$$\frac{\partial H_j(t_g)}{\partial t_g(j)} = 2\rho^{-1}t_g(j) - (1 + \alpha)\frac{\partial H_{j'}(t_g)}{\partial t_g(j)} \quad \text{for } j \notin \mathcal{L} \wedge j' \in \mathcal{L}, \quad (2.28)$$

$$\frac{\partial H_j(t_g)}{\partial t_g(j)} = 2[\rho(1 + \alpha)]^{-1}t_g(j) - (1 + \alpha)^{-1}\frac{\partial H_{j'}(t_g)}{\partial t_g(j)} \quad \text{for } j \in \mathcal{L} \wedge j' \notin \mathcal{L}, \quad (2.29)$$

$$\frac{\partial H_j(t_g)}{\partial t_g(j)} = 2[\rho(1 + \alpha)]^{-1}t_g(j) - \frac{\partial H_{j'}(t_g)}{\partial t_g(j)} \quad \text{for } j \in \mathcal{L} \wedge j' \in \mathcal{L}. \quad (2.30)$$

These tariff rates, together with the tariff rates in equations (2.25) and (2.26), the government's decision rule in (2.24), and the conditions for the lobbies' contributions and voters' decisions, implicitly determine the subgame perfect Nash equilibrium of the game. Note that the tariff rates defined by equations (2.27)-(2.30) will in general be lower than the tariff rates in (2.25)-(2.26), due to the additional term on the right-hand side that reflects the exporting group's welfare, weighted by the influence of narrow interest groups where exporters are represented by organized lobbies.²⁸

The tariff rate defined implicitly in equation (2.27) does not depend on α , while the tariff rate defined in equation (2.28) decreases in α and the tariff rates defined in equations (2.29) and (2.30) both increase in α , as can be shown by application of the implicit function theorem. However, the net effect of an increase in α on tariff

²⁷That is, provided the following expressions are non-negative; if any of the expressions yields a negative right-hand side, the tariff rate is equal to zero. This condition is omitted from the following equations merely for ease of notation.

²⁸In that sense, the model shows how reciprocity, by changing the incentives for exporters to lobby against specific import-competers, "would affect government's willingness and ability to protect particular sectoral interests but would not affect politicians' weighting of campaign contributions relative to general voter dissatisfaction" (Grossman and Helpman, 1994, p. 834).

rates is not immediately evident from this result alone, because the government's decision on whether to provide lower or higher tariffs than in the status quo, and hence whether to provide the tariffs defined in equations (2.25)-(2.26) or the tariffs defined in equations (2.27)-(2.30), also depends on α , as is clear from condition (2.24).

To show that an increase in the influence of narrow interest groups has an ambiguous effect on average tariff levels, consider the scenario where the import-competer, j , is not represented by an organized lobby, while the exporter, j' , is represented by an organized lobby. Then, condition (2.24) will be easier to satisfy as α increases. To see this, note that the condition is easier to satisfy as α increases if

$$H_{j'}(t_l(j)) + \frac{\partial t_l(j)}{\partial \alpha} \left[(1 + \alpha) \frac{\partial H_{j'}(t_l(j))}{\partial t_l(j)} + \frac{\partial H_j(t_l(j))}{\partial t_l(j)} - 2\rho^{-1} t_l(j) \right] > 0. \quad (2.31)$$

Applying the implicit function theorem to equation (2.28) yields that $\frac{\partial t_l(j)}{\partial \alpha} < 0$; substituting the expression for $\frac{\partial H_j(t_l(j))}{\partial t_l(j)}$ from equation (2.28) yields that the term in brackets is zero, such that the condition is always true, which shows that condition (2.24) is easier to satisfy as α increases. Thus, an increase in α ensures that the condition for trade liberalization on good j is easier to satisfy and, once the condition is met, an increase in α further decreases the equilibrium tariff rate. Thus, the net effect of an increase in α on goods where the import-competer is not represented by an organized lobby, while the exporter is represented by an organized lobby is a decrease in tariff rates. At the same time, for goods on which no reciprocal liberalization is offered by the foreign government, the equilibrium tariff rate strictly increases in α for groups that are represented by organized lobbies. Thus, the overall effect of α on average tariff rates is ambiguous: for some goods, an increase in α implies lower tariff rates, while for other goods an increase in α is associated with higher tariff rates. This result, and the comparison to tariff patterns under unilateral policy-making derived in the previous section, underscores how reciprocal trade

agreements break the relationship between narrow interest institutions and tariff levels, which now becomes ambiguous and, indeed, can become non-monotonic, such that, for instance, average tariff rates first decrease in α and then increase. Finally, because an increase in α creates lower tariff rates on some goods and higher tariff rates on other goods, increases in α are associated with more variation in tariff rates across products as measured, for instance, by the standard deviation. In particular, notice that if an increase in α yields higher tariff rates on some products and lower tariff rates on others, the average tariff rate moves less than some of the individual tariff rates affected by changes in α , thereby contributing to an increase in the variance in tariff rates.

To further illustrate these points, Figure 2.A.4. shows both average tariff rates and the standard deviation in tariff rates when making specific functional form and parameter assumptions for the model. The figure shows that the average tariff rate increases in α at times, but also shows two sharp drops in the average tariff rate - which in this specific example occur whenever α increases sufficiently that the government starts liberalizing a good, instead of providing protection, such that condition (2.24) holds. In contrast to the zig-zag pattern on average tariff rates, the standard deviation in tariff rates is strictly increasing in α , reflecting the incentives to provide higher tariff rates on some goods and lower tariff rates on others.

Illustration equilibrium results

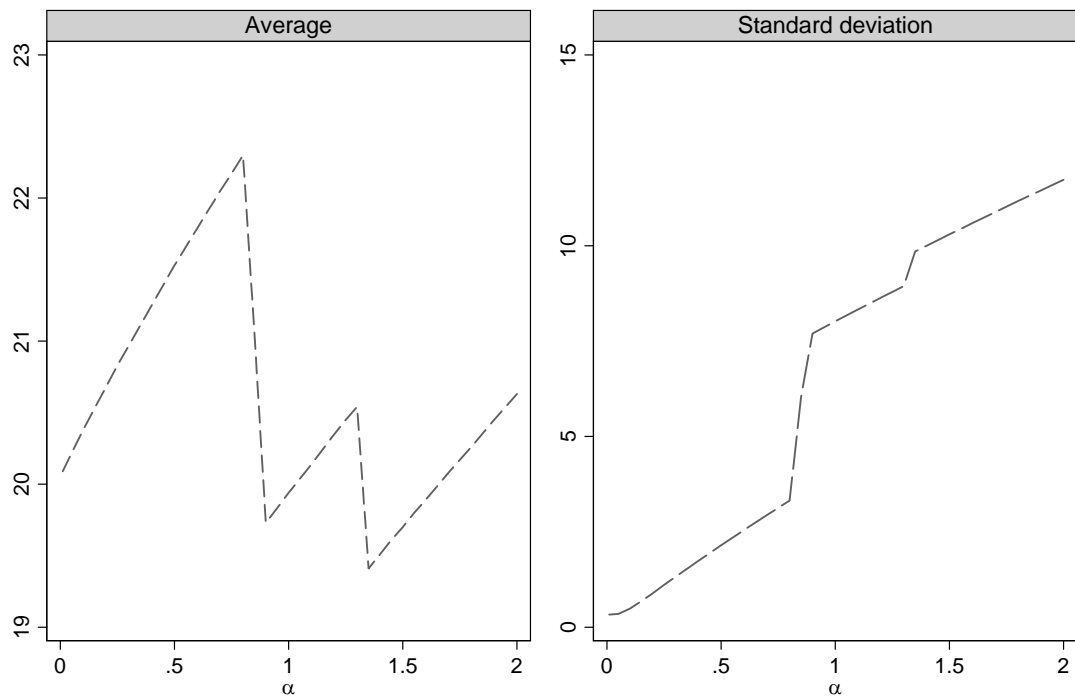


Figure 2.A.4.: Average tariff rate and standard deviation in tariff rates under reciprocal policy-making for various levels of α . Equilibrium tariff levels as described in the text, but under specific functional form and parameter assumptions.

CHAPTER III

Political Rhetoric and Trade

The question of why some governments are more responsive than others to lobbying by interest groups has long occupied political science. Several scholars identified electoral institutions as a key determinant of the extent to which special interest groups can influence policy-makers (Rogowski, 1987; Cox, 1990; Persson and Tabellini, 2002; Rogowski and Kayser, 2002; Park and Jensen, 2007; Persson, Roland and Tabellini, 2007; Rickard, 2008). Trade policies are a prominent application in this regard. In trade politics, according to most accounts, import-competing interest groups lobby their government for protectionist trade policies that redistribute wealth from the broad public. Consequently, institutions that further the influence of interest groups should result in more protectionist trade policies and higher average tariff rates (Nielson, 2003; Grossman and Helpman, 2005; Kono, 2009); conversely, high average tariff rates are viewed as a manifestation of the influence of interest groups.

At least since Rogowski (1987), the standard expectation has been that plurality rule (as opposed to proportional representation), through small electoral districts, a large number of legislators, and weak party discipline, should be associated with higher average tariff rates. However, the literature has produced conflicting evidence on this proposition. While a number of authors report that plurality rule

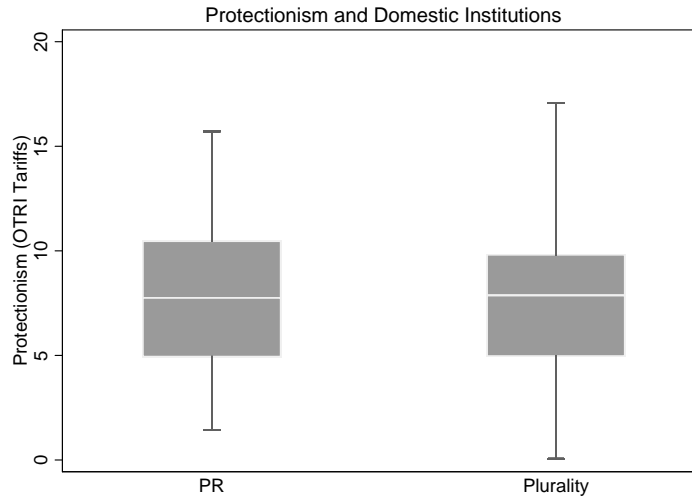


Figure 3.1.: Overall Trade Restrictiveness Index, OTRI (Kee, Nicita and Olarreaga, 2009), for different electoral systems. Graph shows mean, upper and lower quartile, and upper and lower adjacent values. 87 countries, 2009.

is associated with more trade barriers (Rogowski, 1987; Ehrlich, 2007; Evans, 2009), others find the opposite (Mansfield and Busch, 1995; Rogowski and Kayser, 2002; Pinheiro, 2013) or that the association is not due to the mechanisms commonly emphasized (Hatfield and Hauk, 2014). This inconclusive evidence is also visible in the raw data. Figure 3.1. displays the Overall Trade Restrictiveness Index (Kee, Nicita and Olarreaga, 2009) for plurality and proportional representation systems. The index provides an aggregate measure of protection afforded by tariffs. It is the tariff rate that, if applied uniformly to all products, would leave the aggregate level of imports unchanged. Figure 3.1. shows that, in a sample of 87 developed and developing countries, there are virtually no differences between electoral systems in terms of the average level of protectionism.

While these conflicting empirical results may call for a theoretical explanation, it is plausible that the problem lies not with the theory, but with the dependent variable. Average tariff rates have a number of shortcomings for evaluating the influence of special interest groups on trade policies. For instance, it is not

immediately obvious whether a tariff rate of 1,000% on one product is more protectionist than a tariff rate of 100% on ten products (McGillivray, 2004). Moreover, while a tariff rate of 10% may be sufficient to shut out imports on one product, another case may require a much higher tariff rate to obtain effective protection. Aggregating tariff rates across industries blurs such differences. These problems are further confounded when, in order to account for the economic relevance of different sectors, tariff rates are weighted by import shares. If protectionist tariffs are effective in reducing imports, a trade-weighted measure implies a lower weight for this tariff in the composite index, downplaying its protectionist impact. In the extreme case of a prohibitively high tariff, imports are zero and the prohibitively high tariff rate would have the same impact on the composite index as a zero tariff. Finally, governments may reduce tariff barriers but turn to non-tariff barriers for providing protection to select industries. A finding that a certain set of electoral institutions is associated with lower tariff rates may therefore indicate less influence of interest groups and a more open trade regime. Alternatively, it may also indicate that policy-makers operating under these institutions are more motivated to substitute less transparent non-tariff barriers for tariffs and to engage in 'optimal obfuscation' (Magee, Brock and Young, 1989; Kono, 2006). Hence, it is not clear whether the conflicting empirical results reflect a problem with the theory or with the data.

The purpose of this chapter is twofold. First, drawing on data on party statements issued in electoral campaigns, collected by the Comparative Manifesto Project (Volkens et al., 2011), I show that the conflicting empirical results are also evident in other data sources. References to protectionism and free trade in party programs are public statements, and as such are a potentially costly way for parties to signal their support for specific interest groups. If special interest groups are more attractive targets under plurality rule, and special interest groups

are protectionist, we should observe more support for protectionist trade policies in party programs under plurality rule and less support for free trade. Indeed, I show that parties make references to protectionist trade policies more often under plurality rule than under proportional representation, consistent with the literature which argues that plurality rule creates more incentives to cater to protectionist interest groups.

Yet, parties in plurality electoral systems also make more references to free trade policies. These mixed results reinforce the conflicting evidence from the data on tariff rates. Below, I sketch an explanation for these results and emphasize the role of exporters as narrow interest groups, which become relevant when trade policy is set in reciprocal trade agreements (which is covered in more detail in Chapter II as well). The focus on international agreements in modifying the effects of domestic institutions reinforces recent calls to consider more explicitly the “interactions between domestic institutions and international environments” (West and Lee, 2014) when considering the political incentives of policy-makers.

Second, this chapter introduces an empirical model to accommodate the dependent variable, which is a percentage with a substantial fraction of zeros. In scenarios where the dependent variable is a percentage or a ratio, linear regression models can be problematic. Some of the problems are analogous to the use of linear regression models with binary data.¹ A common alternative to modeling proportions that avoids these problems is a maximum likelihood estimator based on the beta distribution (Paolino, 2001; Ferrari and Cribari-Neto, 2004). However, because the beta distribution is confined to the $(0, 1)$ interval, this estimator cannot accommodate dependent variables that are sometimes zero (or, analogously, one).

¹Predicted values of linear regression models can result in (meaningless) negative values, underscoring the poor fit between the model and the data; marginal effects fail to flatten out at the boundaries and therefore do not take into account that, as the bounds of the distribution are approached, large changes are impossible; and residuals tend to be non-normal and heteroskedastic, since the conditional variance changes with the mean, which in turn is a function of covariates.

Such dependent variables are quite common in political science, for instance in the study of legislative success rates, bilateral trade flows (when measured as a ratio of total trade), or policy goals such as water sanitation rates. The estimator presented here therefore combines the beta regression model, which models the proportion, with a logit model, which accounts for the zeros in the data, similarly to zero-inflated negative binomial models that are widely used with count data (see, e.g., Zorn 1998).

The next section specifies the empirical model linking campaign statements to electoral institutions. I demonstrate through simulations the performance of the adjusted beta regression model and discuss the results when applied to the data on campaign statements. The final section concludes.

III.1 Electoral institutions and trade

The literature on the relationship between electoral institutions and trade politics suggests that plurality rule should be associated with more references to protectionist trade policies. Import-competing groups – firms and industries that face competition from abroad – receive large benefits from protectionist measures that reduce or block entry of foreign firms into their home market. As such, these protectionist groups are able to overcome collection action problems and form interest groups to lobby their government for protection. It follows, according to this literature, that institutions furthering the influence of special interest groups create more incentives to appeal to protectionist groups. This association may be reflected in policy outcomes, such as average tariff rates, but it should also be evident in electoral statements directly. Consequently, plurality rule should be associated with more positive references to protectionist measures than proportional representation systems. By contrast, references to free trade, which appeal to the broader public, but not to protectionist interest groups, should be less

attractive to policy-makers operating under plurality rule.

To assess the link between electoral statements and the electoral rule, I draw on data from the Comparative Manifesto Project (Volkens et al., 2011), CMP, which provides data on policy positions of parties, as determined by the parties' election programs. The CMP codes the percentage of quasi-sentences devoted to specific topics. Most relevant for the present purposes are statements in favor of protectionist policies (entry 406) and statements that challenge protectionist policies or support free trade (entry 407). I construct two separate dependent variables. The first variable measures the percentage of references in favor of protectionism, averaging data across parties for each election-year. Parties' positions are weighted by their vote shares in order to give larger weight to parties that are politically more influential and to avoid that the positions of extreme but politically irrelevant parties bias the results. The second variable measures positive references to free trade and is constructed analogously to the previous variable.

For the electoral rule, I use a dummy variable from the Database of Political Institutions (Beck et al., 2001) that distinguishes plurality rule (with value 1) from proportional representation systems (with value 0). For countries that use mixed systems, the variable indicates the electoral system that is used to elect the majority of seats. The main models in the following include two control variables, the economic size of a country as measured by logged gross domestic product (GDP) and the wealth of a country as measured by gross domestic product per capita; both variables have been associated with both the electoral rule and a country's ability and willingness to support free trade policies. These data are obtained from the World Bank's World Development Indicators. The data set contains observations on up to 48 countries from 1975 to 2010.

III.1.1 Adjusted beta regression model

Because the variables on references to free trade and protectionism are coded in percentages, they are constrained to the interval from zero to one. A common way to model such data empirically is the beta regression model proposed by Paolino (2001) and Ferrari and Cribari-Neto (2004). The density of a beta-distributed variable $y \in (0, 1)$, with parameters $p, q > 0$, is given by

$$f(y; p, q) = \frac{\Gamma(p+q)}{\Gamma(p)\Gamma(q)} y^{p-1} (1-y)^{q-1}. \quad (3.1)$$

To arrive at a regression model, Paolino (2001) and Ferrari and Cribari-Neto (2004) suggest to reparametrize the density in equation (3.1) by defining $\mu = \frac{p}{p+q}$ and $\phi = p+q$. Note that $\mu \in (0, 1)$ and $\phi > 0$. Then, the density in equation (3.1) can be written as

$$f(y; \mu, \phi) = \frac{\Gamma(\phi)}{\Gamma(\mu\phi)\Gamma((1-\mu)\phi)} y^{\mu\phi-1} (1-y)^{(1-\mu)\phi-1}, \quad (3.2)$$

such that the expectation and variance are given by

$$E[y] = \mu \quad \text{and} \quad \text{Var}[y] = \frac{\mu(1-\mu)}{1+\phi}. \quad (3.3)$$

To specify a regression model, and just as in logit and probit models, μ can be related to a combination of covariates x and coefficients β through a link function $g(\cdot)$ such that $g(\mu) = x'\beta$, where $g(\cdot)$ is a link function that maps from the unit interval onto the real line, such as the logit function; it follows that $\mu = g^{-1}(x'b\beta)$, where $g^{-1}(\cdot)$ is the logistic function. The likelihood function is then obtained as usual as the joint density of all observations.

Because the beta distribution restricts the dependent variable to the unit interval such that $y \in (0, 1)$, it cannot accommodate a dependent variable that is zero for some observations. These observations would either have to be dropped from the

data set or recoded to assume an arbitrarily small positive value. While neither of these decisions seems well justified on theoretical grounds, they can produce estimates that are drastically different from each other and biased relative to the true parameter values. This is particularly problematic if zero values arise from a different process than positive values on the dependent variable. For instance, in the case of party statements, in elections with a large number of parties running each individual party may be more likely to talk about any given issue, because its competition requires it to take a stance; at the same time, because there is a larger number of issues, each covered issue receives less space in the party platform. Common empirical models such as beta regression and ordinary least squares have to either disregard zero observations and hence could not take into account differences between zero and non-zero observations, or they would have to disregard the bounded nature of the dependent variable.

To accommodate the presence of zeros on the dependent variable, the density can be augmented by a separate process to account for zeros. This process, in turn, may be a function of covariates z with coefficients γ , linked through some function $\eta(\cdot)$. Some or all of the variables in z and x may be identical, but this need not be the case. For the following, let $\eta(\cdot)$ be the logit function, such that a logit model is used to predict whether a zero value occurs and the probability of observing a positive outcome is given by $\eta^{-1}(z'\gamma)$. The density for the regression model then is

$$f^*(y; x, z, \phi, \beta, \gamma) = \begin{cases} 1 - \eta^{-1}(z'\gamma) & \text{if } y = 0, \\ \eta^{-1}(z'\gamma)f(y; x, \beta, \phi) & \text{if } y > 0. \end{cases} \quad (3.4)$$

The log-likelihood function is obtained as the log of the joint density of all

observations $i \in \{1, 2, \dots, N\}$ in the sample, which is

$$\ln \mathcal{L} = \sum_{i=1}^N \ln f^*(y_i; x_i, z_i, \phi, \beta, \gamma) \quad (3.5)$$

$$\begin{aligned} &= \sum_{i=1}^N I[y_i = 0] \ln(1 - \eta^{-1}(z_i' \gamma)) + \sum_{i=1}^N (1 - I[y_i = 0]) \ln(\eta^{-1}(z_i' \gamma)) \\ &\quad + \sum_{i=1}^N (1 - I[y_i = 0]) \ln \left(\frac{\Gamma(\phi) y^{g^{-1}(x_i' \beta) \phi - 1} (1 - y)^{(1 - g^{-1}(x_i' \beta)) \phi - 1}}{\Gamma(g^{-1}(x_i' \beta) \phi) \Gamma((1 - g^{-1}(x_i' \beta)) \phi)} \right). \end{aligned} \quad (3.6)$$

where $I[y_i = 0]$ is equal to one if $y_i = 0$ and zero otherwise, and $g^{-1}(\cdot) = \eta^{-1}(\cdot)$ is the logistic function. The first-order conditions from maximization of the log likelihood function with respect to β, γ , and ϕ yield the maximum likelihood parameter estimates.

The model yields three different marginal effects. The first is the marginal effect of a covariate on the probability of observing a positive response. This is calculated analogously to binary response models. The average marginal effect of covariate z_k on observing a non-zero response is

$$\tau_k^1 = \gamma_k \sum_{i=1}^N \frac{\exp(z_i' \gamma)}{[1 + \exp(z_i' \gamma)]^2}. \quad (3.7)$$

The second is the ‘direct effect’, the marginal effect of a covariate on the response, given that the response is positive. The average marginal effect of covariate x_k is

$$\tau_k^2 = \beta_k \sum_{i=1}^N \frac{\exp(x_i' \beta)}{[1 + \exp(x_i' \beta)]^2}. \quad (3.8)$$

If a covariate appears in both equations, a third potentially relevant effect is the ‘total effect’, which is the marginal effect of a covariate on the expected value of the response, taking into account both the first and the second effect. Suppose x_k appears in both equations, with associated coefficients γ_k and β_k , respectively.

Then, the total effect is

$$\begin{aligned}\tau_k^3 &= \beta_k \sum_{i=1}^N \frac{\exp(x'_i \beta)}{[1 + \exp(x'_i \beta)]^2} \frac{\exp(z'_i \gamma)}{1 + \exp(z'_i \gamma)} \\ &+ \gamma_k \sum_{i=1}^N \frac{\exp(z'_i \gamma)}{[1 + \exp(z'_i \gamma)]^2} \frac{\exp(x'_i \beta)}{1 + \exp(x'_i \beta)}.\end{aligned}\quad (3.9)$$

It follows that, if γ_k and β_k have different signs, the sign of the total effect is not immediately obvious from the regression coefficients alone. Because it is a non-linear function of both covariate values and coefficient estimates, the sign of the total effect is not even obvious from the relative size of γ_k and β_k . Moreover, note that dropping observations that are zero and estimating an unadjusted beta regression model or a linear regression model on this subsample typically yields estimates comparable to τ^2 , the ‘direct effect’, while estimating a linear regression model on the entire data set and ignoring the bounded nature of the dependent variable yields an estimate that should be comparable to τ^3 . As equation (3.9) suggests, the latter approach can be particularly problematic if γ_k and β_k have different signs; at the same time, dropping observations where the dependent variable is zero risks losing information contained in τ_1 .

III.1.2 Monte carlo results

This section assesses the performance of the adjusted beta regression model through a number of Monte Carlo studies. For the Monte Carlo studies, the conditional mean is created as

$$\mu_i = \frac{\exp(\beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + \beta_3 x_{3i})}{1 + \exp(\beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + \beta_3 x_{3i})}, \quad (3.10)$$

where x_{1i} follows a standard normal distribution, x_{2i} is a random draw from a binomial distribution with five trials and a success probability of ten per cent, and

x_{3i} is a random draw from a binomial distribution with a success probability of one half. By construction, μ_i is contained in the interval $(0, 1)$. The dependent variable, y_i , is then created as a random draw from a beta distribution with parameters μ_i and ϕ . To recode the dependent variable to zeros for some of the observations, another variable is created as

$$w_i = \gamma_0 + \gamma_1 x_{1i} + e_i, \quad (3.11)$$

where e_i is drawn from a logistic distribution with mean zero. Then, y_i is recoded as zero whenever $w_i < 0$. I consider two different designs for the Monte Carlo experiments. In both designs, ϕ is set to 30. For design A, I set $(\beta_0, \beta_1, \beta_2, \beta_3) = (-4, 1, 1.5, 0)$ and $(\gamma_0, \gamma_1) = (2, 3)$. For design B, I set $(\beta_0, \beta_1, \beta_2, \beta_3) = (-2, 1, 1, 0)$ and $(\gamma_0, \gamma_1) = (1, -4)$. In the first case, the effect of x_1 from the logit model reinforces the effect from the beta regression model, while in the second case the two effects run counter to each other.

Table 3.1. reports the bias and rejection rates based on Wald tests relative to the true coefficient value, with a nominal size of 5 per cent, for the estimates of γ_1 , β_1 , β_2 , and β_3 for both designs and for varying numbers of observations in the data set, based on 5,000 simulations for each scenario. This yields a 95% confidence interval of $[.044, .056]$ for the rejection rate of a test with nominal size 5%.

Since $\beta_3 = 0$, the rejection rates for β_3 indicate the occurrence of type I errors, such that for rejection rates above .05 statistically significant effects are found at a higher rate than suggested by the nominal size of the test. Note also that x_3 mirrors the variable on the electoral rule used in the manifesto data below, in that it is a binary variable.

Table 3.1. shows that the estimates from the adjusted beta regression model have little bias and good rejection rates, with improvements especially for the estimate of

Table 3.1.: Monte Carlo: Bias and Rejection Rates

Design A	γ_1	β_1	β_2	β_3
100 Obs.	.258 <i>.040</i>	.009 <i>.061</i>	.014 <i>.065</i>	.000 <i>.057</i>
200 Obs.	.107 <i>.048</i>	.004 <i>.056</i>	.006 <i>.062</i>	.001 <i>.055</i>
1000 Obs.	.026 <i>.045</i>	.001 <i>.054</i>	.001 <i>.058</i>	.000 <i>.049</i>
Design B	γ_1	β_1	β_2	β_3
100 Obs.	-.361 <i>.034</i>	.006 <i>.063</i>	.009 <i>.066</i>	-.001 <i>.070</i>
200 Obs.	-.162 <i>.046</i>	.005 <i>.063</i>	.003 <i>.058</i>	-.000 <i>.059</i>
1000 Obs.	-.026 <i>.048</i>	.001 <i>.048</i>	.001 <i>.052</i>	.000 <i>.052</i>

Bias and rejection rates (in italics). 5000 simulations.

γ_1 as the sample size increases. The relatively poor performance of the logit estimate of γ_1 in small samples is not surprising. With a small number of observations only few observations may record a zero on the dependent variable, and it is well known that sparse data can prove problematic in logit models, exacerbating the small sample bias. While not pursued further here, incorporating adjustments, such as the penalized maximum likelihood estimator suggested by Firth (1993), can improve the small-sample performance of the estimator considerably. For instance, with the penalized maximum likelihood estimator in place of the logit estimator, the rejection rate for γ_1 in design A with 100 observations improved to .052, which is well within the 95% confidence interval, while the bias dropped markedly to -.001.

Since coefficient estimates are not directly comparable across estimators, Table 3.2. reports the marginal effects from the adjusted beta regression model for the variable x_1 and provides a comparison to alternative estimators. Table 3.2. reports both τ^2 , defined in equation (3.8), and τ^3 , defined in equation (3.9). The former is

Table 3.2.: Monte Carlo: Average Marginal Effect of x_1

	(1)	(2)	(3)	(4)	(5)	(6)
	$\hat{\tau}^2$	Beta	OLS ⁺	$\hat{\tau}^3$	Beta*	OLS
	<i>$\hat{\tau}^2/\tau^2$</i>	<i>Beta/τ^2</i>	<i>OLS⁺/τ^2</i>	<i>$\hat{\tau}^3/\tau^3$</i>	<i>Beta*/τ^3</i>	<i>OLS/τ^3</i>
Design A	.058	.071	.077	.064	.070	.063
	<i>1.00</i>	<i>1.21</i>	<i>1.33</i>	<i>1.00</i>	<i>1.12</i>	<i>.998</i>
Design B	.143	.108	.097	-.022	-.047	-.022
	<i>1.00</i>	<i>.752</i>	<i>.676</i>	<i>.999</i>	<i>2.16</i>	<i>.999</i>

Average marginal effects and, in italics, ratio of average marginal effect to true marginal effect. (1) $\hat{\tau}^2$: adjusted beta regression model, effect conditional on observing positive response. (2) Beta: beta regression model, omitting observations that are zero. (3) OLS⁺: ordinary least squares, omitting observations that are zero. (4) $\hat{\tau}^3$: adjusted beta regression model, total effect. (5) Beta*: beta regression model, recoding observations that are zero. (6) OLS: ordinary least squares, all observations.

the direct effect, the effect of x_1 on the response conditional on observing a positive response, while the latter is the total effect of x_1 on the response, which takes into account the effects both on the probability of observing a positive response and on the response, conditional on it being positive. τ^2 is compared to the estimate from the unadjusted beta regression model, where observations where the dependent variable is zero are omitted, and to the estimate from ordinary least squares, where again observations where the dependent variable is zero are omitted. τ^3 is compared to the estimate from the unadjusted beta regression model, recoding observations where the dependent variable is zero to an arbitrarily small, positive number,² and to ordinary least squares. The numbers in italics report the ratio of the average marginal effect calculated from the respective estimator to the true marginal effect.³ Ratios above 1 indicate that the estimator produces an upwardly biased marginal effect, while ratios below one indicate a downward bias in the marginal effect.

Table 3.2. shows that the adjusted beta regression model produces essentially

²Specifically, zeros are replaced by the product of one tenth of the observed smallest positive value of the response variable and a variable drawn randomly from the unit interval.

³Because of the non-linear nature of the model, the true marginal effect was simulated based on a data set with 10,000 observations, constructed as described above.

unbiased estimates of the average marginal effect, consistent with the results in Table 3.1., for both the direct effect (column 1) and the total effect (column 4). The adjusted beta regression model also performs notably better than common alternatives, especially when interest is in the direct effect, where the unadjusted beta regression model (column 2) and OLS (column 3) substantially overestimate marginal effects in design A and substantially underestimate marginal effects in design B. In design A, the unadjusted beta regression model overstates marginal effects by 21 per cent and ordinary least squares produces marginal effects that are 33 per cent too large. In design B, the unadjusted beta regression model results in marginal effects that are about three quarter the size of the true marginal effects; ordinary least squares again fares even worse, producing marginal effects of only two thirds the size. Thus, when interest is in the effect of a covariate on the response variable conditional on observing a positive response, standard approaches can result in severely biased estimates of marginal effects.

The unadjusted beta regression model also performs poorly when recoding zero observations to small, positive values, in which case the bias is about 10 per cent in design A and over 200 per cent in design B (column 5) – in the latter case, the unadjusted beta regression model finds effects that are twice as large, in absolute terms, than their nominal size. Thus, neither dropping observations that are zero nor recoding them to arbitrary small, positive values produces satisfying estimates from the unadjusted beta regression model, and the two effects can differ considerably not only in size, but also in sign.

On the surface, with respect to the total effect, the OLS estimates (column 6) are on par with the estimates from the adjusted beta regression model, producing virtually unbiased estimates of the total effect. However, the OLS estimate has two shortcomings. First, because it is based on a single equation, it fails to uncover the distinction in the effect on the probability of observing a positive response and on

the expected value of the response conditional on being positive. By construction, the single-equation model can only report a single effect. This is particularly problematic from a substantive point of view if the two effects work in opposite directions or if a covariate is relevant only in one of the equations. From column 3, it moreover follows that OLS is inadequate to estimate the effects separately by splitting the sample.

Second, the OLS estimates do not take into account that the marginal effects need to flatten out at the boundaries of the dependent variable: analogously to binary response models, as the predicted value of the dependent variable reaches zero or one, marginal effects need to diminish (Berry, Demeritt and Esarey, 2010). An implication is that marginal effects depend on values of other covariates, which is the case in non-linear models such as the beta regression model but not in a linear model. This is illustrated in Figure 3.2., which shows the distribution of marginal effects from the adjusted beta regression model in a single sample that was constructed according to design A; the vertical line indicates the marginal effect obtained from OLS. At $x_2 = 0$ the total effect of x_1 calculated from the beta regression model is .028, whereas at $x_2 = 2$, the total effect increases to .203. The beta regression model accurately reflects this compression inherent in non-linear models, while the OLS estimate suggests a constant effect of .064, masking substantial heterogeneity in the effect of x_1 on the response, which underscores the poor fit to the data.

III.1.3 Manifesto data

The previous discussion suggests that the adjusted beta regression model performs well in finite samples in terms of bias, rejection rates, and uncovering of marginal effects. This section presents the empirical results linking political rhetoric on trade to electoral institutions. Table 3.3. shows that, across a variety of

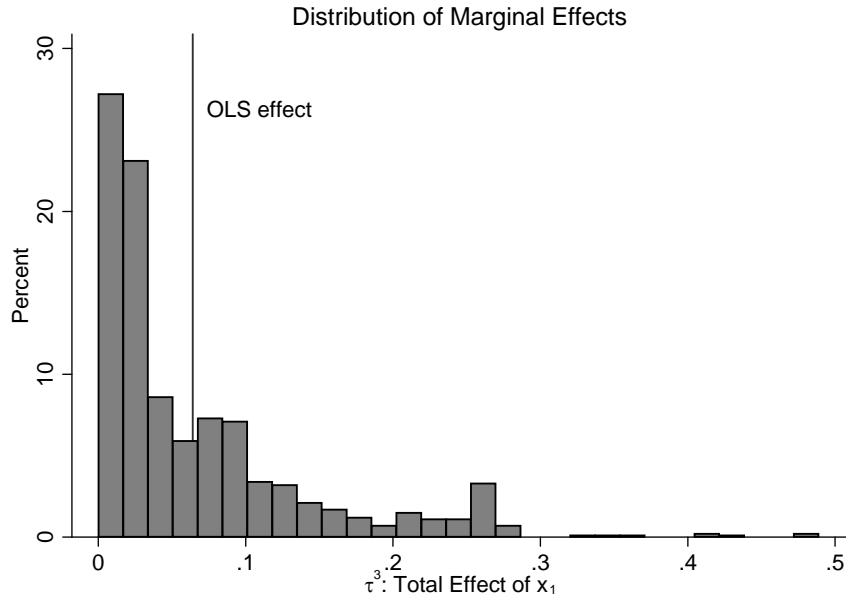


Figure 3.2.: Distribution of marginal effects within a sample created according to design A, calculated from adjusted beta regression model. Vertical line represents the marginal effect estimated from OLS.

models, plurality rule is associated with more statements in favor of protectionist trade policies; plurality rule also tends to be associated with a higher probability of making any statements in favor of protectionism, but this latter effect is not statistically significant in most cases. The first column reports results from the simplest model, which controls only for log GDP and GDP per capita; the marginal effects are illustrated in the top panel of Figure 3.3., where marginal effects are reported as the percentage increase relative to proportional representation systems, together with 95 per cent confidence intervals. Figure 3.3. shows that plurality systems are associated with an 18 per cent increase in the probability of making any statements in support of free trade and, if any such statements are made, plurality systems make 78 per cent more references in support of protectionism than proportional representation systems. Jointly, these two effects imply that the expected share of statements in support of protectionism is more than twice as high in plurality systems than in proportional representation systems, as indicated by

the third bar in the top panel of Figure 3.3. As noted previously, these effects hide substantial heterogeneity in the size of effects across observations. Figure 3.4. plots the distribution of the total effect in the sample, together with the average marginal effect (which in Figure 3.4. is indicated by the dashed vertical line and equivalent to the third bar in the top panel of Figure 3.3.).

Columns 2 through 6 consider a variety of robustness checks. Column 2 controls for trade openness, measured by the ratio of total trade (exports plus imports) to GDP, to alleviate concerns that support for protectionism arises as backlash to open markets, where market openness in turn should be a function of the electoral rule.⁴ The results show that plurality rule is associated with more references to protectionism even after controlling for trade openness. Moreover, trade openness has offsetting effects: on the one hand, support for protectionism is more likely to happen as trade openness increases, supporting the idea that some backlash to globalization may be occurring; on the other hand, the amount of support for protectionism decreases as trade openness increases. Column 3 includes the lagged dependent variable in order to account for persistence in the data. As the results show, the lagged dependent variable is an excellent predictor of both the current level of support for protectionism and the occurrence of protectionist statements; nevertheless, despite a sharp reduction in the sample size, the result remains that plurality rule is associated with more support for protectionism than proportional representation.

Column 4 controls for statements in favor of free trade to account for the possibility that the coefficient on plurality rule might reflect that plurality rule results in higher support for free trade by some parties which then gets challenged by other parties. Column 5 replaces the dependent variables with support of protectionism as a percentage of all sentences in party platforms devoted to

⁴Similar results are obtained when using the average tariff rate instead.

economic issues. The coefficient on plurality rule remains stable in size and retains statistical significance at the 1 per cent level in both cases. Finally, column 6 re-estimates the model from column 1, but instead of aggregating party positions across election-years uses the proportion of sentences in support of protectionism made by each individual party, and instead of weighting the dependent variable by party size controls for the party's vote share.

Yet, Table 3.4. shows that, at the same time, plurality rule is associated with more references to free trade. Columns 1 through 6 replicate the respective models from Table 3.3., but use references to free trade in place of references to protectionism as the dependent variable. The bottom panel of Figure 3.3. reports the marginal effects from the model in column 1. Plurality systems are 12 per cent more likely than proportional representation systems to make any references in support of free trade, as shown by the first bar. The second bar shows that plurality systems make about twice as many references in support of free trade as proportional representation, and the joint effect amounts to an increase in the expected percentage of sentences in support of free trade of over 125 per cent.

The results in column 2 show that the coefficient on plurality rule does not merely reflect that support for free trade arises as a challenge to high trade barriers, which might be higher under plurality rule, and column 3 shows that the result is robust to including a lagged dependent variable. These results are surprising from the perspective of standard accounts of trade politics, which focus on protectionist interest groups as the sole relevant interest groups. One potential explanation is that narrow interest institutions are associated with more protectionist trade policies which then get challenged in electoral campaigns. Yet, as shown in column 4, the results do not seem to be reflecting challenges to protectionist policy statements by other parties, which in turn should be more common under plurality rule. As with free trade, the results are also robust to recoding the dependent variable as the

percentage of statements on economic issues (column 5) and to using individual party positions instead of a weighted average (column 6).

In sum, these results show that plurality rule is associated with more support for protectionism, but also with more support for free trade – a result that corroborates the mixed and ambiguous results in the empirical literature.

III.2 Conclusion

If plurality rule is indeed associated with more incentives to appeal to narrow interest groups, then these results suggest that there must be influential interest groups in favor of free trade. Standard accounts of trade policy-making leave no room for such interest groups supporting free trade, where the only actors potentially in favor of free trade are consumers. Yet, because of collective action problems, consumers are assumed to face substantial difficulties in organizing politically. Consequently, the current literature assumes political conflict between narrow, protectionist interest groups, on the one hand, and broad, unorganized consumer interests in favor of free trade, on the other.

One potential explanation for these results can be provided by recognizing that most trade policies, over the course of at least the last century, have been set in reciprocal trade agreements (see, e.g., Pahre 2008 on reciprocal trade agreements), such as the World Trade Organization and its predecessor, the General Agreement on Tariffs and Trade. With reciprocity, a government can obtain market access abroad through tariff concessions from trading partners by lowering some of its own, domestic tariffs in turn. Under reciprocal trade agreements, then, exporters, who benefit from expanding market access abroad, have strong incentives to support domestic trade liberalization. Moreover, exporters satisfy many of the criteria that are commonly associated with successful interest groups (see, e.g., the survey in Bernard and Jensen 1999). Most notably, most goods are exported by a relatively

small number of firms, often less than half a dozen (Cebeci et al., 2012), providing for concentrated benefits and alleviating potential collective action problems. Many exporters also tend to be geographically concentrated; for instance, in the United States, more than 80 per cent of exporting firms have a single location (United States Census Bureau, Department of Commerce), allowing them to take advantage of the single-member districts provided by plurality rule.

While exporters have been acknowledged in several parts of the literature on trade politics as potentially influential actors (Milner, 1988; Gilligan, 1997*a*), their role for the relationship between domestic institutions and trade policy-making has been much less acknowledged. If both exporters and protectionist groups are politically relevant special interest groups, parties under electoral institutions favoring special interest groups should be more prone to support both free trade and protectionist trade policies. As a consequence, these electoral systems may produce higher tariffs on some goods and lower tariffs on others, explaining the overall ambiguous results in the empirical literature. It also implies that the domestic politics of trade, and the effects of electoral institutions in particular, cannot be understood in isolation of the international environment.

Table 3.3.: Estimation Results Manifesto Data, Support for Protectionism

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Beta equation</i>						
Plurality rule	.566*** (.001)	.500*** (.007)	.502*** (.008)	.514*** (.001)	.579*** (.000)	.344* (.062)
log GDP	-.037 (.379)	-.070* (.085)	-.009 (.835)	-.032 (.444)	-.032 (.457)	.005 (.915)
GDP per capita	-.869** (.018)	-.482 (.205)	-.883*** (.009)	-.863** (.018)	-.789* (.051)	-.848* (.059)
Trade		-.286* (.074)				
Lagged DV			126*** (.000)			
Free Trade				24.3 (.256)		
Party size						-.991*** (.001)
Constant	-5.54*** (.000)	-4.51*** (.000)	-6.38*** (.000)	-5.70*** (.000)	-8.88*** (0.000)	-4.49*** (.000)
<i>Logit equation</i>						
Plurality rule	.704* (.099)	1.03** (.017)	.474 (.207)	.664 (.120)	.704* (.099)	.683*** (.004)
log GDP	-.156 (.186)	.018 (.869)	-.193* (.092)	-.169 (.190)	-.156 (.186)	-.018 (.812)
GDP per capita	.278 (.833)	-1.31 (.353)	.690 (.599)	-.097 (.945)	.278 (.833)	-.593 (.517)
Trade		1.65*** (.000)				
Lagged DV			1.42*** (.000)			
Free Trade				1.31*** (.000)		
Party size						-.280 (.584)
Constant	4.80* (.084)	-.665 (.797)	4.80* (.092)	4.34 (.159)	4.80* (.084)	-.287 (.870)
Obs.	341	341	269	341	341	2048

*** significant at 1%, ** significant at 5%, * significant at 10%.

Coefficient estimates and p-values (in parentheses). Standard errors clustered by country. Dependent variable: Percentage of sentences in party platforms supporting protectionism by country-election year (models 1-4), by country-election year, relative to references to economic issues (model 5), and by party-election year (model 6).

Table 3.4.: Estimation Results Manifesto Data, Support for Free Trade

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Beta equation</i>						
Plurality rule	.695*** (.000)	.563*** (.001)	.663*** (.000)	.603*** (.000)	.639*** (.001)	.365** (.018)
log GDP	-.056 (.256)	-.118** (.019)	-.058 (.255)	-.053 (.280)	-.050 (.341)	-.062* (.078)
GDP per capita	.114 (.792)	.817** (.046)	.264 (.527)	.240 (.576)	.104 (.796)	-.109 (.788)
Trade		-.521*** (.002)				
Lagged DV			65.9*** (.002)			
Protectionism				73.6*** (.005)		
Party size						.026 (.913)
Constant	-5.06*** (.000)	-3.16** (.014)	-5.12*** (.000)	-5.24*** (.000)	-8.33*** (.000)	-3.29*** (.000)
<i>Logit equation</i>						
Plurality rule	.457 (.321)	.606 (.182)	.275 (.554)	.298 (.497)	.457 (.321)	.488 (.122)
log GDP	-.030 (.780)	.050 (.684)	.011 (.918)	.009 (.932)	-.030 (.780)	-.029 (.704)
GDP per capita	1.46 (.131)	.725 (.534)	1.02 (.278)	1.57 (.165)	1.46 (.131)	1.68** (.035)
Trade		.722 (.144)				
Lagged DV			1.60*** (.000)			
Protectionism				1.31*** (.000)		
Party size						2.32*** (.000)
Constant	1.39 (.590)	-1.10 (.729)	-.552 (.836)	-.470 (.853)	1.39 (.590)	-.963 (.591)
Obs.	341	341	269	341	341	2048

*** significant at 1%, ** significant at 5%, * significant at 10%.

Coefficient estimates and p-values (in parentheses). Standard errors clustered by country. Dependent variable: Percentage of sentences in party platforms supporting free trade by country-election year (models 1-4), by country-election year, relative to references to economic issues (model 5), and by party-election year (model 6).

Effect of Plurality Rule Percentage Increase, 95% Confidence Intervals

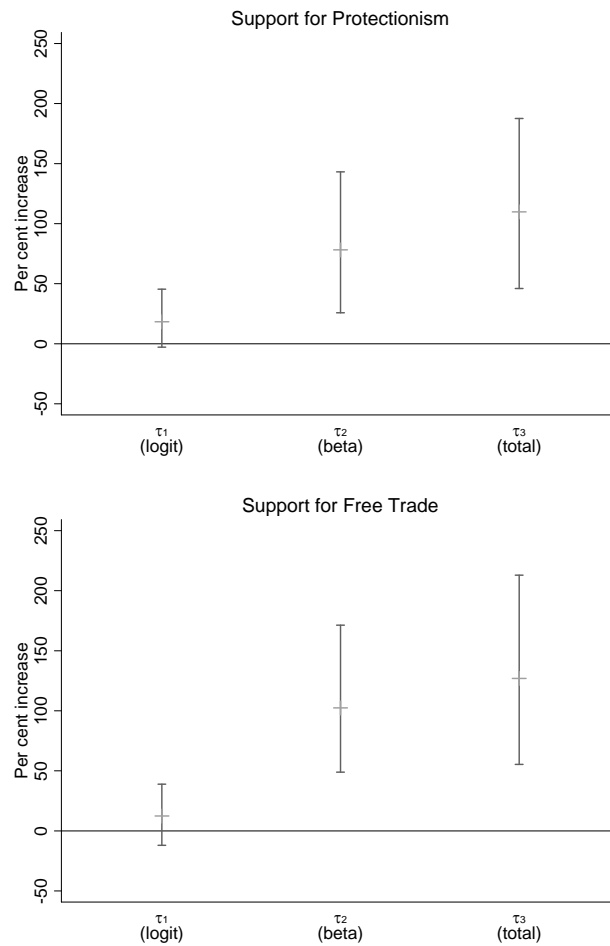


Figure 3.3.: Marginal effects and 95 per cent confidence intervals. Marginal effects expressed as percentage increase. For instance, τ^2 in the top panel shows that plurality systems make about 78 per cent more references in support of protectionism than proportional representation systems. Top panel: calculated from Table 3.3., column 1. Bottom panel: calculated from Table 3.4., column 1. τ^1 : effect on probability of observing statements in favor of free trade (top panel) or protectionism (bottom panel). τ^2 : effect on number of references in favor of free trade (top panel) or protectionism (bottom panel), conditional on any references being made. τ^3 : total effect, taking into account both τ^1 and τ^2 .

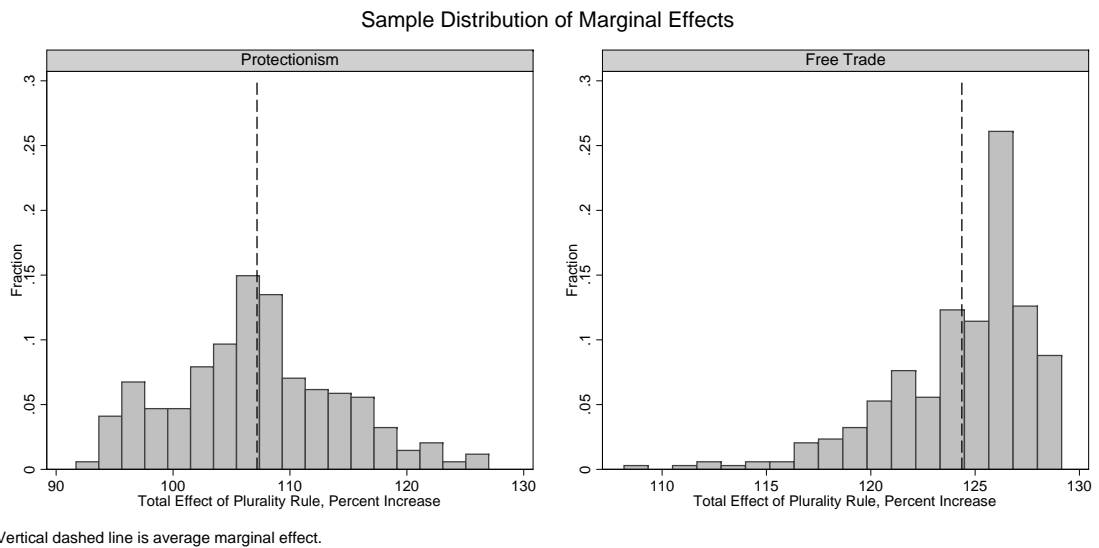


Figure 3.4.: Distribution of marginal effects in the sample, marginal effects expressed as percentage increase. Dashed vertical line represents the average marginal effect shown in the third bar in Figure 3.3. Left panel: calculated from Table 3.3., column 1. Right panel: calculated from Table 3.4., column 1. For comparison, the corresponding average marginal effects calculated from OLS estimates would be 171 per cent (left panel) and 219 per cent (right panel), well outside the range of marginal effects in the sample.

CHAPTER IV

Trade Disputes

Some of the most enduring debates in the international relations literature concern the question of how international law can be enforced. The literature distinguishes between two main mechanisms. First, domestic compliance constituencies – interest groups that have incentives to monitor compliance of their own government – can help enforce international norms (Dai, 2007; Simmons, 2009; Chaudoin, 2014*a*). Second, the literature emphasizes formal sanctioning mechanisms, such as dispute settlement bodies. About half of all international agreements contain explicit dispute settlement mechanisms, such as international courts and arbitration panels (Koremenos, 2007; Koremenos and Betz, 2012). Rulings by dispute settlement bodies can produce high reputational costs and authorize enforcement measures and thereby contribute to compliance with international norms (Guzman, 2008; Alter, 2012).

Both mechanisms have notable limitations. Domestic compliance constituencies can only affect their own government's behavior, not the behavior of foreign governments. In agreements where non-state actors are concerned about a foreign government's compliance, the domestic compliance constituency mechanism therefore has little bite. Likewise, compliance can be forced upon foreign governments through sanctioning and dispute settlement mechanisms, but

governments may be hesitant to provide this enforcement because of the associated costs (Thompson, 2010). Consequently, in agreements where interest groups are primarily concerned with compliance by foreign governments, enforcement may be difficult to achieve: non-state actors are not able to, and governments are not willing to, provide enforcement. This raises two closely related questions: First, how can these limitations be overcome and enforcement be provided? Second, why are some governments more actively participating in the enforcement of international law than others?

This chapter suggests that these limitations can be overcome where the two mechanisms complement each other and that, as a consequence, domestic political institutions can become an important determinant of government dispute behavior. In many international agreements, those most adversely affected by a government's non-compliance are interest groups in other countries – or what might be called foreign compliance constituencies. In trade agreements, for example, producers in other countries are typically those most adversely affected by a government's illegal imposition of trade barriers. Such groups cannot act as domestic compliance constituencies, because they are concerned with the policies of a foreign government. Moreover, alternative means of enforcing international law, such as the filing of disputes at dispute settlement bodies, are usually not available to foreign compliance constituencies either, because only governments can initiate disputes against foreign governments.

Yet, even where non-state actors cannot directly enforce international law, they can be a driving force behind dispute initiations by lobbying their own government to initiate a dispute against the foreign government. They are more likely to do so successfully where governments are more responsive to their interests because they value the political support of interest groups. Differences in the electoral rule can be a major determinant of the responsiveness of governments to interest

groups. Plurality rule, as compared to proportional representation, has been argued to provide less insulation from domestic groups that represent narrow interests (Rogowski, 1987; Persson and Tabellini, 2002; Ashworth and Mesquita, 2006). As a consequence, where foreign compliance constituencies represent narrow interest groups, plurality rule should be associated with more dispute initiations than proportional representation.

Data from trade dispute initiations at the General Agreement on Tariffs and Trade (GATT) and the World Trade Organization (WTO), where governments enforce international commitments by trading partners through the initiation of trade disputes on behalf of exporting firms, provide support for these expectations. Plurality electoral systems are associated with about three times as many dispute initiations as countries with proportional representation systems. The differences between electoral systems are especially pronounced where exporters, and disputes on their behalf, represent narrow interests: in developed economies and in countries with diversified exporting sectors.

Moreover, and as a corollary, these differences between electoral institutions should decline as the predictability of rulings increases over time. As uncertainty about the rulings of the dispute settlement body is reduced and rulings become more predictable, filing a dispute as well as lobbying a government for dispute initiations become less risky, and the advantages provided by plurality rule decrease. The chapter shows that the effect of plurality rule on dispute initiations decreases as legal precedent accumulates (which facilitates the predictability of rulings) and after reforms to the dispute settlement body streamlined the litigation process and enhanced its legalization. This conditional effect shows that the effects of domestic institutions are intertwined with the legalization of international institutions. As international legalization increases, the effects of domestic institutions become more muted. This result is consistent with the interplay of domestic and international

institutions in the context of trade politics, emphasized in Chapter II.

This argument resonates with a large literature that finds domestic institutions to be an important determinant of government behavior in international relations (Milner, 1997; Schultz, 2001), and it underscores a somewhat unexpected consequence of institutional design. Because many international agreements bar domestic actors from filing disputes themselves, domestic politics – and, in turn, domestic institutions – provide an explanation for differences in dispute behavior, and they do so in a deliberately state-centric institution. Moreover, the finding provides an explanation for differences in the participation of governments in the enforcement of international norms. Although almost all governments have a deep bench of potential cases they could bring to the GATT/WTO dispute settlement body, only few of these result in actual dispute initiations (Allee, 2008), and while some governments make extensive use of this dispute settlement mechanism, others rarely do. The responsiveness of governments to domestic interest groups can provide one explanation for these differences, even across similar levels of development or economic power.

These effects of domestic institutions on the incentives for governments to enforce compliance of foreign governments also bears a certain irony: Electoral institutions that increase the influence of domestic interest groups have also been associated with more incentives to violate international commitments (Rickard, 2010). Consequently, the same set of institutions is associated with a more active enforcement of international norms and more frequent non-compliance. While these simultaneous effects may be in tension with each other, they do not conflict so long as the temporary violation of norms does not undermine the stability of the institution in the long term – and dispute settlement bodies may, in fact, facilitate this concomitant non-compliance and enforcement of other's commitments (Rosendorff, 2005).

Finally, that the political incentives created by domestic institutions make it more attractive for some governments than for others to participate in the enforcement of international agreements has important implications for the functioning and the distributional effects of international institutions, especially when considering that the enforcement of international agreements can have externalities for third parties. Notably, while the enforcement of international norms can have positive externalities for other countries, the differences in government engagement with dispute settlement bodies can have substantial negative consequences for third parties if disputes are settled in a discriminatory fashion – which, at least at the GATT/WTO, tends to be the case (Kucik and Pelc, 2013). These effects compound, as filing disputes allows governments “to effectively shape the law’s interpretation and application over time to their advantage” (Shaffer, 2003, p. 11), and the legal precedent accumulated over time helps governments defend their trading rights more effectively in the future.¹

The next section outlines the argument relating domestic institutions to the initiation of international disputes, using the example of trade disputes at the GATT/WTO, and derives three propositions: plurality rule should be associated with more trade dispute initiations; the effect of plurality rule should be most pronounced in countries with diversified exports, where exporter interests plausibly represent narrow interest groups; and the effect of plurality rule on dispute initiations should decline as the predictability of rulings increases. The second section provides empirical support for these propositions. The final section concludes.

¹While, formally, the WTO rules do not give any authority to legal precedent, Pelc (2014, p. 547) finds substantial evidence that countries and courts behave as if legal precedent exists – “precedent may be a legal fiction, but it is one that courts and countries tacitly accept to be bound by.”

IV.1 Trade disputes at the GATT/WTO

Violations of international commitments often benefit domestic actors at the expense of foreigners. In the case of the GATT/WTO, violations of treaty commitments generally provide advantages to domestic industries (Rickard, 2010), hurting foreign firms and industries in turn – predominantly exporting firms that face trade barriers imposed by foreign governments (Bown and Reynolds, 2014). The dispute settlement body of the GATT/WTO identifies and publicizes such violations of treaty obligations in order to restore compliance. If compliance is not achieved during the dispute settlement process, the dispute settlement body can authorize retaliatory actions to force compliance upon the government in violation of its obligations (Hudec, 2002).

While private actors, such as exporting firms, often have the strongest incentives to contest the policies of a foreign government, they are explicitly excluded from filing disputes at the dispute settlement body of the GATT/WTO.² As stated on the WTO web site, “Since only WTO Member governments can bring disputes, it follows that private individuals or companies do not have direct access to the dispute settlement system. [...] Of course, [they] can, and often do, exert influence or even pressure on the government of a WTO Member with respect to the triggering of a dispute.”³ Therefore, firms with an interest in enforcing treaty commitments have to rely on their government to pursue disputes on their behalf. This design feature is quite common in international agreements. Only about one third of international agreements with dispute settlement procedures give any role to non-state actors (individuals, firms, or NGOs) in the dispute settlement process (Koremenos, 2013a). Even among these agreements, non-state actors rarely can

²Understanding on Rules and Procedures Governing the Settlement of Disputes, April 15, 1994. Marrakesh Agreement Establishing the World Trade Organization, Annex 2, 1869 U.N.T.S. 401; 33 I.L.M. 1226(1994).

³http://www.wto.org/english/tratop_e/dispu_e/dispu_settlement_cbt_e/c1s4p1_e.htm. Last accessed on October 24, 2012.

initiate disputes. However, non-state actors may “exert influence or even pressure” on their governments.

The problem for a domestic firm hurt by a foreign government’s policies is that, in most circumstances, asking for a trade dispute is a rather narrow and particularistic demand from the perspective of the government. First, pursuing disputes at the GATT/WTO can be associated with substantial financial costs. A dispute at the WTO can easily cost US\$500,000 in legal fees alone (Bown and Hoekman, 2005, 870), and more complex disputes total more than US\$10 million (Nordstrom and Shaffer, 2007, 9). Indeed, in a survey of delegations at the WTO, more than half of respondents reported the “high costs of litigation” among the reasons for not having filed a trade dispute (Busch, Reinhardt and Shaffer, 2009, p. 18). Second, while private firms may contribute to cover these financial costs (Bown and Hoekman, 2005), disputes may raise diplomatic tensions and spur retaliation, and this backlash can raise the costs of trade dispute initiations sufficiently that some governments refrain from pursuing trade disputes (Busch, Reinhardt and Shaffer, 2009; Sattler and Bernauer, 2010). Third, while the success rate of those WTO disputes that are filed is very high, the risk of losing a dispute can put a government’s foreign policy reputation with voters on the line, increasing the reluctance of governments to file trade disputes. Finally, and most specific to trade disputes, an increase in a country’s exports can, by raising domestic prices, harm consumers. While, as common in studies of trade policies, this foregone consumer welfare is unlikely to harm individual consumers sufficiently to induce political action, governments may take this additional cost into account.

In the GATT/WTO, the costs of initiating disputes are compounded by the need to potentially enforce a ruling of the dispute settlement body, which typically authorizes a government to implement retaliatory trade policies. These retaliatory trade policies impose costs on exporters in the foreign country that is found to be

in violation of its treaty commitments, and political pressure by these exporters may force the foreign government back into compliance. For instance, in the course of the WTO dispute over the steel tariffs imposed by United States President Bush, the European Commission threatened to retaliate with protectionist measures of its own, targeting, among others, oranges from Florida, which was a key state in the upcoming midterm elections. As an observer put it, “[the Europeans] are trying to retaliate where they think they can get the maximum amount of political leverage” (Chicago Tribune, April 5, 2002). Retaliatory protectionist measures also have domestic political consequences for the sanctioning country. On the one hand, they provide protection to the affected domestic industry, which can be politically expedient (Pond, 2014); on the other hand, they raise the price of goods imported from the targeted country, which, even if only temporarily, hurts domestic consumers of the imported goods. The enforcement of a ruling once it is issued imposes costs on governments, and the ability and willingness of governments to absorb these costs affects the incentives to litigate a dispute.

Many of the costs of pursuing trade disputes are borne by the government. By contrast, the benefits of trade disputes are mostly concentrated on a small number of firms. A quarter of WTO disputes challenges policies affecting two or fewer products at the HS6 level (which distinguishes, for instance, between ‘upright pianos’, with code 92.01.10, and ‘grand pianos’, with code 92.01.20), covering less than US\$5 million worth of imports a year (Bown and Reynolds, 2014). The median value of imports covered in trade disputes initiated at the WTO is about US\$66.1 million. Even where goods are produced by large industries, the number of exporting firms is often small within each industry, and few firms reap benefits from disputes. Figure 4.1. underscores this point with data from the Exporter Dynamics Database (Cebeci et al., 2012), which provides data from 45 countries for years from 1997 through 2011 on various exporter characteristics. The figure

displays a histogram of the median number of exporters per product (at the HS6 level) across country-years in the sample. For the majority of observations, the median number of exporters per product is between one and three, showing that most potential trade disputes affect few firms.

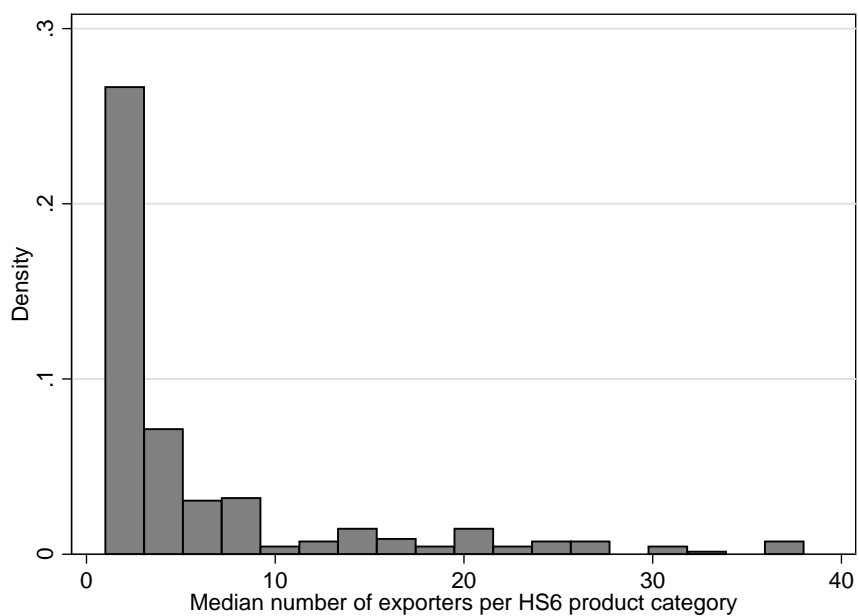


Figure 4.1.: Histogram of the median number of exporting firms per product, with products defined by HS6 categories. Data from 45 countries, 1997-2011, from the Exporter Dynamics Database (Cebeci et al., 2012). The data show that for most product categories, only one to three exporting firms exist.

It follows that many trade disputes can plausibly be understood as supporting narrow exporter interests and can have significant costs for the government. The costs “to identify, analyze, pursue, and litigate a dispute” (Guzman and Simmons, 2005, p. 559) make governments reluctant to file disputes. Governments that are more willing to absorb these costs in exchange for the political gain from supporting narrow interest groups should be more likely to pursue trade disputes. A large literature suggests that domestic electoral institutions are a key factor affecting the willingness of governments to absorb these costs and to provide costly policies to narrow interest groups. In the context of trade policies, at least since Rogowski (1987) the literature paid particular emphasis to the distinction between proportional representation (PR) and plurality rule. The premise in this literature is that narrow interest groups, through lobbying or other political contributions, obtain favorable policies from the government, which needs to trade off narrow and broad public interests. The influence of narrow interest groups is supposed to be larger in plurality electoral systems. The small population size per district in single-member districts and the typically weaker parties in plurality systems are key factors enabling narrow interests to exert disproportionate influence (Rogowski, 1987; Grossman and Helpman, 2005). The smaller district size implies that individual legislators should be more willing to influence government policy on behalf of constituents. In the context of the United States, the President and members of the Senate are thought to pursue more broad-based interests than members of the House of Representatives, due to the differences in constituency size. Weaker parties under plurality rule, moreover, give individual legislators more influence in policy-making (McGillivray, 2004). Proportional representation systems, by contrast, tend to favor broad-based public spending on homogeneous, but geographically dispersed groups. Since most trade disputes benefit few firms, plurality rule should create more political incentives to initiate disputes on behalf

of narrow domestic groups.

While the decision to initiate a trade dispute is a decision by the executive, the electoral rule can still matter for dispute initiations. In parliamentary systems, the electoral fortunes of the executive are directly linked to the electoral rule for legislators; in presidential systems, the executive is dependent on the legislature to pass legislation and has incentives to provide policies to politically important constituents – as was evident in the steel tariffs under United States President Bush in anticipation of the 2002 midterm elections. Similarly, the distinction between plurality rule and proportional representation has been linked to violations of international trade commitments (Rickard, 2010), even though the implementation of some of these violating measures falls under the purview of the executive. Even if the executive has little direct interest in pursuing a trade dispute, individual legislators may pressure the executive for the initiation of trade disputes, thereby assuming functions similar to access points (Ehrlich, 2007). This view is consistent with the finding that members of the United States Congress frequently interact and intervene with the International Trade Commission (Allee and Miler, 2009), which is an agency with the authority to impose non-tariff barriers to trade, even if individual members of Congress cannot set these policies directly. Legislators exert such influence more successfully if they hold seats in politically important districts and a trade dispute is providing sufficiently large political benefits to affect the vote outcome in those districts – which, given the narrowly targeted benefits of most trade disputes, is more likely in smaller, single-member districts, where narrow interests receive disproportionate influence relative to the broader population. If the legislator's political success is more dependent on narrow interest groups, the legislator has more incentive to push harder for a dispute initiation by the government, for instance by offering political support to the government through issue-linkage on other political issues. Thus, even though individual legislators

cannot initiate trade disputes directly on behalf of their district constituents, they can exert political pressure on a government to initiate a dispute.

This discussion yields a first proposition.

Proposition 4.1. *Plurality rule should be associated with more trade dispute initiations at the GATT/WTO than proportional representation.*

The previous argument hinges on the assumption that trade disputes benefit narrow interest groups, but not the broader public. This is most plausibly the case in developed economies with diversified export markets, where pursuing trade disputes for maintaining and securing trade in any specific exported good can be politically expedient, but it is not an economic imperative. By contrast, for countries with less diversified exports, maintaining exports of any single good can be crucial from a macroeconomic perspective. For instance, the banana regime of the European Union caused estimated losses to Ecuador of about US\$500,000 a day, and bananas account for about a third of Ecuador's exports (Davis and Bermeo, 2009). Export losses on such dimensions can pose problems for a country's balance-of-payments position, with the attendant implications for foreign currency reserves, currency management, and debt repayment. Banana exporters can hardly be considered narrow interest groups for Ecuador, and Ecuador's challenge to the European Union's policies on banana imports at the WTO dispute settlement body is better understood as an attempt to defend broad, public interests than narrow exporter interests. More generally, where countries depend on few export markets, defending access to these markets benefits small interest groups, but it also has larger macroeconomic benefits. In such circumstances, the relevance of trade disputes as a tool to garner political support from narrow interest groups decreases, since trade disputes also benefit broader interests. Hence, if the association between plurality rule and trade disputes is due to plurality rule being more sensitive to narrow interest group demands, then the effect of plurality rule on trade dispute

initiations should be prevalent only in countries with diversified export markets; plurality rule should not be associated with more trade dispute initiations where countries depend on few export goods and markets. A second proposition therefore is as follows.

Proposition 4.2. *The effect of plurality rule on trade dispute initiations should be most pronounced in the presence of diversified export markets.*⁴

If electoral institutions rule affect the responsiveness of governments to lobbying by domestic interest groups, then the effect of these institutions should depend on the legalization of the dispute settlement body and the availability of legal precedent, both of which increase the predictability of rulings. Domestic actors affected by another country's policies may have some general idea of the legal merit of a potential case, but they might be uncertain about whether the dispute settlement process will result in the expected ruling; the closer the link between the perceived legal merits of a case and the expected outcome of the dispute settlement process, the more predictable a ruling is. In many cases, and especially in developed economies, private firms contribute to the dispute settlement process by providing financial resources (Bown and Hoekman, 2005), such that losing a case has direct costs for domestic actors. Even in the absence of direct contributions to the litigation process, a lost dispute implies that the involved firms expended resources and political capital on lobbying with little to no economic return. Because of the possibility of losing a dispute, the predictability of rulings is relevant for domestic actors that are considering whether to lobby their government for a dispute initiation: the less predictable the dispute settlement rulings are, the more risky this lobbying is. A lower predictability of rulings, therefore, magnifies the effects of electoral institutions. Even relatively uncertain cases are worth pursuing

⁴As a corollary, because developed economies have, on average, more diversified export markets than developing economies, we might expect the differences in dispute initiation rates among electoral systems to be most pronounced among developed economies.

if lobbying is inexpensive. By contrast, if rulings are more predictable, lobbying for cases of low legal merit becomes uniformly less attractive, and lobbying for cases of higher legal merit becomes uniformly more attractive, such that the effect of electoral institutions on dispute initiation rates declines.

To make this discussion more explicit, suppose a government, denoted by g , can initiate a dispute on behalf of a domestic actor, f . The domestic actor can provide resources to the government in exchange for the initiation of a dispute. The resources provided by the domestic actor, denoted by $l \geq 0$, may constitute direct lobbying contributions, but they may also come in the form of political support. The government weights these with some coefficient, κ , in its utility function, and it pays a cost, c_g , for litigating a dispute. κ represents how much the government values narrow interest groups over the general public and is assumed to be larger in plurality systems than in proportional representation systems. Then, the government receives a payoff of $\kappa l - c_g$ for initiating a dispute and a payoff of zero for refusing to initiate a dispute. Consequently, the government initiates a dispute if and only if

$$l \geq \frac{c_g}{\kappa}. \quad (4.1)$$

The domestic actor receives some utility, $u_f > 0$, from winning the dispute and zero from losing. Contributions l enter the payoffs of the domestic actor through a function $c(l)$, where $c(l)$ is strictly increasing and convex in l , and $c(0) = 0$, such that the domestic actor pays no cost when not providing any contributions. The domestic actor knows the potential case has some legal quality, $w \in [-b, b]$. For any specific domestic actor, w is drawn from a distribution with (twice differentiable) cumulative distribution function $F_w(w)$ and probability density function $f_w(w)$. A case of legal quality w results in a ruling in favor of the domestic actor with probability $p(w) \in (0, 1)$ if the case is brought to the dispute settlement body. Cases of higher legal quality result in a ruling in favor of the complainant with a

higher probability, such that $\partial p(w)/\partial w > 0$. The domestic actor receives a payoff of $p(w)u_f - c(l)$ if the case is brought to the dispute settlement body, and a payoff of $-c(l)$ if the government does not pursue the case. Thus, the domestic actor receives a negative return, the cost of making contributions, if the government declines to pursue the dispute or if the dispute is lost.

In a subgame perfect Nash equilibrium, the domestic actor will never provide more contributions than necessary, such that condition (4.1) holds with equality. It follows that the domestic actor lobbies the government if

$$p(w) \geq (u_f)^{-1} c\left(\frac{c_g}{\kappa}\right). \quad (4.2)$$

Thus, if condition (4.2) holds, f lobbies the government by providing $l^* = \frac{c_g}{\kappa}$, and the government initiates a dispute in turn. If condition (4.2) fails, f makes no contributions and the government refrains from initiating a trade dispute.

The predictability and timeliness of legal rulings is reflected in differences in the function $p(w)$. If the value of $p(w)$ is close to .5 regardless of the legal merit of a case and if it hardly changes with the legal quality of a case, rulings are unpredictable; by contrast, the more closely the outcome of the ruling is linked to the legal quality of a case, the more predictable it is. Figure 4.2. illustrates this relationship. The horizontal axis represents the legal quality of a case, while the vertical axis represents the probability with which the dispute settlement body issues a ruling in favor of the complainant. The graphs correspond to varying degrees of uncertainty about the outcome of a dispute. The dotted function represents the scenario where legal rulings are rather certain from knowledge of the legal merit of a case; by contrast, the dashed line represents the scenario where the outcome of a dispute is almost unrelated to the legal merit of a case, and the probability of a favorable ruling is closer to .5 than in the former case.

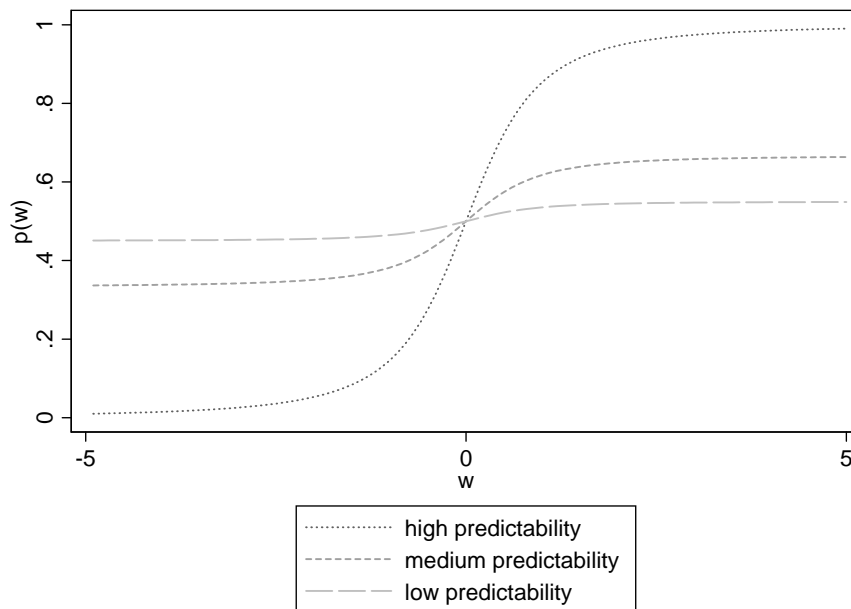


Figure 4.2.: Illustration of the relationship between the perceived legal quality of a case (w , horizontal axis), and the probability of a ruling in favor of the complainant from the dispute settlement body ($p(w)$, vertical axis). Steeper graphs correspond to a better predictability of rulings. The graph plots the function defined in equation (4.3) for various levels of α .

The different graphs in Figure 4.2. can be represented by a function such as

$$p(w) = \frac{1}{\alpha} \frac{w}{2(1+w^2)^{\frac{1}{2}}} + \frac{1}{2}, \quad (4.3)$$

where $\alpha \geq 1$ determines how accurately w maps onto panel rulings. For larger values of α , panel rulings are less sensitive to changes in w ; in particular, for $\alpha \rightarrow \infty$, the panel ruling is in favor of the complainant with probability .5, and both low and high quality cases would be settled by a coin toss. Larger values of α represent more uncertainty about the dispute settlement body's ruling, while lower values α can be interpreted as higher levels of legalization in the institution. The functional form in equation (4.3) ensures a sigmoid shape and further guarantees to return a probability that is bounded between zero and one.

f lobbies the government and a dispute is initiated if

$$\frac{w}{(1+w^2)^{\frac{1}{2}}} = \rho(w) \geq \frac{2\alpha c(c_g/\kappa)}{u_f} - \alpha \equiv \phi. \quad (4.4)$$

Let $\phi \in [\rho(-b), \rho(b)]$, such that the costs of disputes are sufficiently high that disputes are not filed indiscriminately and such that the benefits of disputes are sufficiently high that disputes are filed at least sometimes. If w is distributed according to a cumulative distribution function $F_w(w)$, it follows that $r = \rho(w)$ is distributed according to $F_w(\rho^{-1}(r))$ on the set $R = \{r = \rho(w) | w \in [-b, b]\}$. Since $\rho(w)$ is strictly increasing in w , the inverse function $\rho^{-1}(r)$ exists and is itself strictly increasing in r . For the following, suppose $F_w(w)$ is representing a uniform distribution on $[-b, b]$. The uniform distribution has some appeal for its simplicity, and it guarantees that the average expected ruling does not depend on the predictability of rulings – that is, it ensures that the average outcome of rulings is unaffected by changes in the

predictability of rulings. Then, $\rho(w)$ has cumulative distribution function

$$F_r(r) = \begin{cases} 0 & \text{if } r < \frac{-b}{(1+b^2)^{1/2}}, \\ r \left[2b(1-r^2)^{\frac{1}{2}} \right]^{-1} + \frac{1}{2} & \text{if } r \in \left[\frac{-b}{(1+b^2)^{1/2}}, \frac{b}{(1+b^2)^{1/2}} \right], \\ 1 & \text{if } r > \frac{b}{(1+b^2)^{1/2}}. \end{cases} \quad (4.5)$$

The probability of a dispute initiation is given by $\Pr(\text{dispute}) = 1 - F_r(\phi)$, which is strictly increasing in κ (thereby providing a derivation of Proposition 4.1). To determine how the effect of plurality rule changes with the predictability of rulings, consider the cross-partial derivative of this probability with respect to α and κ . Since larger values of α represent a lower predictability of rulings, a positive cross-partial derivative indicates that the effect of plurality rule decreases in the precision of rulings, while a negative cross-partial derivative implies that the effect of plurality rule increases in the precision of rulings. The cross-partial is positive whenever $f_r(\phi) + \phi f_r'(\phi) > 0$. From the cumulative distribution function in equation (4.5) it follows after simplification that this condition is equivalent to $1 + 2\phi^2 > 0$, which always holds. This result implies that the effect of plurality rule decreases in the predictability of rulings (or, equivalently, that the partial derivative with respect to κ increases in α).

This discussion yields a third proposition.

Proposition 4.3. *The effect of plurality rule on dispute initiation rates should decline as the predictability of rulings increases.*

Before proceeding to an empirical evaluation of these three propositions it is worthwhile noting that increasing the predictability of rulings itself has an ambiguous effect on the probability of dispute initiations. This theoretical result is consistent with evidence presented in Busch (2000), which suggests that reforms to the GATT's dispute settlement body had little direct effect on dispute filings;

it also resonates with theoretical arguments as in Gilligan, Johns and Rosendorff (2010) that strengthening international courts can have ambiguous effects on the settlement of disputes. However, the model does suggest that a higher predictability of rulings modifies the effects of domestic institutions. While the effect of this institutional change may not be evident directly, it should have an empirically discernable impact on the functioning of the dispute settlement body of the GATT/WTO through its effect on the link between domestic institutions and dispute initiations.

IV.2 Empirical evidence

To test the propositions, I rely on data on dispute initiations at the GATT and at the WTO. The data set is organized by the country-year and is restricted to members of the GATT and WTO, respectively, that had at least two legal political parties running for parliamentary seats in the past election.⁵ Most of the models are further restricted to high-income countries, as indicated by membership in the Organization for Economic Co-Operation and Development (OECD). The restriction to high-income countries has three motivations. First, these countries are most likely to have the experience and resources to pursue trade disputes for domestic political reasons (Smith, 2004; Kim, 2008). Second, the sample controls for variables such as legal capacity that are hard to measure for a cross-section time-series. Third, many of these countries are plausibly affected to a similar extent by changes in trade policies in foreign countries, which increases the plausibility that each country in the sample has an equal ‘chance’ of filing a trade dispute.

The dependent variable captures the number of trade disputes initiated by a country in any given year, which is available from Eric Reinhardt (1996) for the GATT and from Horn and Mavroidis (2011) for the WTO. I consider a dispute to

⁵Members of the European Communities and, later, the European Union are omitted.

be initiated whenever a country submits a request for consultations at the dispute settlement body.⁶

Data on political institutions are available from Beck et al. (2001); the variable on plurality rule is coded 0 for countries that use proportional representation systems and 1 for countries that use plurality rule. I consider alternative variables for narrow interest institutions – the number of electoral districts, the incentives of legislators to cultivate a personal vote, and the share of legislators with sub-national districts – below.

The main models include three control variables, obtained from the World Bank; additional control variables are considered as robustness checks. Country size is associated with both electoral institutions and trade openness (Katzenstein, 1985), and together with wealth also with the ability to engage with international institutions (Kim, 2008). I therefore include the log of gross domestic product, GDP, and gross domestic product per capita, as control variables. Because larger exports are associated with more opportunities for pursuing trade disputes, and trade openness has been linked to electoral institutions, I further include the logged value of a country's exports as control variable. Taking data limitations into account, the sample restricted to OECD countries comprises 23 countries for years between 1975 and 2010, for a total of 456 observations. The main models in the following are negative binomial models to accommodate the dependent variable, which is a count (ranging from 0 to 17) as well as the overdispersion in the data (with the unconditional variance being about four times as large as the mean). Alternative models are considered as robustness checks.

⁶Ideally, I would be able to use data on disputes filed under preferential trade agreements as well, since these often have distinct dispute settlement bodies and governments may use them strategically to avoid WTO dispute settlement rulings (Busch, 2007). However, to date there are few instances of dispute settlement under preferential trade agreements, and most dispute settlement bodies of preferential trade agreements have never been invoked (Son, 2008). For these reasons, I restrict the analysis to GATT/WTO disputes in the following.

IV.2.1 Domestic institutions

Table 4.1. reports estimation results from negative binomial models with standard errors clustered by countries. The first model includes the three control variables and shows that plurality rule is associated with more dispute initiations. The coefficient on plurality rule is statistically significant, with a p -value of .000. The differences between countries with plurality rule and with proportional representation are quite substantial (Figure 4.3.). Countries characterized by plurality rule initiate about .83 disputes per year, while proportional representation systems initiate about .23 disputes per year. The difference between these two quantities, the average marginal effect of moving from proportional representation to plurality rule, amounts to .60 trade disputes per year: plurality rule is associated with more than three times as many disputes per year as proportional representation.⁷

This result is robust to the inclusion of two additional control variables, the size of the agricultural sector relative to GDP and the number of previous dispute initiations (column 2). A country's economic structure, and the size of its agricultural sector, may be related to dispute initiations to the extent that agricultural products are typically undifferentiated, which makes it harder for firms to overcome collective action problems in lobbying for dispute initiations. Larger agricultural sectors, in particular when subsidized through government programs, may also be related to a country's electoral institutions. Through previous dispute initiations, governments acquire expertise and experience with the procedural aspects of the dispute settlement system (Davis and Bermeo, 2009). The variable

⁷All predicted values and marginal effects reported in the following are calculated at observed sample values, such that marginal effects represent average marginal effects (as opposed to marginal effects at sample averages). To obtain these average marginal effects, the marginal effect is calculated for each observation at the observed sample values; the marginal effects are then calculated as the average across all observations in the sample; see Cameron and Trivedi (1998) for a discussion. Confidence intervals are obtained analytically from the Delta method or, where marginal effects are conditional on interaction terms, through simulations.

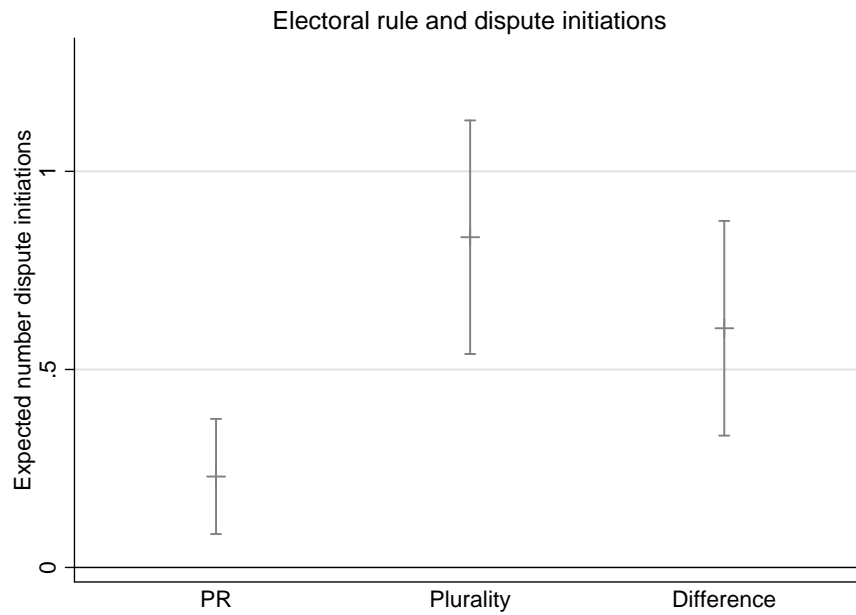


Figure 4.3.: Predicted number of trade disputes for proportional representation (PR) and plurality rule, and average marginal effect of plurality rule, together with 95 percent confidence intervals. Calculated from column 1 in Table 4.1.

also effectively captures unobserved country characteristics related to dispute initiations.

IV.2.2 Export diversification

Proposition 4.2 states that the effect of plurality rule should depend on the diversification of a country's exports: the effect of plurality rule should be most pronounced in countries with diversified exports, and negligible in countries with exports concentrated on a few goods. Column 3 includes a variable on export market concentration. The variable, obtained from the United Nations Conference on Trade Development, is available only for years after 1995, which restricts the number of observations substantially, but it has good coverage across countries. The variable theoretically can range from zero to one. In the estimation sample, it ranges from .045 to .474. Higher values indicate less diversified export markets, and the coefficient on the interaction term consequently should be negative. Column 3 supports this expectation, and the result holds in the sample including non-OECD countries (column 4).

Figure 4.4. displays the results in the sample of OECD countries, showing the average marginal effect of plurality rule at various levels of export concentration together with a 95 percent confidence interval. The distribution of the variable on export concentration is displayed as a histogram. For the most diversified export markets, at the left end of the distribution, plurality rule is associated with a substantial increase in the number of trade disputes. Most observations in the sample of OECD countries are towards the left end of the distribution, where exports are very diversified. Consequently, for most observations in the sample, the effect of plurality rule is to statistically significantly increase dispute initiation rates. As a country's exports become more concentrated and trade disputes become more valuable for broader public concerns, the effect of plurality rule decreases, and it turns negative if a country's export concentration is sufficiently large. The negative effect of plurality rule on dispute initiations is not evident when extending the sample to non-OECD countries. However, it hints at the possibility that

export diversification, while distinct from it, shares similarities with geographical concentration, in that both variables can modify the effect of electoral institutions on policy choices: concentrated export markets imply that defending exports on any single good benefits the general public as much as it benefits narrow interest groups; similarly, geographically diffuse industries become attractive targets for broad-based policies (Rickard, 2008).

Column 5 includes a dummy variable equal to zero for OECD members and equal to one for non-OECD members; the variable is interacted with the electoral rule variable. The results show that, consistent with the previous interpretation of the results, plurality rule is associated with more trade disputes among OECD countries, but that the effect is wiped out completely among non-OECD countries. By contrast, there is little evidence for common alternative explanations for the different effects among OECD and non-OECD countries. Differences in the economic size of countries or their per capita wealth cannot explain the differences among OECD and non-OECD countries (not reported). When including both the interaction with the non-OECD dummy and the export concentration variable, the coefficient on the latter remains significant and stable in size, while the former is small and not statistically significant (not reported), suggesting that the export concentration variable accounts for the divergent effects of plurality rule among OECD and non-OECD countries.

Table 4.1.: Dispute Initiation and Electoral Rule

	(1)	(2)	(3)	(4)	(5)
Plurality rule	1.29*** (4.3)	1.28*** (4.9)	5.25*** (7.5)	1.53*** (3.1)	.873** (2.2)
x Export concentration			-29.7*** (-7.1)	-6.86** (-2.5)	
x Non-OECD					-1.09** (-2.1)
ln(GDP)	.036 (.12)	-.083 (-.33)	-.321 (-1.3)	.756*** (4.2)	.741*** (4)
GDP per capita	-.015 (-1.5)	-.029* (-1.8)	-.031** (-2.5)	-.028*** (-2.7)	-.024** (-2.2)
ln(exports)	.660** (2.2)	.430** (2.1)	.852*** (2.9)	-.127 (-.62)	-.032 (-.16)
Agriculture		-.138** (-2.5)			
Previous disputes		.011** (2.2)			
Export concentration			2.39 (1.4)	-.244 (-1.9)	
Non-OECD					.426 (1.1)
Constant	-18.8*** (-6.6)	-9.18*** (-2.9)	-14.2*** (-7.4)	-17.3*** (-7.5)	-19.8*** (-11)
Obs.	456	443	212	1398	2338

Coefficient estimates and *t*-statistics. *** significant at 1%, ** at 5%, * at 10%.

Negative binomial models, clustered standard errors.

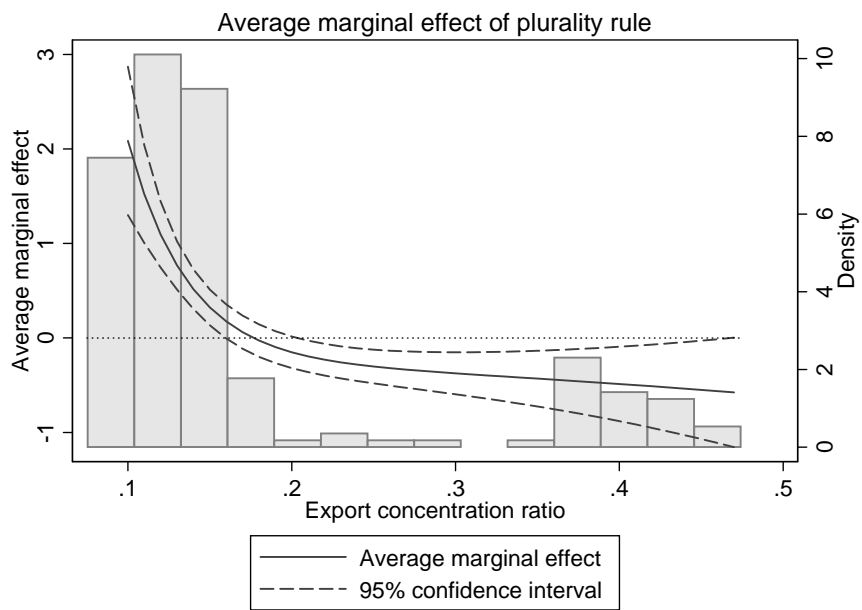


Figure 4.4.: Average marginal effect of plurality rule on dispute initiations and 95 percent confidence intervals, as a function of export concentration ratio. Histogram in the background shows the distribution of the export concentration variable in the sample. Calculated from column 3 in Table 4.1.

IV.2.3 The predictability of rulings

Table 4.2. presents models to assess Proposition 4.3, which posits that the effect of plurality rule decreases as the predictability of rulings increases. The first two models leverage the reforms to the dispute settlement body of the GATT in the 1989 Dispute Settlement Procedures Improvements and again in 1994 to evaluate this proposition. The reforms are generally perceived to have increased the institutionalization and legalization of the institution (Goldstein et al., 2000). For instance, the time lines for distinct parts of the dispute settlement process were tightened, complainants received the right to a panel, and the possibility of a review of panel decisions by the Appellate Body was introduced. While some of these reforms may have increased the procedural costs of litigation at the GATT/WTO, they also increased the predictability of the dispute settlement process from the perspective of the complainant (Kim, 2008). The stricter time lines help speed up the litigation process, resulting in potentially more timely relief in response to violations of treaty commitments by trade partners, and the possibility to demand a review of panel decisions adds a second layer of judicial expertise. Consistent with more general views of institutionalization (Keohane, 1984), these reforms should decrease uncertainty in the dispute settlement process, and the effect of plurality rule on dispute initiations should diminish.

The first two models include a dummy variable coded 1 for years after 1989, when the dispute settlement body of the GATT was reformed first, and 0 for years up to 1989. Column 6 includes the three initial control variables, column 7 includes agricultural production as a percent of GDP and the number of previous disputes. Based on the results in column 6, Figure 4.5. displays the average marginal effect of moving from proportional representation to plurality rule in both time periods as well as the difference between the two marginal effects, together with 95 percent confidence intervals. The effect of plurality rule is smaller after 1989 than before

1989; in both time periods, plurality rule remains associated with a statistically significant increase in the number of trade disputes. The third bar shows that the difference between the two effects is statistically significant.

Second, the predictability of rulings should also increase over time as countries and domestic actors gain experience with the dispute settlement body and a body of legal precedent accumulates (Davis and Bermeo, 2009; Pelc, 2014). Complainants not only benefit from their own experience with the dispute settlement body, but also from cases brought by other countries, rulings on which give hints about the likely outcome if a similar case were brought to the dispute settlement body. Thus, the effect of plurality rule should decrease in the number of previously initiated disputes. Column 8 includes a variable on the logged cumulative number of previous disputes initiated by any country at the GATT/WTO. Column 9 only considers disputes initiated by other countries in order to isolate the effect of learning from the substantive interpretation of past rulings from the effect of learning about the procedural aspects of litigating cases at the GATT/WTO (Kim, 2008; Davis and Bermeo, 2009). The results are substantively similar and support the theoretical expectation: the effect of plurality rule decreases as governments and domestic actors learn about the interpretation of international law and the predictability of rulings increases. Figure 4.6. reports the marginal effect of plurality rule as a function of cases previously litigated at the GATT/WTO by other countries, as calculated from column 9. The effect of plurality rule is initially strong and significant and declines as the number of previous cases increases. The results are similar without the log transformation and robust to additional controls, such as year trends (not reported).

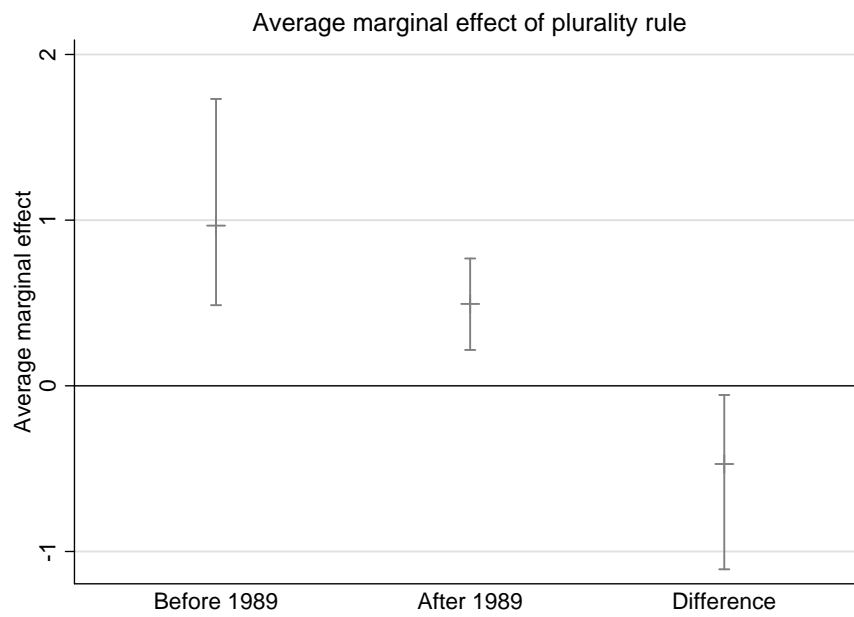


Figure 4.5.: First two bars: Average marginal effect of plurality rule on dispute initiations and 95 percent confidence interval, before and after reforms to dispute settlement body in 1989. Third bar: Difference in the marginal effects before and after 1989. Calculated from column 6, Table 4.2.

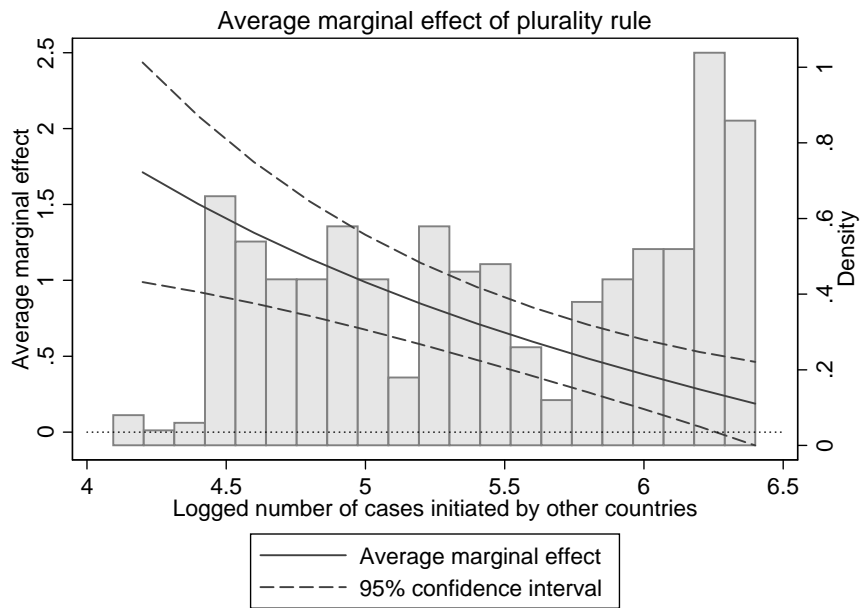


Figure 4.6.: Average marginal effect of plurality rule on dispute initiations and 95 percent confidence interval as a function of cases previously initiated by other countries at the GATT/WTO. Calculated from column 9, Table 4.2.

Table 4.2.: Predictability of Rulings

	(6)	(7)	(8)	(9)
Plurality rule	2.23*** (4.2)	2.37*** (4.4)	6.98*** (3.7)	7.57*** (4.2)
x post 1989	-1.25** (-2.3)	-1.47** (-2.5)		
x ln(past disputes)			-1.01*** (-3.0)	-1.11*** (-3.5)
post 1989	.973* (1.8)	1.26** (2.3)		
ln(past disputes)			.625* (1.8)	.530 (1.6)
ln(GDP)	-.022 (-.079)	-.127 (-.6)	-.123 (-.45)	-.320 (-1.2)
GDP per capita	-.014* (-1.7)	-.029** (-2.2)	-.013* (-1.6)	-.010 (-1.4)
ln(exports)	.738** (2.4)	.467* (1.9)	.883*** (2.7)	1.10*** (3.3)
Agriculture		-.138** (-2.5)		
Previous disputes		.012*** (2.9)		
Constant	-20.1*** (-6.1)	-9.91** (-2.6)	-23.9*** (-6.4)	-23.6*** (-6.8)
Obs.	456	443	456	456

Coefficient estimates and t -statistics. *** significant at 1%, ** at 5%, * at 10%. Negative binomial models, clustered standard errors.

IV.2.4 Robustness checks

Tables 4.3. and 4.4. provide results from several robustness checks. The association between plurality rule and trade dispute initiations is not affected by any of these changes. Turning first to Table 4.3., column 10 excludes the United States from the sample, which has a plurality system and is the leading single initiator of trade disputes at the GATT/WTO. Column 11 replaces the count of dispute initiations as dependent variable with a dummy variable. The substitution ensures that the previous results are not sensitive to observations with an unusually large number of dispute initiations. Column 12 includes world economic growth as a control variable, which may cause a protectionist turn and thereby increase opportunities for dispute initiations. Column 13 includes year dummies to control for year-specific effects that are identical across countries.

The average number of trade disputes in the sample is less than one. Such coarse data can result in biased coefficient estimates with binary dependent variables (King and Zeng, 2001), and similar concerns apply with a dependent variable that is a count. The low average number of trade disputes implies a large number of country-years with no trade disputes at all. While a common approach in the literature is to estimate a zero-inflated negative binomial model to accommodate what are considered excess zeros, the large number of zeros may accurately reflect a low mean, which does not justify a zero-inflated model (which posits the presence of two distinct data generating processes). Firth (1993) proposes a penalized maximum likelihood estimator, which has been applied fruitfully to scarce data with binary dependent variables (Heinze and Schemper, 2002; Zorn, 2005). The estimator introduces an additional term into the likelihood function, which has two advantages. First, the penalization term removes the first-order bias from the coefficient estimates, which in small data sets can bring a substantial reduction in bias. Second, because the penalization term effectively adds a small number to

each observation, the excess zeros are no longer present. I implement a version of the penalized maximum likelihood estimator by adjusting it to the dependent variable and obtain coefficient estimates through iteratively re-weighted least squares. The relationship between plurality rule and dispute initiations is robust to this estimation method (column 14).⁸

⁸I leave a more thorough description of the penalized maximum likelihood estimator when applied to Poisson distributed count data and its implementation using iteratively reweighted least squares to a separate paper.

Table 4.3.: Disputes: Robustness Checks I

	(10)	(11)	(12)	(13)	(14)
Plurality rule	1.68*** (6.3)	1.56*** (4.6)	1.30*** (4.4)	1.33*** (3.9)	1.10*** (4.6)
ln(GDP)	-.685*** (-3)	-.177 (-.35)	.051 (.17)	-.167 (-.6)	.169 (1.5)
GDP per capita	-.007 (-.82)	-.013 (-.85)	-.015 (-1.4)	-.005 (-.5)	-.022*** (-3.5)
ln(exports)	1.11*** (4.2)	.928* (1.7)	.637** (2.1)	.941*** (3.1)	.598*** (3.9)
World growth			-.907 (-1.3)		
Constant	-11.5*** (-5.5)	-20*** (-5.7)	-18.6*** (-6.5)	-21.7*** (-6.7)	-20.6*** (-11)
Obs.	420	456	456	456	456
Year FE	No	No	No	Yes	No

Coefficient estimates and t -statistics. *** significant at 1%, ** at 5%, * at 10%.

Columns (10), (12), (13): Negative binomial models, clustered standard errors.

Column (11): Logit model, clustered standard errors.

Column (14): Penalized maximum likelihood.

Table 4.4. provides additional robustness checks. Column 15 includes a variable for government partisanship. Right-wing governments are more likely to come to power in plurality systems (Iversen and Soskice, 2006). If right-wing governments are also more prone to supporting business interests, then the association between plurality rule and trade disputes might be due to the higher incidence of right-wing governments. While the coefficient on plurality rule remains relatively stable, left governments are more likely to pursue trade disputes.

Columns 16 through 18 include variables to control for potential relationships between electoral rule, trade policies, and exchange rate policies. Column 16 includes a variable from Levy-Yeyati and Sturzenegger (2005) to distinguish between managed and floating exchange rate regimes. Managed exchange rates, by reducing flexibility on exchange rate policies, may create additional demands for active trade policy management and therefore be associated with trade disputes. At the same time, monetary commitments have been associated with proportional representation systems (Bernhard and Leblang, 1999). Columns 17 and 18 control for exchange overvaluation. Overvalued and appreciated exchange rates have been associated with more demands for trade disputes by domestic actors (Betz and Kerner, 2014); because overvalued exchange rates and exchange rate appreciation advantage consumers at the expense of firms producing traded goods, they also may be associated with the electoral rule. Column 17 includes a variable measuring exchange rate appreciation simply as the percentage increase in the nominal exchange rate; data on nominal exchange rates is available from the Penn World Tables (Heston, Summers and Aten, 2006). Column 18 includes a variable measuring real exchange rate overvaluation as the ratio between the nominal exchange rate and the purchasing power parity rate, adjusted for differences in real income per capita as suggested in Rodrik (2008), using again data from the Penn World Tables (Heston, Summers and Aten, 2006).

Table 4.4.: Disputes: Robustness Checks II

	(15)	(16)	(17)	(18)
Plurality rule	1.20*** (4.4)	1.32*** (3.7)	1.31*** (4.3)	1.29*** (4.3)
ln(GDP)	.082 (.31)	-.229 (-.89)	.044 (.14)	.028 (.091)
GDP per capita	-.018* (-1.7)	-.011 (-.93)	-.014 (-1.3)	-.015 (-1.5)
ln(exports)	.636** (2.5)	1.05*** (3.5)	.647** (2.1)	.668** (2.2)
Partisanship: center	-.163 (-.51)			
Partisanship: left	.475* (1.9)			
Floating rate		-.051 (-.22)		
Currency value			-.005 (-.98)	.002*** (4.6)
Constant	-19.5*** (-7.7)	-21.7*** (-5.2)	-18.8*** (-6.6)	-18.8*** (-6.6)
Obs.	401	340	453	455

Coefficient estimates and t -statistics. *** significant at 1%, ** at 5%, * at 10%.
Negative binomial models, clustered standard errors.

If the reported results are in fact due to differences in electoral institutions, then replacing the variable on plurality rule with other measures of institutions that increase the influence of narrow interests should yield similar results. I consider three variables in the following. First, the incentives to provide policies to narrow interest groups should increase in the number of electoral districts (Rogowski, 1987): through a larger number of districts, even relatively small interest groups can gain representation in the political process (Ehrlich, 2007). Data on the number of electoral districts (in bicameral systems for the lower level of the house) are available from Golder (2005). Second, legislators from national constituencies should have more broad based interests than legislators from smaller geographic constituencies. I obtain a variable on the proportion of national constituencies from Seddon et al. (2002), which ranges from zero to one; I invert the measure, such that a value of zero represents a system where all legislators come from national districts. Third, as legislators have more ‘Incentives to Cultivate a Personal Vote’ (Carey and Shugart, 1995), the influence of narrow interest groups should increase. Data are again available from Seddon et al. (2002). The variable is an index of party control over ballots, whether and how votes are pooled, and how votes are allocated. In the sample, the resulting index ranges from zero to five, with higher values indicating more incentives to cater to narrow interest groups.

Table 4.5. presents the results when replacing the variable on plurality with these variables. The coefficients on the number of electoral districts and the personal vote index have the expected positive sign and are statistically significant at the one percent level. The effects of these variables are also notable in substantive terms. Moving from the sample median to the sample maximum on the variable on the logged number of electoral districts increases the predicted number of trade disputes by a factor of five. Similarly, moving from the sample median to the sample maximum on the personal vote index more than doubles the predicted number of

Table 4.5.: Disputes: Alternatives to Plurality Rule

	(19)	(20)	(21)
log(districts)	.576*** (2.9)		
subnational districts		-1.97 (-1.0)	
Personal vote			.450*** (4.4)
ln(GDP)	-.023 (-.13)	.058 (.12)	-.045 (-.23)
GDP per capita	-.009 (-.6)	-.025 (-1.3)	-.014 (-1.1)
ln(exports)	.707*** (3)	1.03 (1.5)	.791*** (2.7)
Constant	-20.6*** (-5.3)	-25.6*** (-3.7)	-20.5*** (-6.5)
Obs.	579	293	293

Coefficient estimates and *t*-statistics.

*** significant at 1%, ** at 5%, * at 10%.

Negative binomial models, clustered standard errors.

trade disputes, to more than one full dispute per year. By contrast, and contrary to expectations, the coefficient estimate on the proportion of subnational districts is statistically not significant at conventional levels and carries a negative sign.

A potential caveat to the argument in this chapter is the possibility to settle disputes informally. If plurality rule creates more incentives for governments to initiate and litigate disputes, as argued above, and if this is known to the defendant in a potential dispute, the parties should be able to solve the dispute amicably without a formal complaint. However, the defendant may be uncertain about the strength of the complainant's commitment to litigate a dispute and enforce a ruling on behalf of its own constituency. This is especially the case where the dispute is politically motivated and where the political strength and relevance of the complainant's domestic constituency is in question. If such uncertainty exists, the defendant may prefer to wait for a formal dispute initiation, rather than concede the issue prematurely.

Additionally, an informal settlement presumes that the defendant does not host an equally strong domestic constituency which caused the rule violation and wants to uphold it. In this case, the defendant has incentives to refuse concessions through informal discussions, seeking 'political cover' for a policy change that is unpopular domestically (Allee and Huth, 2006*b*). Indeed, Rickard (2010) shows that plurality rule, by favoring narrow interest groups, is associated with more rule violations that are challenged through trade disputes. By favoring narrow interest groups, plurality rule is not only associated with more rule violations but also with more reluctance to cave in to informal demands by trading partners.

This discussion points to the importance of domestic institutions in the defendant country as well. Indeed, and consistent with the notion that protectionist domestic interest groups may block policy change, Table 4.6. shows, using data from Reinhardt (1996), that governments elected under plurality rule are less likely to concede an issue after a formal complaint is made but before a panel is formed: Proportional representation systems are about twice as likely to concede the issue without a formal panel ruling. Of course, the significance of this finding

Table 4.6.: Concessions

	Concessions	
	No	Yes
PR	99 89%	12 11%
Plurality	146 95%	7 5%
Total	245	19

Number and percentage of cases where defendant admitted rule violations before panel formation. Data from Reinhardt (1996).

is limited, given the small number of cases where defendant conceded. However, it does suggest that electoral systems are not only associated with incentives for governments to push complaints against other countries, but also to uphold violations for a longer time, underscoring the concurrent incentives to violate and to complain in order to satisfy both pro-trade and anti-trade interest groups.

IV.3 Conclusion

Compliance constituencies, which protest rule violations by their own government, can be crucial for the monitoring and enforcement of international agreements. In this regard, domestic politics is a crucial element in enforcing international agreements – for instance, where international agreements provide focal points for the mobilization of domestic interest groups and where courts can enforce international norms domestically (Simmons, 2009). This chapter suggests a different mechanism through which domestic politics matter for the enforcement of international agreements. Domestic groups may not only force compliance onto their own government. They also may push their own government to force compliance onto foreign governments. Such demands from compliance constituencies are

more likely to result in the enforcement of international agreements through dispute initiations where domestic institutions increase a government's responsiveness to interest groups.

The focus on domestic institutions as determinant of dispute initiations complements systemic factors, such as the precision of international law (Huth, Croco and Appel, 2011) and the economic prowess of countries (Sattler and Bernauer, 2010). By providing an explanation for differences in dispute initiation rates among countries of similar levels of development, it adds to the domestic political determinants of dispute behavior, such as the legal capacity of governments (Kim, 2008; Busch, Reinhardt and Shaffer, 2009). The explanation may also be relevant beyond trade. For instance, VanLoozen (2012) finds instances of firms pushing their governments into international dispute resolution procedures in maritime border disputes. If some governments are systematically more susceptible to these demands, then they should be more frequently engaged in such disputes. More generally, if international agreements require the enforcement of norms, then domestic institutions, by shaping the political incentives of governments, can affect which countries provide such enforcement.

In the context of trade politics, the relationship between domestic institutions and dispute initiations implies that those electoral institutions that are believed to favor protectionist trade policies, because they offer 'protection for sale' at cheaper rates (Rogowski, 1987; Grossman and Helpman, 1994; Nielson, 2003; Grossman and Helpman, 2005), also create more incentives for governments to defend a liberal international trading order in order to support domestic exporter interests. This suggests the need to consider the role of exporters in trade policy-making more explicitly, and how this consideration, in turn, affects the relationship between electoral institutions and trade policies – especially when the incentives to appeal to exporters and to protectionist firms conflict. Interests conflict, for instance, in the

presence of reciprocal trade negotiations, where expanding market access abroad requires a country to lower its own trade barriers, such that advancing exporter interests comes at the expense of import-competing interests. Domestic institutions that put protection for sale also should put trade liberalization for sale, and the simultaneous influence of exporters and protectionist groups implies that narrow interest institutions consequently need not result in more protectionist policies on average (Chapter II). The initiation of trade disputes therefore provides a promising alternative to variables such as average tariff rates or trade flows, which can be problematic for evaluating differences in the influence of domestic interest groups on trade policies (McGillivray, 2004; Kono, 2006).

The argument in this chapter points to the interplay between domestic institutions and the design of international institutions. Domestic institutions can only play a role for dispute initiations when governments have to file disputes on behalf of private actors. This implication speaks to the question of why governments would want to maintain responsibility for dispute filings. While filing disputes can have substantial costs, the upside of maintaining discretion over which disputes are filed and when they are filed is that governments can use trade disputes to garner domestic political support among affected domestic groups – which is the more important in the context of international agreements that limit other channels to cater to interest groups, such as the provision of protectionist trade policies, which is restricted by the GATT/WTO. However, the example of the GATT/WTO also highlights the importance of viewing design elements of international institutions in conjunction. Governments are not only responsible for initiating disputes, but also need to enforce the ruling once it is issued. Having direct access to the dispute settlement body is of little use to private actors if their government refuses to implement policies that enforce the ruling. Even if private actors could initiate disputes directly, they would still have to rely on their government's support for

enforcing a ruling, which in turn will influence which disputes are brought by which actors. Thus, the design of dispute settlement bodies and of enforcement mechanisms cannot be viewed independently when considering their implications for the functioning of international institutions.

Finally, while this chapter focuses on the case where governments have to file disputes on behalf of domestic actors, in some cases the flipside of this scenario applies. In July 2014, for instance, newspaper reports suggested that the German government pressured Microsoft to challenge a ruling by a New York judge. The ruling would have given the United States government access to customer data stored on servers overseas, much to the dismay of European governments already upset about wide-reaching data collection efforts by United States agencies. The German government itself was in no position to challenge the ruling, but it successfully persuaded Microsoft to do so – which, as the *New York Times* acknowledged, was “the first time an American company is believed to have fought back against a domestic warrant for data held overseas.”⁹ Such linkages between the interests of governments and the interests of non-state actors in filing legal complaints, and how this relationship is shaped by differences in legal standing, may gain further prominence as the activities of transnational non-state actors, such as non-governmental organizations and multinational corporations, become more prominent.

⁹Microsoft’s Top Lawyer Is the Tech World’s Envoy. *New York Times*, July 20, 2014.

IV.A Appendix

This appendix provides a derivation of the three propositions in the chapter. Consider a model that involves a government, g , and a domestic actor, f . The government can decide whether to initiate a trade dispute on behalf of the domestic actor; the domestic actor can provide resources to the government in exchange for the government initiating a dispute. The resources provided by the domestic actor, denoted by $l \geq 0$, may constitute direct lobbying contributions, but they may also come in the form of political support. The government weights these with some coefficient, κ , in its utility function, and it pays a cost, c_g , for litigating a dispute. κ here represents how much the government values narrow interest groups over the general public, and as has been argued in the main body of the text, κ is assumed to be larger in plurality systems than in proportional representation systems. Finally, suppose the government's objective function includes a term $\gamma \geq 0$, which reflects broader, possibly macroeconomic, benefits of disputes. The government receives a payoff of $\kappa l + \gamma - c_g$ for initiating a dispute, and it receives a payoff of zero for refusing to initiate a dispute. Consequently, the government initiates a dispute if and only if

$$l \geq \frac{c_g - \gamma}{\kappa}. \quad (4.6)$$

The domestic actor receives some utility, $u_f > 0$, from winning the dispute, and zero from losing the dispute. f pays a cost of $c(l)$ for providing contributions to the government, where the function $c(l)$ is strictly increasing and convex in l , and $c(0) = 0$, such that the domestic actor pays no cost for not providing any contributions. The domestic actor knows that the potential case has some legal quality, $w \in [-b, b]$. A case of legal quality w results in a ruling in favor of the domestic actor with probability $p(w) \in (0, 1)$ if the case is brought to the dispute settlement body. Cases of higher legal quality result in a ruling in favor of the

complainant with a higher probability, such that $\partial p(w)/\partial w > 0$. The domestic actor receives a payoff of $p(w)u_f - c(l)$ if the case is brought to the dispute settlement body, and a payoff of $-c(l)$ if the government does not pursue the case.

In a subgame perfect Nash equilibrium, the domestic actor will never provide more contributions than necessary, such that condition (4.6) holds with equality. This determines the equilibrium level of contributions, which is given by $l^* = \max\left[0, \frac{c_g - \gamma}{\kappa}\right]$. First, suppose that $c_g < \gamma$. In this case, the broader value of a dispute is sufficiently large to induce a dispute initiation, even without any lobbying by the domestic actor. In this case, no lobbying contributions are made in equilibrium. It follows that the responsiveness of the government to narrow interest groups, as reflected in κ , does not enter the government's decision and hence does not affect the probability of dispute initiations, as suggested in Proposition 4.2. In equilibrium, f makes no contributions and the government initiates a dispute.

In the following, suppose that $c_g > \gamma$. It follows that f lobbies the government if

$$p(w) \geq (u_f)^{-1} c\left(\frac{c_g - \gamma}{\kappa}\right). \quad (4.7)$$

It follows that in a subgame perfect Nash equilibrium, if condition (4.7) holds, f makes contributions $l^* = \frac{c_g - \gamma}{\kappa}$ and the government initiates a dispute; if condition (4.7) fails to hold, f makes no contributions, and the government does not initiate a dispute.

To evaluate how the probability of dispute initiation varies with domestic institutions and the precision of legal rulings, suppose that, for any specific domestic actor, w is drawn from some distribution with cumulative distribution function $F_w(w)$ and probability density function $f_w(w)$. It follows that the

probability of a dispute initiation is

$$\Pr(\text{dispute}) = 1 - F_w\left(p^{-1}\left[\left(u_f\right)^{-1} c\left(\left(c_g - \gamma\right)/\kappa\right)\right]\right) \quad (4.8)$$

Taking the first derivative with respect to k yields

$$\frac{\Pr(\text{dispute})}{\partial k} = \frac{(c_g - \gamma)}{\kappa^2} f_w\left(p^{-1}(m)\right) \frac{c'\left(\frac{(c_g - \gamma)}{\kappa}\right)}{u_f p'(p^{-1}(m))}, \quad (4.9)$$

where $m = \left(u_f\right)^{-1} c\left(\frac{(c_g - \gamma)}{\kappa}\right)$ and $z'(\cdot)$ denotes the first derivative of z with respect to its argument. This expression is always positive, thus providing a derivation of Proposition 4.1.

To allow for differences in the predictability of legal rulings, suppose that the function $p(w)$ is given by

$$p(w) = \frac{1}{\alpha} \frac{w}{2(1+w^2)^{\frac{1}{2}}} + \frac{1}{2}, \quad (4.10)$$

where $\alpha \geq 1$ determines how accurately w maps onto panel rulings. For larger values of α , panel rulings are less sensitive to changes in w ; in particular, note that for $\alpha \rightarrow \infty$, the panel ruling is in favor of the complainant with probability .5. Note that the function is increasing in w , such that cases with higher legal quality are more likely to result in a ruling in favor of the complainant; and that, for higher values of α , the function increases less sharply in w and is closer (in absolute value) to .5, such that the outcome becomes less predictable from knowledge of w .

f lobbies the government and a dispute is initiated if

$$\frac{w}{(1+w^2)^{\frac{1}{2}}} = \rho(w) \geq \frac{2\alpha c\left(\left(c_g - \gamma\right)/\kappa\right)}{u_f} - \alpha \equiv \phi. \quad (4.11)$$

Let $\phi \in [\rho(-b), \rho(b)]$, such that the costs of disputes are sufficiently high that disputes

are not filed always and such that the benefits of disputes are sufficiently high that disputes are filed at least sometimes. Note also that this implies that $\phi \in (-1, 1)$. If w is distributed according to a cumulative distribution function $F_w(w)$, it follows that $r = \rho(w)$ is distributed according to $F_w(\rho^{-1}(r))$ on the set $R = \{r = \rho(w) | w \in [-b, b]\}$. Since $\rho(w)$ is strictly increasing in w , the inverse function $\rho^{-1}(r)$ exists and is itself strictly increasing in r . For the following, suppose $F_w(w)$ is representing a uniform distribution on $[-b, b]$. The uniform distribution has some appeal for its simplicity, but it also guarantees that the average expected ruling, as defined in equation (4.10), does not depend on the predictability of rulings – that is, it ensures that the average outcome of rulings is unaffected by changes in the predictability of rulings. Then, $\rho(w)$ has the cumulative distribution function

$$F_r(r) = \begin{cases} 0 & \text{if } r < \frac{-b}{(1+b^2)^{1/2}}, \\ \frac{r}{2b(1-r^2)^{-1/2}} + \frac{1}{2} & \text{if } r \in \left[\frac{-b}{(1+b^2)^{1/2}}, \frac{b}{(1+b^2)^{1/2}} \right], \\ 1 & \text{if } r > \frac{b}{(1+b^2)^{1/2}}. \end{cases} \quad (4.12)$$

The probability of a dispute initiation is given by $\Pr(\text{dispute}) = 1 - F_r(\phi)$. Proposition 4.3 predicts that the cross-partial of this equation with respect to α and κ is positive. Using that

$$\frac{\partial \phi}{\partial \kappa} = \alpha \frac{\partial^2 \phi}{\partial \kappa \partial \alpha} \quad \text{and} \quad \frac{\partial \phi}{\partial \alpha} = \frac{\phi}{\alpha}, \quad (4.13)$$

yields that the cross-partial can be written as

$$\frac{\partial^2 \Pr(\text{dispute})}{\partial \kappa \partial \alpha} = f_r(\phi) + \phi f_r'(\phi). \quad (4.14)$$

From the cumulative distribution function F_r , derived in equation (4.12), it follows

that

$$f_r(\phi) = \frac{1}{2b} (1 - \phi^2)^{-\frac{3}{2}},$$
$$f_r'(\phi) = \frac{1}{2b} 3\phi (1 - \phi^2)^{-\frac{5}{2}}.$$

Substituting these expression into condition (4.14) yields

$$(1 - \phi^2)^{-\frac{3}{2}} + 3\phi^2 (1 - \phi^2)^{-\frac{5}{2}} > 0, \quad (4.15)$$

$$1 + 2\phi^2 > 0, \quad (4.16)$$

which always holds, and where the second line follows from $\phi \in (-1, 1)$. This result completes the derivation of Proposition 4.3.

CHAPTER V

The Domestic Costs of Commitment

Domestic politics are central in large parts of the international relations literature (Putnam, 1988; Bueno De Mesquita et al., 2003; Bueno de Mesquita and Smith, 2012). This is also the case for the literature on international institutions, which uses the presence of domestic groups supporting and opposing international cooperation to explain when and why governments rely on international institutions (e.g., Dai 2007; Simmons 2009; Chaudoin 2014a): governments use international agreements to overcome the resistance of domestic groups which oppose desired policy changes, whereas domestic groups benefiting from international cooperation are key drivers of the formation and negotiation of international agreements.

Such arguments gained prominence, for instance, in the literatures on exchange rate regime choices (Bernhard and Leblang, 1999), trade agreements (Gilligan, 1997a), and the Bretton Woods institutions, the International Monetary Fund in particular (Przeworski and Vreeland, 2000; Vreeland, 2003; Mukherjee and Singer, 2010). The line of argument assumes that international agreements as commitment devices lock in policy reforms and therefore pose an attractive opportunity to governments. They help governments to move policy in a desired direction, to gain support from domestic groups favoring cooperation, and to prevent future policy reversals by tying the hands of governments. From the perspective of

this literature, it is surprising that many international agreements, in particular those that attempt to solve commitment problems and are driven by domestic pro-cooperation groups, fail to include formal sanctioning mechanisms, contain dispute settlement mechanisms that fail to punish violations effectively, or allow governments to escape their obligations.

This chapter argues that agreements that lock in policies can undermine cooperation that is driven by pro-cooperation groups. Drawing on a formal model, the chapter emphasizes the trade-off between a government's policy preferences, which an international agreement may help to satisfy, and the government's ability to collect political support in the future, which is frustrated by an international agreement that ties its hands. International agreements imply mutual policy adjustments (Keohane, 1984). If domestic groups benefit from these adjustments, they are willing to support cooperation, which can help governments overcome the resistance of groups opposed to cooperation. In this regard, by activating pro-cooperation groups, international agreements indeed help governments move policy and obtain a new policy equilibrium, which can make international institutions attractive political tools.

Yet, an international agreement that locks in a policy also makes the issue politically irrelevant in the future. If deviating from the announced international obligations becomes prohibitively costly, due to external enforcement mechanisms, the government has no incentives to change the policy anymore. Consequently, the issue loses salience in political contests. With the issue off the table, pro-cooperation groups no longer have to support the government to obtain the desired policy (while groups initially opposed to the agreement have little reason to change their mind and increase their support of the government after the agreement is signed), which undermines the government's efforts to use an international agreement to shift its support base. Anticipating these consequences of tying its hands through

an international agreement, the government might be better off retaining policy discretion through unilateral policy-making than with setting policy through an international agreement that ties its hands, even if this means that the government will end up with policy further away from its ideal point.

This is not to say that the presence of pro-cooperation groups inhibits cooperation. Rather, it becomes attractive to governments to negotiate agreements that are relatively weak with respect to their formal enforcement mechanisms and that allow them to violate their commitments. The lack of formal enforcement mechanisms, and the inability of these agreements to effectively tie a government's hands, implies that domestic groups interested in sustaining cooperation need to maintain their support for the government even after the agreement is in place. This, in turn, can be necessary for the government to have an interest in signing the agreement in the first place. While strong enforcement mechanisms may facilitate the international feasibility of agreements – by ensuring compliance by all sides – they can undermine their domestic feasibility. Thus, domestic and international enforcement mechanisms cannot substitute for each other.

This argument has a number of implications. First, a lack of formal enforcement mechanisms need not be evidence of a government's intention not to comply with the agreement (Downs, Rocke and Barsoom, 1996). Instead, such an agreement may reflect a government's unwillingness to surrender an issue that it could leverage for domestic political gain. This logic also helps to connect and explain two empirical findings. More than half of agreements with an underlying commitment problem, in which case an agreement should tie a government's hands, also feature an escape clause, which allows governments to abrogate their obligations.¹ Similarly, governments sometimes fail to pursue policies that are perceived to be in their partisan interests – such as economically conservative parties that fail to lock in

¹Data are from the Continent of International Law project (Koremenos, 2013b, 2015).

restrictive monetary policies through exchange rate pegs (Steinberg and Walter, 2012) or that fail to lock in property rights protection through bilateral investment treaties (Allee and Peinhardt, 2010). The argument shows that both of these patterns may be traced to similar domestic concerns.

Second, the possibility for governments to defect from an agreement becomes important to sustain a political equilibrium. However, and in contrast to previous arguments, this possibility becomes a necessity not only because of the presence of groups opposed to cooperation, but also because of the presence of groups supporting cooperation. This has ironic consequences in agreements based on issue linkage or reciprocal concessions. In such agreements, domestic groups benefit from compliance with the agreement's terms by the foreign government. These domestic groups are therefore willing to support their own government's compliance. This is the case in trade agreements, for instance, where interest groups with an interest in maintaining free trade policies of their trading partners have incentives to support their own government's free trade policies. Under these conditions, a foreign government that is fully committed to maintaining the agreement terms is an unattractive partner for the home government: knowing that the foreign government will never violate the agreement terms, the pro-cooperation group can cease to support cooperation by its own government. It is the possibility for the foreign government to violate the agreement, and the need for the home government to prevent such a violation through, for instance, the threat of reciprocal retaliation, that makes an international agreement attractive to governments. The result adds to recent arguments, which show that cooperation is difficult to sustain in agreements when one government is unilaterally committed to free trade (Gray, Lindstaedt and Slapin, 2011; Chaudoin and Urpelainen, 2015).

The next section outlines a formal model. I show how an international agreement, by mobilizing domestic interest groups, can move a government's policy

choice. I then derive conditions under which locking in policy reforms through an international agreement can be politically unattractive to a government, whereas a weak agreement without enforcement is attractive. The last section concludes.

V.1 Policy-making unilaterally and internationally

The model comprises a government, g , and two interest groups, a and b . The game has two time periods, $t \in \{1, 2\}$. The government can set some policy, x_t , on which its preferred policy choice is $x_g > 0$, and it benefits from contributions made by the two interest groups. In the first period, the government decides whether to set policy unilaterally or within an international agreement. The interest groups then offer contributions to potentially influence the government's policy choice, and given these contribution schedules, the government sets the policy x_1 .² In the second period, both interest groups can again choose contribution schedules and the government may again choose where to set the policy x_2 . The government's choice of x_2 is restricted with an international agreement in place; the government can set x_2 freely if policy is set unilaterally in the first period.

The policy x_t could be an economic policy such as tariffs, or it could represent a policy such as environmental regulation. The government may care about this policy intrinsically, because it has an agenda of its own. Alternatively, the government may take into account the preferences of core constituencies or the electorate as a whole. Likewise, the government may benefit from contributions because it values discretionary spending or even corruption; it may benefit from contributions because these can be used for electoral campaigns; or contributions take the form of political support more abstractly defined. For the following, which of these interpretations is chosen is inconsequential.

²This modeling choice follows, in particular, Grossman and Helpman (1994).

The government values policy relative to contributions with $\gamma_g > 0$,³ such that the government's per-period utility from policy choice x_t in period t can be written as

$$u_{t,g}(x_t) = -\gamma_g(x_t - x_g)^2 + C_{t,a}(x_t) + C_{t,b}(x_t), \quad (5.1)$$

where $C_{t,i}(x) \geq 0$ for $i \in \{a, b\}$ are the contributions made by interest group i in period t and contributions are possibly a function of the policy choice x_t . Since γ_g determines the value of policy relative to contributions, the term $-\gamma_g(x_t - x_g)^2$ captures the government's policy preference net of contributions. I assume that across time policy preferences are non-fungible, such that in the first period the government fully discounts any utility it receives from the policy choice in the second period. Relaxing this assumption would be a relatively straightforward extension.

The government also chooses whether to set policy unilaterally or through an international agreement with a foreign government. This choice is denoted by ζ , where

$$\zeta = \begin{cases} 0 & \text{if policy is set unilaterally;} \\ 1 & \text{if policy is set internationally.} \end{cases} \quad (5.2)$$

If policy is set unilaterally, the government sets x_t without concern for the policy choices x_t^f by the foreign government. Conversely, the foreign government's policy x_t^f is independent of the domestic policy x_t . By contrast, if the government sets policy through an international agreement, for cooperation to occur the two governments must mutually adjust their policies (Keohane, 1984). Such mutual adjustment implies that the foreign government's policy x_t^f now is a function of the domestic policy x_t . Instead of modeling explicitly this negotiation stage, I assume that, in order to achieve a higher value x_t^f on the foreign government's policy, the

³For $\gamma_g = 0$, the government has no policy preferences of its own and only cares about contributions. Then, the government essentially becomes a 'clearing house' of lobbying interests, a view of policy-making championed by Becker (1983).

domestic government has to provide a higher level x_t on its own policy. For instance, if the two governments are negotiating over a trade agreement, higher values of x_t and x_t^f would imply lower tariffs in both countries. Similarly, in negotiations over an environmental agreement, higher values of x_t and x_t^f would imply stricter regulations. Specifically, I assume that in a negotiated agreement the foreign policy moves with the domestic policy, whereas under unilateral policy-making the foreign policy is constant, such that

$$x_t^f(x_t) = \begin{cases} x^f & \text{if } \zeta = 0; \\ x_t & \text{if } \zeta = 1. \end{cases} \quad (5.3)$$

In the following I label interest group a the anti-cooperation group and group b the pro-cooperation group. Interest group a is concerned about the domestic policy choice, x_t , and can offer contributions to the government in exchange. Hence, its utility function in each period is given by

$$u_a(x_t) = -\gamma_a(x_t - x_a)^2 - C_{t,a}(x_t). \quad (5.4)$$

Interest group b has no immediate concern for its own government's policy choice x_t , but it may be concerned with the foreign government's policy choice, x_t^f . For instance, suppose x_t is a tariff. If interest group a is an import-competing firm or industry, it prefers higher tariffs on its own products, which here would be reflected by lower values of x_t . Group b then could be an exporting firm that prefers lower tariffs imposed by the foreign government. However, absent an international agreement that negotiates and reciprocally adjusts tariffs, group b is not directly concerned with its own government's tariff policy x_t .

Alternatively, suppose x_t is an environmental policy concerned with regulating the discharge of pollutants into a river crossing two countries. Interest group

a may be a polluting industry that is concerned with maintaining low levels of regulation. By contrast, b could represent an environmental interest group. Absent international cooperation, interest group b recognizes that a unilateral change in domestic regulation would have little effect on pollution levels, and hence it has no interest in affecting x_t absent a concomitant change in x_t^f .⁴ In sum, in each period, b 's utility function is given by

$$u_b(x_t) = -\gamma_b(x_t^f(x_t) - x_b)^2 - C_{t,b}(x_t). \quad (5.5)$$

For both groups, γ_i can be interpreted as the ease with which contributions can be made or, conversely, as the intensity of their policy preferences. For most of the following, I will assume that $\gamma_a = \gamma_b = \gamma$ in order to abstract from differences in group characteristics, which are not of central concern here. For future reference, define $\alpha = \gamma/\gamma_g$, which is the preference intensity of interest groups relative to the government. Some of the results in the following can be expressed as a function of α . Moreover, as was the case with the government, I assume that policy preferences are non-fungible across time. Finally, given the previous definitions, and given group a 's status as anti-cooperation group, let its ideal point be $x_a = 0$. For analogous reasons, let $x_b = 1$. None of the following results depend on these two assumptions, but they simplify the exposition and notation. I will call a policy more 'progressive' the larger is the value of x_t .⁵

In the following, I restrict attention to subgame perfect equilibria. I present the equilibrium policies under unilateral policy-making and when policy is set through an international agreement. I then discuss the government's decision over

⁴The difference between pro-cooperation groups that are concerned with the foreign government's policy choice and the domestic policy choice may be important for some aspects of international cooperation (Chaudoin and Urpelainen, 2015); I abstract from this difference in the following.

⁵The government's preferred policy x_g may be outside the interest groups' preferences. In particular, for $x_g > 1$, the government prefers a policy that is more progressive than what either interest group prefers.

whether to set policy unilaterally or through an international agreement, and how the ability of an agreement to lock in policy impacts this decision.

V.1.1 Unilateral policy-making

Under unilateral policy-making, the government cannot affect the foreign government's policy choice. For instance, if trade policy is set unilaterally, a government cannot influence a foreign government's tariffs in a way that would matter for its own tariff regime. To be sure, a government could force a change in tariffs onto foreign governments, such as in European mercantilism during the 17th century or through the threat of sanctions, but this would not affect the government's choice for its own tariff. As a consequence, with unilateral policy-making, the government essentially faces only one interest group, a . The other interest group, b , has nothing to gain from making contributions, since changing the government's choice with respect to the domestic policy x_t does not affect its utility.

With unilateral policy-making, the government can freely set policy in each period, and any choices it makes in the first period do not affect its later policy options. Since the model abstracts from changes to the government's or the interest groups' utility functions over time, the government faces the same choice in each period. The following therefore omits time subscripts to ease notation. If such changes over time were incorporated, of course, the government would obtain an additional reason to refrain from policy commitments. Omitting any such changes allows to isolate the present argument. For the role of uncertainty and the attendant incentives to create more flexible agreements, see, for instance, Koremenos (2001) and Rosendorff (2005).

To derive the equilibrium policies and contributions, note that the government can always decline any contributions and secure a payoff of zero by setting $x = x_g$.

It follows that the anti-cooperation group needs to offer contributions that match this payoff. From equation (5.1) this implies that a needs to provide contributions of at least

$$C_a(x) \geq \gamma_g(x - x_g)^2. \quad (5.6)$$

In equilibrium, a will never make more contributions than necessary, such that condition (5.6) holds with equality.⁶ Substituting this expression into equation (5.4) yields for group a 's utility

$$u_a(x) = -\gamma_a(x - x_a)^2 - \gamma_g(x - x_g)^2. \quad (5.7)$$

The equilibrium policy under unilateral policy-making, \hat{x} , then is determined as

$$\hat{x} = \operatorname{argmax}_x \{-\gamma_a(x - x_a)^2 - \gamma_g(x - x_g)^2\}. \quad (5.8)$$

Solving yields the equilibrium policy and, after substituting the resulting expression into condition (5.6), the equilibrium amount of contributions by group a as described in the following proposition.

⁶It is straightforward to verify that interest group a is always better off making contributions and influencing policy than declining to make contributions and obtaining x_g as policy.

Proposition 5.1 (Unilateral policy-making). *Under unilateral policy-making, the policy and contributions in each period are given by*

$$\hat{x}_t = \frac{\gamma_a}{\gamma_a + \gamma_g} x_a + \frac{\gamma_g}{\gamma_a + \gamma_g} x_g \equiv \hat{x}, \quad (5.9)$$

$$\hat{C}_{t,a} = \frac{\gamma_g \gamma_a^2}{(\gamma_a + \gamma_g)^2} (x_g - x_a)^2 \equiv \hat{C}_a, \quad (5.10)$$

$$\hat{C}_{t,b} = 0 \equiv \hat{C}_b. \quad (5.11)$$

Proposition 5.1 shows that policy will be a weighted average of the ideal points of interest group a and the government g , where the weights are determined by their emphasis on policy relative to contributions. Interest group b does not enter any of these calculations, since interest group b 's preferences do not depend on the domestic policy choice. Consequently, b does not make any contributions.

Since $x_a < x_g$, the equilibrium policy under unilateral policy-making is always to the left of the government's policy ideal point and therefore less progressive than if no interest groups were present. Put differently, the anti-cooperation a biases policy. This dynamic is, of course, familiar from models of the political economy of trade (Grossman and Helpman, 1994): import-competing, protectionist interest groups bias policy towards higher tariffs (here represented by lower levels of x_t). Moreover, the more the government values contributions relative to policy (the lower is γ_g), which possibly is a function of institutional characteristics (Nielson, 2003), the larger this bias will be and the more protectionist trade policies arise. The following section, which considers policy-making with an international agreement, shows how this can change in the presence of an international agreement.

V.1.2 Policy-making with an international agreement

If the government sets policy in an international agreement it can negotiate a change in the foreign government's policy x_t^f , which affects group b 's utility. This possibility, in turn, invites lobbying by group b . As shown in the following, the presence of an international agreement, by changing the domestic political dynamics, thus changes a government's domestic policy choices.

Suppose the international agreement locks in the policies x_1 and x_1^f after the first round.⁷ The literature advances several mechanisms of enforcement to lock in policies. For instance, governments may suffer large, essentially automatic reputational costs for renegeing on international commitments (see, e.g., Tomz 2007; Guzman 2008). Similarly, and relatedly, an influential literature draws on the concept of 'audience costs' to suggest that in particular democratic leaders pay large costs for not following through on promises (Fearon, 1994), which in turn has been argued to help enforce international agreements (Simmons, 2010). Just as prominently feature institutional mechanisms, such as dispute settlement bodies (Lacarte-Muró and Gappah, 2000), which in turn can impose sanctions or reputational costs (Brewster, 2013), and punishment or sanctioning strategies (Thompson, 2010).

If the policy is locked in externally, in the second period the policy cannot be moved in either direction but is fixed at x_1 . In the first period, the government's utility function over both time periods is therefore given by⁸

$$u_g(x_1) = -\gamma_g(x_1 - x_g)^2 + C_{1,a}(x_1) + C_{1,b}(x_1) + C_{2,a}(x_1) + C_{2,b}(x_1), \quad (5.12)$$

⁷If this were to be modeled explicitly, it would be sufficient to assume that setting a policy $x_2 \neq x_1$ in the second period results in a sufficiently large cost to the government.

⁸Recall that, at the start of the first period, both the government and the interest groups fully discount the utility from policy in the second period.

and similarly for both interest groups:

$$u_a(x_1) = -\gamma_a(x_1 - x_a)^2 - C_{1,a}(x_1) - C_{2,a}(x_1), \quad (5.13)$$

$$u_b(x_1) = -\gamma_b(x_1 - x_b)^2 - C_{1,b}(x_1) - C_{2,b}(x_1). \quad (5.14)$$

To find the equilibrium policies and contributions in the presence of two interest groups, I follow the standard approach and, in addition to equilibria that are subgame perfect, restrict attention to truthful contribution schedules.⁹ The equilibrium policy and contributions are determined as described in the following proposition and, together with all other results, derived in the appendix.

Proposition 5.2 (Agreement with commitment). *If policy is set in an international agreement and the policy is locked in, the policy and contributions in each period are given by*

$$\tilde{x} = \frac{\gamma_g}{\gamma_a + \gamma_b + \gamma_g} x_g + \frac{\gamma_a}{\gamma_a + \gamma_b + \gamma_g} x_a + \frac{\gamma_b}{\gamma_a + \gamma_b + \gamma_g} x_b, \quad (5.15)$$

$$\tilde{C}_{1,a} = \gamma_g \left[(\tilde{x} - x_g)^2 - (\tilde{x}_b - x_g)^2 \right] + \gamma_b \left[(\tilde{x} - x_b)^2 - (\tilde{x}_b - x_b)^2 \right], \quad (5.16)$$

$$\tilde{C}_{1,b} = \gamma_g \left[(\tilde{x} - x_g)^2 - (\tilde{x}_a - x_g)^2 \right] + \gamma_a \left[(\tilde{x} - x_a)^2 - (\tilde{x}_a - x_a)^2 \right], \quad (5.17)$$

$$\tilde{C}_{2,a} = \tilde{C}_{2,b} = 0, \quad (5.18)$$

where \tilde{x}_a and \tilde{x}_b are defined in the appendix and are the policy implemented if only interest group a and b , respectively, provides contributions to the government.

The policy defined in equation (5.15) takes into account group b 's interests, which sets it apart from the policy under unilateral policy-making described in equation (5.9). Larger values of the equilibrium policy \tilde{x} imply policy that is further

⁹See, e.g., Grossman and Helpman (1994); Acemoglu and Robinson (2006); Gehlbach (2006).

away from group a 's ideal point and, moreover, a policy that moves further beyond the policy under unilateral policy-making, \hat{x} . As such, larger values of \tilde{x} can be interpreted as deeper cooperation in the sense of Downs, Rocke and Barsoom (1996). Conversely, lower values of \tilde{x} would be tantamount to more shallow agreements.

Since $x_b > x_a$, taking into account group b 's interests should result in policies that are more progressive than the unilateral policy. Indeed, this is not only a reasonable property of \tilde{x} relative to \hat{x} , but the requirement that \tilde{x} should exceed \hat{x} could be interpreted as an international participation constraint: if the condition fails, the policy in an international agreement would fall behind the policy set in the unilateral case, and as such the foreign government would have had little reason to participate in an agreement that requires it to make policy adjustments of its own. The most shallow, feasible agreement, then, would be one that results in $\tilde{x} = \hat{x}$: an agreement that fails to move beyond what the government would do in the unilateral case. Some argue that such agreements are quite frequent, because they will be easy to implement (Downs, Rocke and Barsoom, 1996); at the same time, of course, such agreements will have no consequences for changing state behavior relative to the absence of an agreement.

Yet, such agreements are hard to come by in the context here.¹⁰ A sufficient condition for \tilde{x} to move beyond \hat{x} is that the government's ideal point x_g is in-between the ideal points of the anti-cooperation and the pro-cooperation groups – or, put differently, that the interest groups have positions that are more extreme than the government's position. The following lemma describes the condition more generally.

¹⁰Indeed, as will be shown later, such an agreement can never make the government better off than unilateral policy-making.

Lemma 1 (International participation constraint). *The policy negotiated in an international agreement is more progressive than the unilateral policy whenever*

$$x_g \leq 1 + \alpha. \quad (5.19)$$

When the condition fails, the agreement's equilibrium policy would fall behind the equilibrium policy under unilateral policy-making.

Since $\alpha > 0$, as long as the government is not more progressive than *both* interest groups, the policy set in an agreement is more progressive than the policy set in the unilateral case, due to the influence of the pro-cooperation group's lobbying. Conversely, when the condition fails, the government is sufficiently more progressive than both interest groups that the additional lobbying by the pro-cooperation group will actually make it more difficult for the government to pull policy towards its own desired level.

Another feature of the equilibrium policy \tilde{x} is that its relationship to γ_g , the government's emphasis on policy relative to contributions, may be reversed relative to unilateral policy-making. Under unilateral policy-making, larger values of γ_g always imply more progressive policies, that is, higher values of \tilde{x} . As noted, this attribute mirrors prominent results in the literature on, for instance, trade politics. Governments that pay more attention to interest group support, relative to policies, are typically argued to pursue more protectionist trade policies in order to cater to import-competing firms. At least since Rogowski (1987), electoral institutions have been found to be a key determinant of the willingness to substitute contributions for policy.¹¹ With an international agreement, the relationship between domestic institutions and policy outcomes can be reversed, since now an increase in γ_g no

¹¹For similar examples, see also Nielson (2003); McGillivray (2004); Grossman and Helpman (2005); Ehrlich (2007).

longer necessarily translates into an increase in the policy, as described in the following lemma.

Lemma 2 (Reversing the effect of γ_g). *The policy negotiated in an international agreement is more progressive when γ_g decreases when*

$$x_g \leq \frac{1}{2}. \quad (5.20)$$

Under this condition, an increase in the government's emphasis on contributions relative to policy results in more progressive policies \bar{x} , which reverses the relationship between γ_g and \hat{x} under unilateral policy-making.

Put differently, institutions that induce governments to value contributions over policy may result in lower tariffs, rather than higher tariffs, a result that mirrors the outcome in Chapter II. The result also squares with Dai (2006), who shows that domestic institutions may affect the responsiveness of governments to interest groups, but that the effect of institutions on compliance is contingent on the preferences of those interest groups. The result further may help explain why the literature on electoral institutions and trade produced such ambiguous results. Electoral institutions that benefit interest groups not only benefit protectionist interest groups; in the context of reciprocal trade agreements, which invite lobbying by exporters, they also benefit interest groups that support free trade policies domestically in exchange for market access abroad. As a consequence, the link between electoral institutions and average tariff rates breaks down. The result further demonstrates a specific effect of international institutions: they can reverse the effects of domestic institutions on policy outcomes compared to policy-making under autarky, a point emphasized by West and Lee (2014).

While the international agreement will, in general, shift policy towards higher

levels, it also has an effect on the lobbying contributions. Most notably, the pro-cooperation group now makes positive contribution as well, because it has a stake in the issue. This, in turn, induces a change in the contributions by the anti-cooperation group. It no longer has to simply compensate the government for moving policy away from its desired level x_g . With the pro-cooperation group in the game, the government gained a new outside option: instead of implementing its own policy x_g , the government has the option of accepting contributions from the pro-cooperation only and foregoing any contributions from the anti-cooperation group. This effect is reflected in equation (5.16). The first term in square brackets arises from the government's policy preference; the second term in square brackets stems from the government's opportunity cost of accepting a 's contributions, which in turn is linked to the second interest group's policy preferences. Indirectly, the anti-cooperation group needs to take into account the pro-cooperation group's utility, for which it has to compensate the government.

The additional lobbying contributions by the pro-cooperation group can be particularly costly for the anti-cooperation group: despite and in addition to policy being moved away from its own preferred policy, it now may have to provide higher contributions than in the unilateral case. Yet, without providing any contributions, policy would be pulled even further away from its ideal point x_a , and hence the group has no choice but to increase its contributions. The following lemma describes under what circumstances contributions by the anti-cooperation group increase, relative to unilateral policy-making.

Lemma 3 (Contributions by the anti-cooperation group). *The equilibrium contributions by the anti-cooperation group increase under an international agreement, relative to unilateral policy-making, if*

$$\left(\tilde{x} - x_g\right)^2 + \alpha \left(\tilde{x} - x_b\right)^2 \geq \left(\tilde{x}_b - x_g\right)^2 + \alpha \left(\tilde{x}_b - x_b\right)^2 + 2\left(\hat{x} - x_g\right)^2, \quad (5.21)$$

which is the unshaded area graphed in Figure 5.1.

Figure 5.1. displays condition (5.21) and shows where interest group a 's contributions increase relative to the unilateral case in relationship to α and x_g . In the unshaded area, interest group a makes higher contributions in the presence of an international agreement than under unilateral policy-making, yet it receives a policy further away from its ideal point. In the shaded region, contributions from group a are lower with an international agreement than in the unilateral case. The triangular area beneath the dotted line shows the region where the international participation constraint, given by condition (5.19), fails. This leaves an area above the dashed line where an international agreement would both be feasible (because condition (5.19) holds) and group a would be able to reduce its contributions to the government; however, in this area group a would still obtain a policy that is worse than what it would obtain under unilateral policy-making.

One interpretation of these results is that international agreements not only may move policy away from the unilateral equilibrium. They also reinforce domestic political conflict over issues by pitching interest groups against each other, which in turn drives up campaign expenditures, lobbying contributions, or political support activities by the affected interest groups. This result squares well with a recent literature that emphasizes how international agreements can cause domestic contestation (see, e.g., Chaudoin 2014b). In contrast to this literature, however, the contestation of the agreement is not about compliance once the agreement is formed,

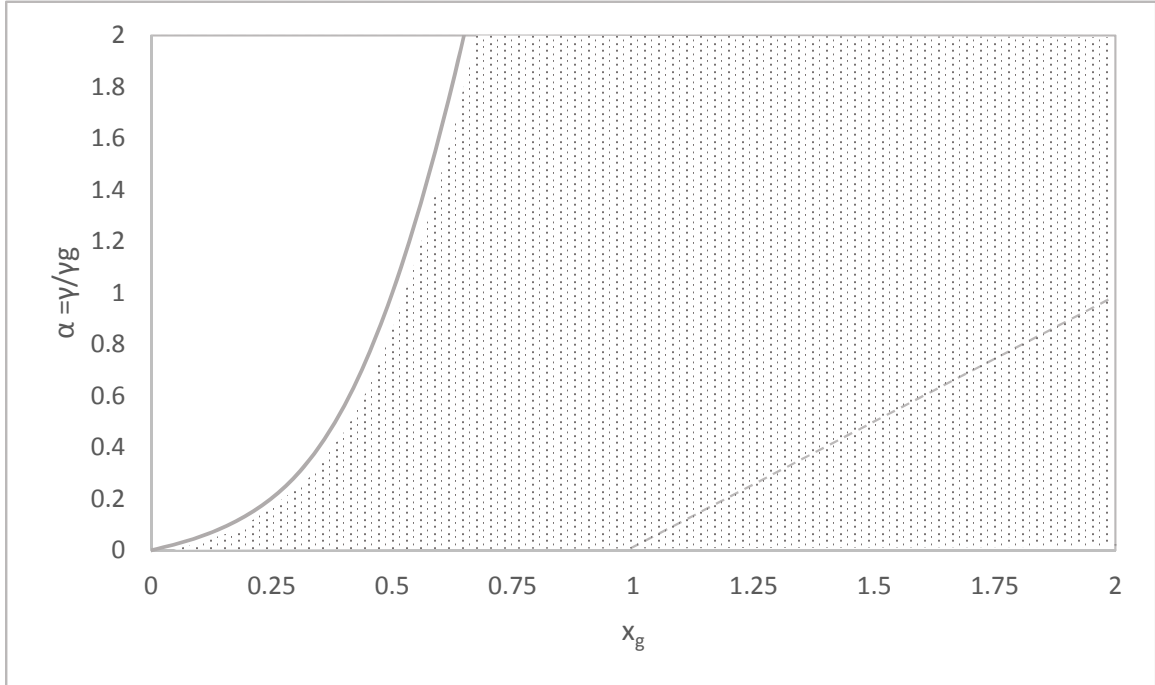


Figure 5.1.: Comparison of anti-cooperation group's equilibrium contributions: Comparison of equilibrium contributions by interest group a as a function of government ideal point, x_g , and relative preference intensity, $\alpha = \gamma/\gamma_g$, for unilateral policy and under an international agreement. To the left of the solid line, in the unshaded area, contributions under an international agreement exceed the contributions under unilateral policy-making. In the shaded area, to the right of the solid line, contributions under unilateral policy-making exceed contributions under an agreement. The dashed line in the lower right corner denotes the international participation constraint defined in condition (5.19): in the area under the dashed line, the policy under an international agreement would fall behind the unilateral policy ($\tilde{x} < \hat{x}$), which renders an international agreement infeasible. Thus, in the unshaded area, interest group a makes higher contributions and receives a policy further away from its ideal point than under unilateral policy-making; in the shaded area above the dashed line, the interest group makes lower contribution in the presence of an agreement but also receives a policy further away from its ideal point.

but it occurs at the time the agreement is negotiated. Moreover, the following discussion will highlight two important aspects of this contestation. First, if the agreement locks in the policy, contestation will only occur during the negotiation, but not once the agreement is in place. This effect, in turn, disadvantages the government. Second, this contestation can make international agreements attractive to governments, because they can extract more contributions from interest groups that are in competition with each other.

V.1.3 Unilateral vs international agreement

For the government, the contributions and policies described in Propositions 5.1 and 5.2 matter for its decision of whether to set policy unilaterally or through an international agreement. The international agreement invites lobbying by the pro-cooperation interest group, which has two effects. First, under the condition in equation (5.19), this additional lobbying moves the equilibrium policy upwards, which can benefit the government in terms of its own policy preferences (net of contributions), as described in the following lemma.

Lemma 4 (Policy preferences of the government). *The equilibrium policy under an international agreement is closer to the government's ideal point than the equilibrium policy under unilateral policy-making if*

$$\frac{\alpha(\alpha + 1)}{\alpha^2 + 4\alpha + 2} < x_g < \frac{\alpha + 1}{\alpha}, \quad (5.22)$$

which is the unshaded area graphed in Figure 5.2.

Figure 5.2. graphs this condition and shows under what circumstances the government is better off with the policy under an international agreement than with the unilateral policy in terms of its policy preferences and net of any contributions.

As the Figure shows, the government only prefers the unilateral policy when its ideal point is close to that of the anti-cooperation group, a , or when its ideal point is far beyond even the pro-cooperation group's ideal point. Under a wide range of circumstances, the government is better off with an international agreement in terms of its policy preferences. Even for very large values of α , the government prefers the policy from an international agreement when its ideal point is closely aligned with that of the pro-cooperation group.

The result is consistent with common arguments of why governments look to international institutions (Keohane, 1984). The reason why an international agreement is able to affect policy choices is not because it enforces or implements international norms. Instead, the agreement changes the environment in which domestic political decisions are made. With the agreement, domestic pro-cooperation groups have an incentive – and, indeed, an ability – to ask for adjustments of domestic policies that turn into reciprocal concessions by negotiating partners, which benefits the domestic group in turn. In this sense, international agreements indeed enable governments to obtain more preferred policies. Returning to the case of trade policies, a large literature argues that the executive often has preferences that are relatively supportive of free trade (Nielson, 2003). If the anti-cooperation group a represents an import-competing, protectionist interest group, then the additional lobbying by the pro-cooperation interest group b can move policy towards a policy that is more in line with the executive's preferences. Thus, at least in terms of its policy preferences, the government gains from inviting the additional lobbying by interest group b , which in turn can make an international agreement attractive to the government.¹²

¹²It is worth emphasizing that the change in the equilibrium policy does not arise because the government uses an international agreement as 'political cover,' as has been argued to be the case with territorial disputes (Huth, Croco and Appel, 2011). Instead, the agreement activates a second interest group, which upsets the existing political equilibrium under unilateral policy-making.

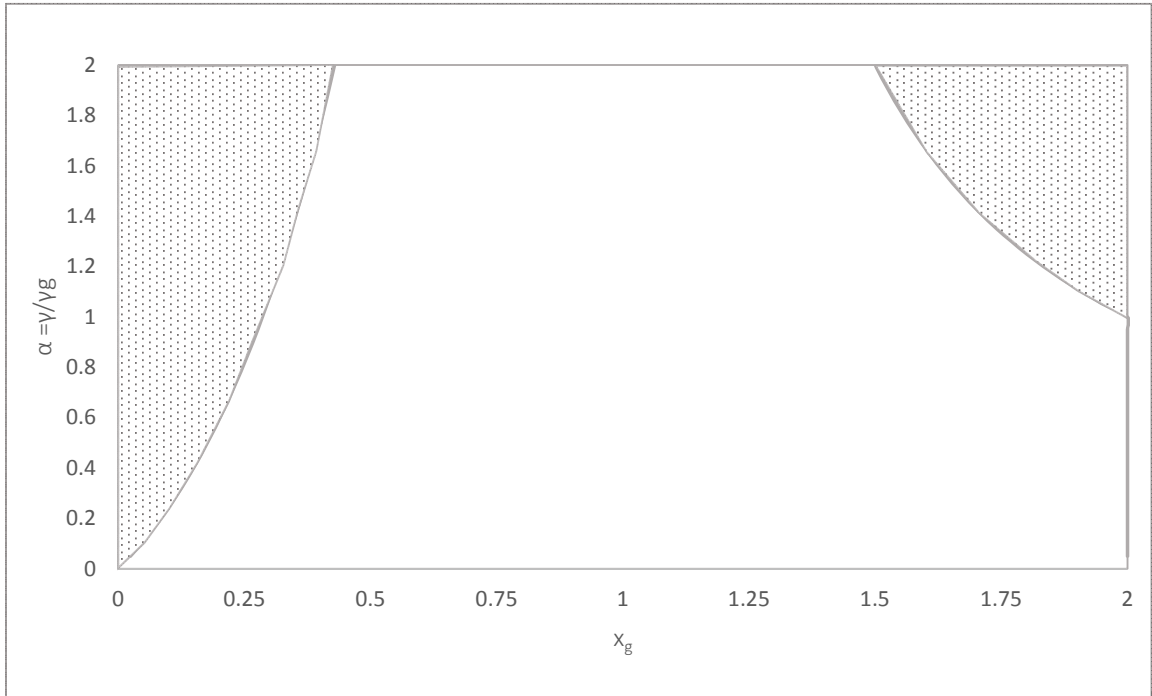


Figure 5.2.: Government's policy preferences: Comparison of government payoff from policy, net of contributions, as a function of government ideal point, x_g , and relative preference intensity, $\alpha = \gamma/\gamma_g$. In the shaded area, the government prefers the unilateral policy to the policy under an international agreement, leaving aside changes in contributions. In the unshaded area, the government is better off with the international agreement in terms of its policy preferences: in the unshaded area, $-\gamma_g(\tilde{x} - x_g)^2 > -\gamma_g(\hat{x} - x_g)^2$, where \hat{x} and \tilde{x} are defined in Propositions 5.1 and 5.2 and define the policy when set unilaterally and under an international agreement, respectively.

The second effect of the additional lobbying is that the government now may receive higher total contributions from the two interest groups in the first period. The two interest groups are caught in an equilibrium that requires them to spend more than if only one of them was present. This clearly hurts the anti-cooperation interest group relative to the case of unilateral policy-making: not only is policy pulled away from its preferred outcome, but the interest group now is forced to spend relatively more to prevent policy from being pulled away even further.¹³

This additional lobbying can make the government better off with an international agreement than without one, even if the resulting policy is further away from the government's ideal point than what would have been obtained with unilateral policy-making. The following lemma describes the conditions under which the government chooses to set policy in an international agreement, rather than unilaterally.

Lemma 5 (Unilateral policy-making versus commitment). *The government chooses an international agreement that locks in x_t if*

$$x_g < \frac{1 + a + \sqrt{1 + 5a + 8a^2 + 4a^3}}{3 + 4a}, \quad (5.23)$$

which is the unshaded area graphed in Figure 5.3.

Condition (5.23) is depicted in Figure 5.3. In the unshaded area in Figure 5.3., the government is better off with the international agreement; in the shaded area, the government is better off with the unilateral policy. Note that the international participation constraint, defined in condition (5.19) and in Figure 5.3. indicated by the dashed line in the lower right corner, never binds: when the constraint would

¹³As an instructive case, consider the symmetric case where $x_g = \frac{1}{2}(x_a + x_b)$. Then, for $\gamma_a = \gamma_b$, the equilibrium policy would be the same as if no interest group at all was present. Yet, in order to prevent policy from being pulled in either direction, each group has to provide positive contributions to the government, a result familiar from Grossman and Helpman (1994).

bind, the government would strictly prefer unilateral policy-making anyways. Hence, shallow agreements, which would not affect a government's policy choice compared to unilateral policy-making, can never arise; any negotiated agreement must effectively move the equilibrium policy away from the policy under unilateral policy-making.

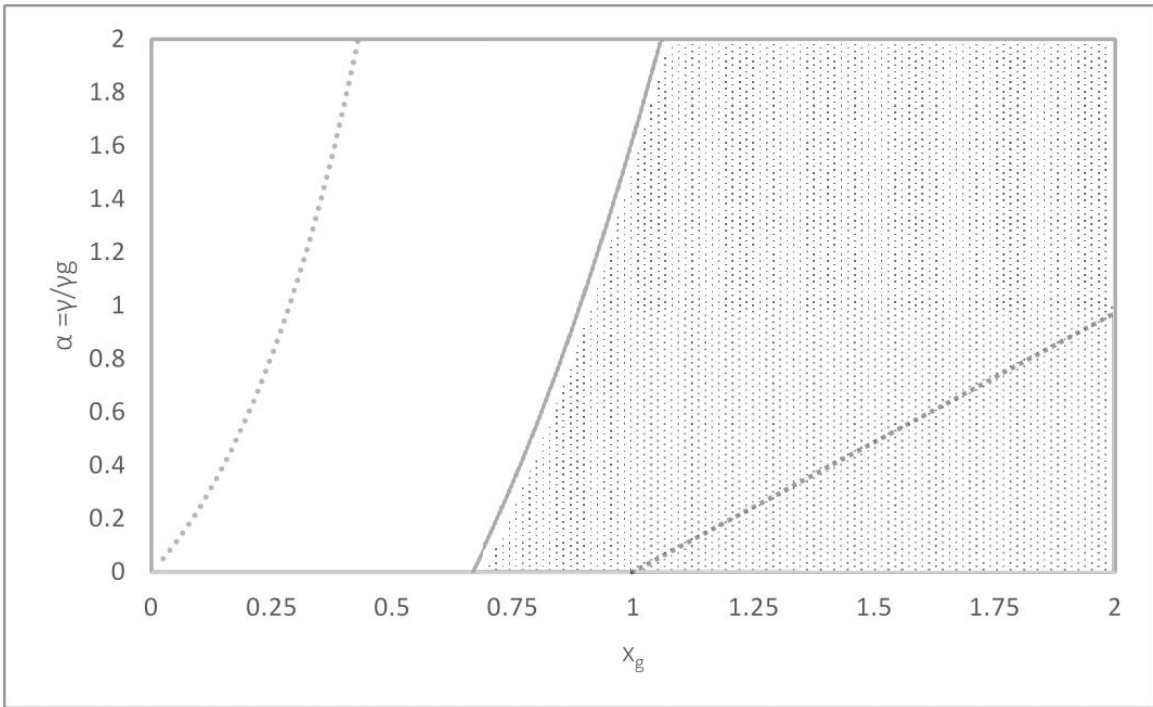


Figure 5.3.: Government's utility from unilateral policy-making and international agreement: In the unshaded area, the government prefers an international agreement to unilateral policy-making, taking into account both the change in policy and the change in contributions. In the shaded area, the government prefers the discretion under unilateral policy to an international agreement. The dashed line in the lower right corner denotes the international participation constraint defined in condition (5.19). In the area under the dashed line, the policy under an international agreement would fall behind the unilateral policy ($\bar{x} < \hat{x}$), which renders an international agreement infeasible. In the area to the left of the dotted line, the government prefers the policy under unilateral policy-making to the policy under an international agreement, but the increase in contributions under an agreement more than compensates for this loss.

Comparing Figure 5.3. to Figure 5.2. shows that under some circumstances, the government is better off with an international agreement despite a deterioration of the policy from the government's perspective. In the unshaded area to the left of the upward-sloping dotted line, the government prefers the policy under unilateral policy-making to the policy under an international agreement. In this case, the pro-cooperation group is sufficiently progressive that its involvement in the political bargaining shifts policy away from the government's preferred policy. At the same time, its involvement more than compensates the government for this deterioration

through the increase in contributions from both interest groups.

One attribute that stands out in Figure 5.3. is the wide range of cases in which the government prefers retaining policy discretion over an international agreement that locks in the policy. For small to moderately large values of α , the government prefers policy discretion even when its own ideal point is in-between the ideal points of the two interest groups. Most notably, Figure 5.3. shows that the government prefers unilateral policy-making when its own interests align with that of the pro-cooperation group, even though in this case the government would be able to obtain a policy close to its own ideal point when setting policy in an international agreement. Hence, an international agreement is particularly unattractive for a government when its own interests are similar to that of an interest group that benefits from the international agreement.

One reason for this result is that, if the government sets policy through an international agreement, it locks in the policy and as a consequence renders lobbying by the two interest groups unnecessary in the future. This benefits the two interest groups, as they will no longer have to make contributions that, in the extreme case, offset each other completely. To the extent that lobbying tends to be less productive than other activities (Bhagwati, 1982), this may be viewed as an attractive feature of international agreements. Essentially, an international agreement, by taking an issue off the table, solves a commitment problem among interest groups. (Notably, however, this benefit comes only after a period of heightened conflict among interest groups over where to set policy.) They can now refrain from making any contributions. For a government, this is a problematic turn: while the policy is now locked in, maybe even in a place preferred by the government, the government also foregoes any contributions in the future, which in turn reduces the attractiveness of a commitment.

To further underscore how this result is caused by the agreement's attribute

of locking in policy, consider an agreement that fails to lock in policy. As before, an agreement allows governments to mutually adjust policies. But the agreement provides no mechanism to lock in policies or to enforce the negotiated policies. Then, each government could, at any time, re-adjust its policies and, by way of reciprocal punishments, respond to adjustments by its partner with adjustments of its own. This possibility, in turn, requires pro-cooperation groups to maintain support for their own government, since otherwise cooperation would cease. For instance, in the case of a trade agreement, a government may respond to a violation of an agreement by its trading partner by a violation of its own, such as by raising tariffs. Anticipating this, pro-cooperation groups in the partner country will lobby against trade violations. Such a dynamic unfolded over the steel tariffs imposed by United States President George W. Bush. The European Commission quickly threatened to retaliate with protectionist measures of its own, targeting politically relevant export industries in the United States – most prominently, oranges from Florida. Not only was the governor of Florida at the time the brother of President George W. Bush, Florida also was a key state in the upcoming midterm elections. As an observer put it, “[the Europeans] are trying to retaliate where they think they can get the maximum amount of political leverage” (Chicago Tribune, April 5, 2002). It did not take long until the United States administration gave in to the political pressure from these key interest groups. This instance provides an example of how pro-cooperation groups offset political pressure from anti-cooperation groups, and how the possibility to adjust policies allowed governments to extract political support. More generally, the following proposition describes the equilibrium policy and contributions with an agreement that fails to lock in policies.

Proposition 5.3 (Agreement without commitment). *If policy is set in an international agreement and the policy is not locked in, the policy and contributions in each period are given by*

$$\tilde{x} = \frac{\gamma_g}{\gamma_a + \gamma_b + \gamma_g} x_g + \frac{\gamma_a}{\gamma_a + \gamma_b + \gamma_g} x_a + \frac{\gamma_b}{\gamma_a + \gamma_b + \gamma_g} x_b, \quad (5.24)$$

$$\tilde{C}_a = \gamma_g [(\tilde{x} - x_g)^2 - (\tilde{x}_b - x_g)^2] + \gamma_b [(\tilde{x} - x_b)^2 - (\tilde{x}_b - x_b)^2], \quad (5.25)$$

$$\tilde{C}_b = \gamma_g [(\tilde{x} - x_g)^2 - (\tilde{x}_a - x_g)^2] + \gamma_a [(\tilde{x} - x_a)^2 - (\tilde{x}_a - x_a)^2], \quad (5.26)$$

where \tilde{x}_a and \tilde{x}_b are defined in the appendix and are the policy implemented if only interest group *a* and *b*, respectively, provide contributions to the government.

The proposition shows that the equilibrium policy remains the same as before: in this specific example, the ability of an agreement to enforce policies does not affect the depth of cooperation. However, contributions by the two interest groups now have to be made in each period. This effect makes the agreement more attractive to the government, which, in turn, can induce some types of government to negotiate an international agreement rather than setting policy unilaterally.

Figure 5.3. shows several key results. First, the lightly shaded area depicts the area where the government prefers unilateral policy-making over an international agreement. As the Figure shows, this area is noticeably smaller than in the case of an agreement that locks in policy. In fact, as long as the government's ideal point is located in-between the two interest groups (which could be the case, for instance, if the government internalizes some of the preferences of both interest groups, or if the government's ideal point represents the median voter and interest groups are at the extremes of the electorate), an international agreement will always be preferable to unilateral policy-making, regardless of the level of α .

Second, the darker shaded area shows where an international agreement that fails to lock in policy is chosen by the government over unilateral policy-making, whereas unilateral policy-making is chosen over an agreement that locks in policy. Thus, the darker shaded area shows where an agreement without commitment is feasible domestically, whereas an agreement that locks in policy is not. Moreover, this area covers those cases where the government's ideal point is close to that of the pro-cooperation group. Hence, when the government's interests align with those of the pro-cooperation group, the *absence* of enforcement mechanisms can be key to the feasibility of international agreements – not because these agreements allow governments to respond to new information or random shocks, but because they don't have to give up a previously salient issue. Put differently, if an agreement locks in a policy, it can create a domestically driven cooperation problem for governments, which in turn can make governments shy away from entering such agreements in the first place.

With regard to trade agreements, this indicates that governments may have difficulties switching from protectionist interest groups to exporters as their support base if trade agreements were to lock in policies. Once other countries liberalize their markets, exporters have little reason to continue supporting their government: their own government can't retract the foreign government's decision to open its market. By contrast, maintaining protectionist policies, and not entering a trade agreement, would allow the government to continuously extract rents from import-competing groups.

Pro-cooperation groups therefore would not be able to substitute for anti-cooperation groups if it were not for other ways the government is needed in applying and enforcing an agreement. On the one hand, this dynamic might explain why trade policies tend to support protectionism, rather than free trade, or as Rodrik (1997, p. 1476) put it, "there is no country [...] where the net effect of commercial

policies is to expand rather than contract trade.” On the other hand, the argument offers a domestic political rationale for why governments want to maintain some form of involvement in international institutions. In the case of most trade agreements, for instance, only governments can initiate trade disputes and thereby challenge foreign trade barriers, which benefits domestic pro-cooperation groups. The need for the government to participate in the enforcement of international agreements through trade disputes, in turn, provides a rationale for pro-cooperation groups to continue supporting the government through contributions.

This implies that calls for agreements with stronger, more credible, and indeed automatic enforcement mechanisms can be problematic from the point of view of governments, and agreements such designed may inhibit cooperation. This contrasts with the predominant view in the literature, which suggests that without strong enforcement mechanisms, attempts at cooperation may break down during the negotiating phase, or even before that (Fearon, 1998). Thus, a lack of enforcement is viewed as a prime obstacle to cooperation: because other states will anticipate the temptation to defect from such an agreement, agreements without enforcement are not viable. In the present argument, by contrast, international agreements are unattractive to governments not because of a lack of enforcement, but, when they are perfectly enforced, because of a lack of domestic political incentives to enter such agreements. Indeed, the argument suggests that it is the *inability* to commit and enforce agreements that makes them attractive to some governments.

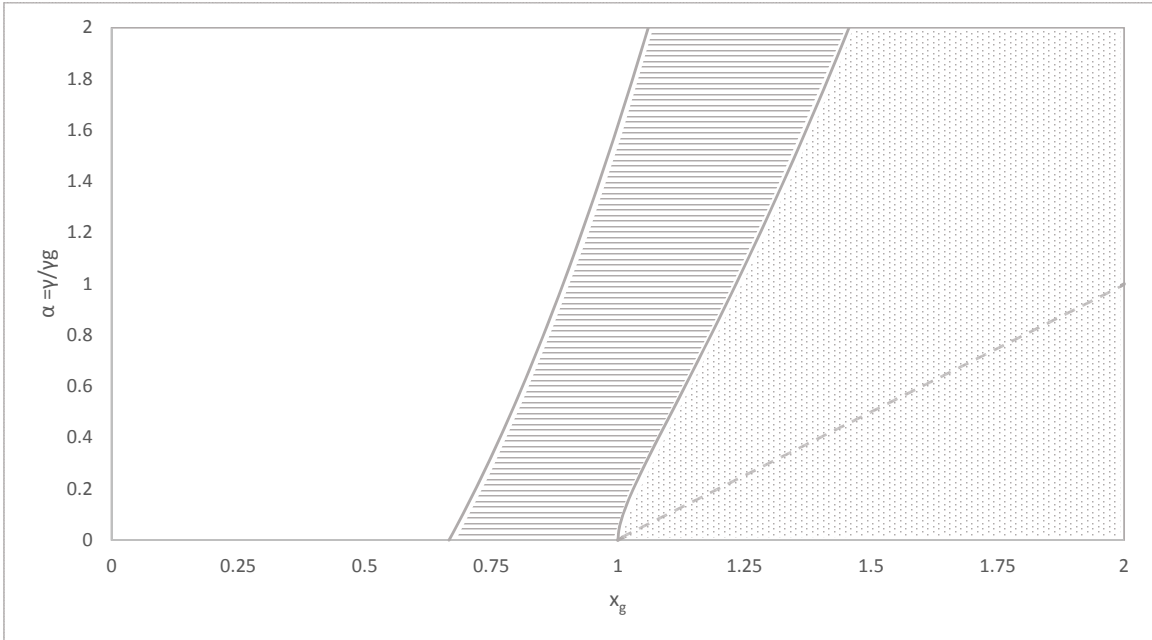


Figure 5.4.: Locked in versus flexibility: Comparison of the government's payoff when setting policy unilaterally, through an international agreement that locks in policy, or through an international agreement that lacks enforcement. The dashed line in the lower right corner denotes the international participation constraint defined in condition (5.19): in the area under the dashed line, the policy under an international agreement would fall behind the unilateral policy ($\tilde{x} < \hat{x}$), which renders an international agreement infeasible. In the lightly shaded area, unilateral policy-making is preferable to an international agreement that fails to lock in policy. In the darker shaded area, an international agreement that fails to lock in policy is chosen by the government over unilateral policy-making, but unilateral policy-making is chosen over an agreement that locks in policy. In the unshaded area, the government prefers an international agreement (regardless of whether it locks in policy) to unilateral policy-making.

V.2 Conclusion

The same conditions that make international agreements attractive in the first place – the existence of pro-cooperation groups that allow governments to move policy in a desired direction – also make strong international agreements, which lock in policies, unattractive. Conversely, international agreements that lack external enforcement mechanisms, and thereby require the continued political support from pro-cooperation groups, are attractive to governments not despite, but

because of the presence of domestic groups supporting international cooperation. As Donald Leon Blankenship, a United States industrialist, quipped in an interview with the New York Times in 2009, “I’ve been around [...] long enough to know that politicians don’t stay bought.” International agreements that effectively tie a government’s hands ensure that politicians don’t need to be bought anymore once the agreement is in place – which is attractive to interest groups, but problematic for a government interested in collecting contributions. An agreement without the ability to tie the government’s hands, on the other hand, ensures that lobbyists need to keep buying politicians in the future as well. The chapter therefore suggests an incompatibility between international and domestic enforcement mechanisms, since the former render the latter redundant. By contrast, an agreement that fails to lock in policy has (at least) two potential benefits to a government. By changing the domestic political equilibrium, it allows moving policy away from the status quo, and by reinforcing the domestic political struggle over policy choices, it increases contributions from domestic interest groups.

An alternative interpretation for some of these results is that governments may use international agreements to lock in their successors in office (see, e.g., Abbott and Snidal 2000; Moravcsik 2000; Ginsburg 2005). This argument has been applied, for instance, to propose that right-wing governments use international economic agreements, such as bilateral investment treaties or trade agreements, to lock in economic reforms and constrain potential left-wing successors. Most generally, as Abbott and Snidal (2000, p. 439) put it, “a government less certain of its longevity may seek to bind its successors through international legal commitments.” One problem with this argument is that, if a government locks in the policy, it removes the issue from the electoral agenda and hence gives up one reason to be elected by supporters. For instance, constituents of right-wing parties no longer have to support a specific party in government to obtain the desired policy once it is

locked in credibly through an international agreement. Consequently, a right-wing party in government faces a trade-off between implementing its policy preferences, which an agreement will allow it to do, and securing political support in the future, which an agreement may frustrate. Of course, if the government is certain to lose office, the latter concern becomes obsolete; but if there is a chance to maintain office, it may become the more relevant. In this case, it becomes unattractive for governments to tie their and their successors' hands, despite the match between an agreement's goals and their own policy preferences.¹⁴

The argument presented in this chapter makes a number of simplifying assumptions which result in rather strong results – most notably, that an agreement with commitment can never be more attractive to a government than an agreement without commitment. Yet, there are a number of reasons why governments might prefer agreements with commitment. For instance, if the government expects a change in preferences in the future – either on its own part or of its domestic interest groups – locking in a policy might become attractive. Even in this case, however, the central tenet of the argument in this chapter would remain: locking in a policy and tying its own hands would undermine the government's ability to obtain the support of interest groups in the future on that particular issue, which would work against any gains from a commitment.

It would also be worthwhile to model more explicitly the dynamics of policy-making over time, in particular with interest groups that are constrained in their resources. In the present model, interest groups can promise contributions in accordance with their marginal benefit from a policy change, but there are no limitations on the amount of these contributions. This can clearly become a problematic assumption, especially in the context of trade policies. Import-competing firms that lose market shares and profits as a consequence of a reduction

¹⁴See Betz (2014) for a model that considers these trade-offs with two office-seeking parties in the context of central bank independence.

in tariffs negotiated in an international agreement may eventually be unable to stay in business. This results in a reduction in protectionist pressures and the potential for further trade liberalization, or what has been labelled the ‘juggernaut effect’ (Baldwin and Robert-Nicoud, 2008). From the unilateral perspective, this is a straightforward effect of trade liberalization. It becomes more complicated, however, once the relationship between two governments is considered: because there are fewer pressures in the foreign country to raise trade barriers, the pro-cooperation group again loses incentives to support compliance by the domestic government – the foreign government no longer can credibly threaten to move tariffs upwards, which makes compliance by the home government obsolete. This, of course, further compounds the negative effects on the home government of losing any contributions from the anti-cooperation group that left the (political and economic) market.

Finally, agreements typically don’t lock in policies at fixed points, but set bounds on a government’s policy choices.¹⁵ For instance, in many environmental agreements, governments commit to reduce the emission of pollutants to a certain upper bound, but are free to produce fewer pollutants than agreed to. In most trade agreements, governments commit to upper bounds on their tariffs, but governments are again free to set tariffs lower than these bounds. An extension of the model in this paper would be worthwhile to acknowledge this fact. Then, under some circumstances, governments can continue to gain support from anti-cooperation groups in order to prevent a further change in policy away from their ideal point. For instance, in environmental agreements, pollutant industries will try to prevent regulations that are stricter than what international standards suggest, and in trade agreements, protectionist firms will try to prevent a further erosion of tariff barriers. This effect can create incentives for governments to implement agreements

¹⁵See Amador and Bagwell (2013) for a discussion of policy-making under delegation, where policies are capped by bounds.

that are relatively shallow, because they then can credibly threaten domestic anti-cooperation groups to unilaterally change their policies to a level beyond their international obligations. By contrast, this effect disappears if an international agreement could commit governments to not surpass their international legal obligations – that is, if the international agreement ruled out ‘overachievers’ and ‘frontrunners.’ Contrary to intuition, therefore, it is not the inability of governments to relax their international obligations, but their ability to unilaterally surpass them, which makes shallow agreements more attractive. This is potentially most relevant for multilateral agreements, where governments often negotiate up to least common denominator and leave it open to individual governments to be frontrunners who move beyond the agreement’s terms.

V.A Appendix

V.A.1 Agreement with full commitment

Solving backwards, note that neither interest group provides contributions to the government in the second period: since the policy is fixed at x_1 regardless of the level of contributions, both groups are better off ceasing any contributions. At the same time, when negotiating the agreement, the government needs to take into account that the policy will be locked in, which in turn forces the interest groups to take this into account. The government's maximization problem in the first period therefore is

$$\max_x \{-\gamma_g(x - x_g)^2 + C_{1,a}(x) + C_{1,b}(x)\}. \quad (5.27)$$

The first-order condition yields

$$-2\gamma_g(x - x_g) + \frac{\partial C_{1,a}(x)}{\partial x} + \frac{\partial C_{1,b}(x)}{\partial x} = 0. \quad (5.28)$$

From the interest groups' utility functions it follows that for $i \in \{a, b\}$,

$$\frac{\partial C_{1,i}(x)}{\partial x} = -2\gamma_i(x - x_i). \quad (5.29)$$

Substituting this expression into the government's first-order condition and rearranging yields

$$\tilde{x} = \frac{\gamma_g}{2\gamma + \gamma_g} x_g + \frac{\gamma}{2\gamma + \gamma_g} x_a + \frac{\gamma}{2\gamma + \gamma_g} x_b, \quad (5.30)$$

which is the expression in Proposition 5.2 after setting $\gamma_a = \gamma_b$,

To obtain the equilibrium contributions, and following the exposition in Gehlbach (2013), note that the anti-cooperation group a needs to choose $C_{1,a}$ to make the government indifferent between accepting its contribution and setting

policy accordingly and to turning down a 's offer and accepting only b 's offer. Moreover, the condition will hold with equality. Consequently, the equilibrium contribution needs to satisfy

$$-\gamma_g(\tilde{x} - x_g)^2 + \tilde{C}_{1,a} + C_{1,b}(\tilde{x}) = -\gamma_g(\tilde{x}_b - x_g)^2 + C_{1,b}(\tilde{x}_b), \quad (5.31)$$

where \tilde{x}_i is the equilibrium policy set if only group i was lobbying (hence, note that $\tilde{x}_a = \hat{x}$). Rearranging terms, this implies that

$$\tilde{C}_{1,a} = \underbrace{-[\gamma_g(\tilde{x}_b - x_g)^2 - \gamma_g(\tilde{x} - x_g)^2]}_{\text{difference in policy payoff}} + \underbrace{C_{1,b}(\tilde{x}_b) - C_{1,b}(\tilde{x})}_{\text{difference in contributions}}, \quad (5.32)$$

which shows that interest group a now has to compensate the government for two things: first, the difference in terms of its policy preferences relative to accepting b 's offer exclusively; and, second, the difference in contributions relative to accepting b 's offer exclusively. The second term further implies that interest group a must, implicitly, compensate interest group b for its difference in policy payoff. To see why, note that in equilibrium interest group b must be indifferent between \tilde{x}_b and \tilde{x} , which implies that

$$-\gamma_b(\tilde{x}_b - x_b)^2 - C_{1,b}(\tilde{x}_b) = -\gamma_b(\tilde{x} - x_b)^2 - C_{1,b}(\tilde{x}), \quad (5.33)$$

and hence

$$C_{1,b}(\tilde{x}_b) - C_{1,b}(\tilde{x}) = -\gamma_b(\tilde{x}_b - x_b)^2 + \gamma_b(\tilde{x} - x_b)^2. \quad (5.34)$$

Hence, the equilibrium contribution by group a is determined as

$$\tilde{C}_{1,a} = \gamma_g[(\tilde{x} - x_g)^2 - (\tilde{x}_b - x_g)^2] + \gamma_b[(\tilde{x} - x_b)^2 - (\tilde{x}_b - x_b)^2], \quad (5.35)$$

and analogous steps yield the equilibrium contribution by group b .

V.A.2 Agreement with no commitment

To derive Figure 5.1., first note that the contributions by group a are larger with an international agreement than in the unilateral case if

$$\omega \equiv \gamma_g \left[(\tilde{x} - x_g)^2 - (\tilde{x}_b - x_g)^2 - 2(\hat{x} - x_g)^2 \right] + \gamma_b \left[(\tilde{x} - x_b)^2 - (\tilde{x}_b - x_b)^2 \right] \geq 0. \quad (5.36)$$

x_g appears on the left-hand side up to the second power. It is easy to show that the second derivative of the left-hand side with respect to x_g is always negative. It follows that ω describes an upside-down parabola. Consequently, for x_g between the two roots of ω , an international agreement elicits higher contributions from a than policy that is set unilaterally. These roots are

$$x'_g = \frac{a + a^2 + a\sqrt{2}\sqrt{1 + 5a + 8a^2 + 4a^3}}{1 + 7a + 8a^2},$$

$$x''_g = \frac{a + a^2 - a\sqrt{2}\sqrt{1 + 5a + 8a^2 + 4a^3}}{1 + 7a + 8a^2}.$$

Note that x'_g is strictly increasing in a while x''_g is strictly decreasing in a .

Because x''_g is strictly decreasing in a , it follows that x''_g is at most 0. It follows that, because $x_g \geq 0$, only x'_g is binding. Figure 5.1. graphs the equation for x'_g against a . For any given level of a , for $x_g \leq x'_g$ the contributions by group a under unilateral policy-making are smaller than the contributions with an international agreement.

For Figure 5.2., note that the government prefers the policy in an agreement, \tilde{x} , to the unilateral policy, \hat{x} , net of contributions whenever

$$-\gamma_g (\tilde{x} - x_g)^2 > -\gamma_g (\hat{x} - x_g)^2. \quad (5.37)$$

The condition holds under two sets of circumstances:

$$\frac{\gamma}{\gamma + \gamma_g} < x_g < \frac{\gamma + \gamma_g}{\gamma}, \quad (5.38)$$

$$\text{or } \frac{\gamma(\gamma + \gamma_g)}{\gamma^2 + 4\gamma\gamma_g + 2\gamma_g^2} < x_g < \frac{\gamma}{\gamma + \gamma_g}. \quad (5.39)$$

Note that these ranges always exist (i.e., the left bound within each line is smaller than the right bound). It follows that the government prefers \tilde{x} to \hat{x} if

$$\frac{\gamma(\gamma + \gamma_g)}{\gamma^2 + 4\gamma\gamma_g + 2\gamma_g^2} < x_g < \frac{\gamma + \gamma_g}{\gamma}. \quad (5.40)$$

Using that $\alpha = \gamma/\gamma_g$ and dividing both nominator and denominator on the left-hand side by γ_g^2 and on the right-hand side by γ_g yields the expression in condition (5.22) in the text.

For Figure 5.3. and the government's decision over whether to use an international agreement, note that the government prefers an agreement to unilateralism whenever

$$-\gamma_g(\tilde{x} - x_g)^2 + \tilde{C}_{1,a} + \tilde{C}_{1,b} \geq \gamma_g(\hat{x} - x_g)^2. \quad (5.41)$$

η , defined as

$$\eta \equiv -\gamma_g(\tilde{x} - x_g)^2 + \tilde{C}_{1,a} + \tilde{C}_{1,b} - \gamma_g(\hat{x} - x_g)^2, \quad (5.42)$$

describes an upside-down parabola (the second derivative with respect to x_g is strictly negative). Hence, condition (5.41) is satisfied for any x_g within the two roots of η . The roots, in turn, are given by

$$x_g' = \frac{1 + a - \sqrt{1 + 5a + 8a^2 + 4a^3}}{3 + 4a}, \quad (5.43)$$

$$x_g'' = \frac{1 + a + \sqrt{1 + 5a + 8a^2 + 4a^3}}{3 + 4a}. \quad (5.44)$$

Since x'_g is strictly negative, the only binding constraint comes from x''_g . Hence, any $x_g < x''_g$ will satisfy condition (5.41). Figure 5.3. graphs x''_g in relation to α and x_g . Note also that, since $\alpha > 0$, it follows that $x''_g < 1 + \alpha$, such that whenever the government prefers an international agreement over unilateral policy-making, the international participation constraint will hold as well.

For the case of an agreement that fails to lock in policy, similar steps as before allow deriving the equilibrium policy and contributions given in Proposition 5.3. The government prefers an agreement to unilateralism whenever

$$-\gamma_g(\tilde{x} - x_g)^2 + 2\tilde{C}_{1,a} + 2\tilde{C}_{1,b} \geq \gamma_g(\hat{x} - x_g)^2. \quad (5.45)$$

Similar steps as above show that this condition holds for

$$0 \leq x_g < \frac{2a + 2a^2 + \sqrt{1 + 12a + 51a^2 + 100a^3 + 92a^4 + 32a^5}}{1 + 8a + 8a^2}, \quad (5.46)$$

which is graphed in Figure 5.4. in the main text. Note that, for $\alpha \rightarrow 0$, the upper bound approaches one, and that the upper bound is strictly increasing in α . Thus, for all $x_g \in (0, 1)$, i.e., whenever the government's ideal point is contained within the two interest group's ideal points, the government prefers an international agreement to unilateral policy-making.

CHAPTER VI

Conclusion

This dissertation provided a number of new links between domestic and international politics. It shows how international institutions can matter for domestic politics. By encouraging political involvement of new interest groups, they modify the relationship between domestic institutions and policy outcomes. In the context of trade politics, the presence of international agreements mutes the protectionist bias of narrow interest institutions in terms of average tariff rates and creates more dispersion in tariff rates across products.

The dissertation further relates domestic institutions to differences in government engagement with international institutions, which is shown at the example of trade disputes. Institutions that increase the influence of narrow interest groups are associated with substantially more trade dispute initiations. Concerns about the unequal participation of developing and developed countries in the global trade institutions have risen to one of the GATT/WTO's most noted shortcomings, both among policy-makers and among academics. Differences in participation rates among countries of similar levels of development may, likewise, have substantial consequences for interest groups and firms located in these countries. Finally, the dissertation points out how domestic political concerns, and specifically the unwillingness of governments to jettison politically salient issues, may undermine the

ability of governments to rely on strong international institutions that lock in policy choices – even if those agreements result in policies preferred by the government.

Even more specific to trade politics, by paying close attention to the joint influence of domestic and international institutions, the dissertation portrays a richer model of trade politics than what is currently found in the literature, which helps explain some of the ambiguous results in the literature. While the existing literature connects institutions that create more incentives to cater to narrow interests to on average more protectionist trade policies, I showed that this view is biased due to the joint omission of exporter interests and of international institutions.

This oversight appears as an important limitation for both the theoretical and the empirical link between institutions and trade policy-making. In the presence of international trade agreements, electoral institutions that are typically thought to be associated with more protectionist trade policies can result in more liberal trade policies domestically and in attempts to enforce liberal trade policies abroad. The argument may also be applicable to other domestic institutions, such as the comparison between democracies and autocracies – where democracies are argued to have more incentives to provide free trade (Milner and Kubota, 2005) and at the same time more incentives to provide protectionist trade policies (Milner and Rosendorff, 1997). This part of the dissertation therefore suggests that an *international* political economy approach that accounts for *international* factors, namely the presence of international agreements, can explain some of the inconsistencies in the ‘domestic’ political economy literature. The dissertation thereby contributes to two distinct fields in political science and shows how integrating them may help resolve remaining puzzles.

By underscoring the ambiguous relationship between domestic institutions and trade policies in the context of trade agreements, the dissertation further adds to

calls to move beyond average tariff rates as measures of protectionism (McGillivray, 2004), but it provides a new rationale for why such averages can be misleading. The dissertation further suggested a number of new avenues to assess the influence of interest groups – the variance in tariff rates, the initiation of trade disputes, and references in political campaigns.

Lastly, the use of reciprocal trade liberalization to accommodate exporters may help resolve what is sometimes considered the anti-trade puzzle – the question of why trade policies are biased systematically towards protectionist interest groups and why they do not expand trade more than they restrict trade (see, e.g., Rodrik 1997). One reason is that (domestic) trade policy in the form of tariffs can only benefit protectionist interest groups; to benefit exporters, a government needs to achieve a reduction in foreign tariffs. A government that wants to support exporters as pro-trade groups can achieve in a reduction in foreign tariffs through a reciprocal lowering of its own tariffs. However, and notably, such pro-trade behavior is not evidenced in pro-trade policies domestically, but in the removal of anti-trade policies.¹ Consequently, the observed implications of a government supporting groups in favor of free trade need not be an increase in explicit trade-expanding domestic policy measures.

Finally, the dissertation points to a number of other issues that may deserve a more thorough treatment in future work. First, the dissertation emphasizes the role of interest groups and therefore non-state actors in world politics. A sizeable literature suggests that non-state actors increasingly exercise independent authority in international affairs (Hall and Biersteker, 2002; Falkner, 2003; Vogel, 2008; Bütke and Mattli, 2011). Some of the arguments in this dissertation underscore that governments may also involve non-state actors strategically in international affairs.

By providing additional monitoring capacities, non-state actors can increase

¹In fact, the GATT/WTO rule out 'visible' pro-trade policies, such as export subsidies.

the expected cost of defection by increasing the likelihood of being detected; this increases the effectiveness of enforcement and allows to install less costly enforcement measures or to negotiate deeper agreements. And through the provision of resources to litigation, such as in the form of legal expertise, non-state may even contribute directly to the enforcement of international law. Moreover, if differences exist among states of how to share the benefits and costs of cooperation, that is, which of the potential equilibrium points to choose, governments may rely on non-state actors that can exert political influence – either domestically or in foreign countries – to influence bargaining outcomes. More generally, then, non-state actors may help governments address major cooperation problems, in particular those related to distributional conflict, enforcement problems, and informational problems, and governments may choose which issues and which non-state actors to include in negotiations strategically, keeping an eye on addressing these issues.

Second, while reciprocity can be key for achieving trade liberalization, it has important limitations when it comes to universal trade liberalization. Reciprocity may undermine, rather than further, universal trade liberalization through a number of channels. For instance, reciprocal trade agreements create incentives for governments to maintain higher tariffs on select products as bargaining tools. As an example, in the late 19th century, the German government faced domestic demands to lower tariffs on agricultural products in order to counter high food prices. However, because of concurrent negotiations over a trade agreement with Austria, German exporters lobbied heavily against such unilateral tariff reductions, which would have eliminated a bargaining tool for German negotiators and therefore would have weakened Germany's bargaining position.

One implication is that international institutions may, at times, endogeneously create what appears to be effectiveness. As long as there is the possibility of a trade

agreement being negotiated in the future, governments refrain from unilateral liberalization, knowing that any unilateral reform would mean to forgo concessions in a future trade agreement. Once the trade agreement is negotiated, concessions are made. On the one hand, these are due to the trade agreement, since they would not have been able without it. On the other hand, if it weren't for the possibility of a trade agreement in the first place, the same reforms might have been implemented long before. Such incentives to increase tariffs and to refrain from unilateral tariff reductions for bargaining purposes can be particularly damaging when trade negotiations fail, in which case it may be hard to reverse protectionist policies that were originally kept in place or even instituted merely as bargaining tools. Similar concerns may also be relevant not across time, but across institutions. For instance, Dutch negotiators in the 18th century were reluctant to lower tariffs towards France, fearing that Britain would ask for similar tariff concessions from the Netherlands once concessions were made to another country (Wright, 1955).

Third, the previous chapters largely ignored some of the temporal aspect to international cooperation. International cooperation implies the mutual adjustment of policies (Keohane, 1984) and as a consequence typically will create domestic winners and losers. This has two implications. First, governments need not only be able to credibly convey that they can undertake reforms, but also that they can sustain them when faced with future domestic political pressure. One way to ensure that this is the case is to establish agreements that are able to lock in policy reform through strong commitment and enforcement mechanisms; at the same time, however, the absence of any flexibility mechanisms may undermine an agreement's stability in the long run (Rosendorff, 2005). Second, there is a question of whether the losers will accept their losses, or if they continue to contest the policy adjustment once it is made. In the case of economic agreements, there is a good chance that losers will not be around in the future, because they lose sufficient

market shares and profits that they go out of business. If that is the case, resistance to future cooperation will decline, which has been termed the 'juggernaut effect' in the context of trade liberalization (Baldwin and Robert-Nicoud, 2008). Of course, this dynamic impact implies that potential losers from an agreement will fight even harder to prevent its negotiation. But it also implies that countries may be put on very different dynamic development paths, depending on when and in what form reforms are undertaken. It appears worthwhile to pay more attention to these issues to gain a better understanding of the negotiation, functions, and effects of international institutions.

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