

Lobbying in the Political Economy of International Trade

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<https://doi.org/10.1093/acrefore/9780190625979.013.706>

Published online: 22 December 2021

Summary

While the role of lobbying in trade policy determination has been studied in a formal way since the early 1980s, it was the pathbreaking 1994 work by Grossman and Helpman in the following decade that led many scholars, using that framework (often with some modifications), to study many interesting political economy issues in the trade policy arena. Importantly, Grossman and Helpman were also the first to provide microfoundations to lobbying within a multisectoral, specific-factors framework. Moreover, the industry-level protection they derive is an empirically estimable function of measurable industry characteristics and other political and economic factors. With everything else held constant, organized sectors are able to obtain higher protection than unorganized sectors, with organized-sector protection inversely related to import penetration and import demand elasticity. Grossman and Helpman's work gave an impetus to theory-driven empirical work in the political economy of trade policy, including the empirical investigation of the Grossman-Helpman model itself and its many extensions. There is now also a fairly large literature trying to explain the unrealistically high empirical estimates of the model's parameters (representing the proportion of population politically organized and the weight the government attaches to aggregate welfare relative to political contributions). Extensions for empirical investigation that include bringing in competition between upstream and downstream lobbies, imperfect capturing of nontariff barrier (NTB) rents by the government, foreign lobbies, the possibility of misclassification of sectors into organized and unorganized, and so forth partially correct the unrealistic parameter estimates. In addition, there are extensions that have been applied toward explaining policy changes and puzzles. Those extensions deal with lobby formation, trade agreements, unilateralism versus reciprocity in trade policy, lobbying for protection in declining industries, firm-level lobbying, the choice of policy instruments, and so forth. Despite so much work already done on lobbying and trade policy, the existing literature is deficient in the study of the choice of instruments, the antitrade bias in trade policy, and informational lobbying.

Keywords: political contributions approach, special interest groups, lobby formation, unilateralism versus reciprocity, trade agreements, trade and labor

Subjects: International Economics

Redistribution Through Interactions Between Interest Groups and Politicians

Anyone who has taken an undergraduate course in international trade understands that there are welfare or efficiency costs associated with import protection and that there are gains from trade. Yet, trade protection has always existed, albeit with ups and downs, almost all over the world.

Economists have provided conditions under which the use of import tariffs might be desirable. Those include the presence of learning externalities, the existence of an international oligopolistic market structure, the possibility of comparative advantage in the wrong sectors (not the sectors where there are learning-by-doing possibilities), a country's monopoly power in trade (terms-of-trade effect when a country is large in the world market), and so forth. However, there is import protection in the form of tariffs and quantitative restrictions almost everywhere in the world, even in countries and sectors within countries where one does not expect the conditions for desirability of tariffs to hold. What, then, explains the universal existence and the actual levels of such trade protection?

The first step in understanding the existence and determinants of trade protection involves the ability to make a distinction between how trade affects the size of a country's pie and how it affects the sizes of the various slices of this pie going to different sections of society. Even when lowering trade restrictions expands a country's overall pie, a government may stick to protectionist policies, since lowering protection could shrink the slices going to politically powerful or influential groups of society. Moreover, redistribution of the expanded pie through other, more direct and visible means might not be politically feasible.

The next step in understanding trade protection is to understand who the politically powerful or influential groups are. In a democracy, the political power or influence of a group depends on its vote share. Politicians are likely to propose policies that benefit the majority and will not propose those that hurt them. Thus, the first channel of political influence or power is votes, and that is what voting models capture. For example, the United States can be viewed as capital abundant (abundant in both physical capital and human capital or skilled labor), but the majority even in such a country are low-skilled workers with little ownership of assets. Trade benefits owners of abundant factors and hurts owners of scarce factors, while trade restrictions do the opposite. Thus, trade restrictions clearly benefit the majority (low-skilled workers) in a developed country like the United States, thereby acting as a political basis for the legislation of trade restrictions. This is the subject of median-voter models of trade policy, such as Mayer (1984).

However, it has been argued that only broad trade policy platforms or contours are set during elections through electoral competition (Grossman & Helpman, 1994). The finer details, including import tariff levels on individual goods, are set within those contours through political influence of a different kind. This happens through "lobbying," which is the focus of this article.

The dictionary meaning of *lobbying* is the influencing of legislation by a special interest group or by someone on its behalf through various means. This special interest group might represent an industry or people belonging to a certain profession or owners of a particular factor of production. The form this influence of legislation takes is not specifically modeled in most of the early literature on lobbying. Special interest groups are assumed to put effort or resources into lobbying, and the size of the policy legislation in their favor is positively related to the amount of that effort or those resources. Alternatively, the government puts a higher weight on the welfare of people belonging to special interest groups. How the higher weight is arrived at in many models is a black box. It could be due to effective advocacy through effective networking or through political contributions, referred to as “influence peddling” in McLaren (2016). The explicit modeling of political contributions or influence peddling was done by Grossman and Helpman (1994), which laid the foundation for theoretical as well as empirical work on lobbying in trade policy for the next couple of decades.

The idea that interaction between organized interest groups and politicians determines policy was originally in economic theories of regulation. In the classic paper by Stigler (1971), members of a pressure group maximize their total income net of lobbying expenditure with respect to resources that go into lobbying legislators, who supply regulation to maximize votes. The marginal benefit to the politician of political contributions (in terms of votes) is equated to their marginal cost (also in terms of votes) through the regulation that needs to be supplied in return. Formalizing the Stigler model, Peltzman (1976) found that the size of the benefits of a policy or regulation to organized interest groups is restricted by the negative impact on the interests of the rest of the population. Becker (1983) also arrived at a similar result: The deadweight loss of a policy limits the size of that policy and, hence, also limits the gains that interest groups can extract.

The lobbying literature on trade policy started with Findlay and Wellisz (1982). There were several papers written thereafter. But Grossman and Helpman (1994) were the first to provide microfoundations to lobbying within a multisectoral, specific-factors framework. Their model led to many theoretical extensions, applications, and empirical papers. This article will provide an analytical and critical survey of this literature. The theoretical literature will be covered in the second section, “Lobbying Models of Endogenous Trade Policy,” and the empirical literature in the third section, “The New Empirical Literature (with the Grossman–Helpman Framework as the Foundation).” In the final section, “The State of the Literature and Promising Future Research Avenues,” the state of the literature will be discussed, along with suggestions for future research.

Lobbying Models of Endogenous Trade Policy

First-Generation Black-Box Models

The oldest models of lobbying in the political economy literature on endogenous trade policy are Findlay and Wellisz (1982) and Feenstra and Bhagwati (1982). Rodrik (1995), in his “Handbook” chapter, labels the approach taken in these models as the “tariff formation function” approach.

Findlay and Wellisz use a two-sector specific-factors framework. The two sectors are food and manufacturing. There are two specific factors: Capital (K) is used in manufacturing and land (T) is used in food. Labor (L) is the general factor that is used in both sectors and is completely mobile between the two sectors. The output in the manufacturing sector is constant returns to scale (CRS) in capital and labor, and food output is CRS in land and labor. Assuming a small country, with perfect labor mobility between the two sectors, the tariff, t on imports of food is an increasing function of the amount of labor, L_T , that landowners put into lobbying for this tariff and a decreasing function of the amount of labor, L_K , capitalists (capital owners) devote to lobbying against this tariff. Mathematically, this relation is written in the form of the following tariff formation function:

$$t = t(L_T, L_K), t_1 > 0, t_2 < 0 \quad (1)$$

where t_i is the derivative of t with respect to its i th argument. Both specific-factor owners are fully organized politically. Taking L_K as given, landowners collectively decide on the level of L_T that maximizes their total land income net of lobbying costs (i.e., net of what they pay L_T amount of labor). Similarly, capitalists, taking L_T as given, collectively set L_K to maximize their total capital income net of lobbying costs. Thus, solving for the Nash equilibrium levels of lobbying, L_T^* and L_K^* , then plugging them into the function $t(\cdot, \cdot)$ gives us the Nash equilibrium tariff outcome.

In contrast to the Findlay–Wellisz model, two factors, capital and labor are used as inputs into lobbying in the Feenstra–Bhagwati model. However, only one sector (in this two-sector model) is assumed to be politically active. Another distinguishing feature of the Feenstra–Bhagwati model is that the government is two layered, with one layer being a clearing house for lobbies, the other being concerned about aggregate welfare. The two layers interact to determine the equilibrium tariff.

Rodrik (1986), whose focus is on the choice of instruments between an import tariff and a production subsidy, has a simplified version of the tariff formation function approach. In his two-sector model, the export sector uses only the general factor, labor in production, while the

import-competing sector uses both capital and labor. Capitalists lobby for a tariff in the import-competing sector using labor as the only input into lobbying. In the Rodrik model, the tariff, t , is given by the following simplified tariff formation function:

$$t = t(L_l), t'(\cdot) > 0, t'' < 0$$

where L_l is the labor devoted to lobbying by the capitalists. Their optimal level of L_l maximizes the total capital income of all lobbyists net of their lobbying costs (total amount paid to labor employed in lobbying). This model will appear again in the subsection “The Choice of Policy Instruments.”

The “political support function” approach, pioneered by Hillman (1989), posits the following political support function:

$$\Psi(\pi(t), \Delta(t)), \Psi_1 > 0, \Psi_2 < 0, \pi'(t) > 0, \Delta'(t) > 0 \quad (2)$$

where t , once again, is import tariff, $\pi(t)$ represents profits of capitalists in the import-competing sector as a function of the import tariff, and $\Delta(t)$ is the deadweight loss of that tariff. Since political support is an increasing function of profits of the group or industry that strongly supports the incumbent government but a decreasing function of the deadweight loss, there is an interior solution when political support is maximized with respect to the tariff.

Van Long and Vousden (1991) use a specific form of the Hillman political support function. Their political support function is a weighted sum of the welfare levels of all the different factor owners in the economy. In the most general form, it is written as

$$\Psi(t) = \sum_f a_f W_f(t) \quad (3)$$

where W_f is the total welfare of the owners of factor f , each being given a weight a_f .¹

It is important to note that in each of the aforementioned models in this section, there is at least one obvious black box. For example, in all the models that use the tariff formation function approach, there is, as the name suggests, a tariff formation function, which tells us how the government responds to lobbying. In other words, the tariff formation function is the government’s response function. It is not shown how the government’s optimizing behavior leads to that response function. Similarly, the optimizing behavior of lobbies is a black box in the political support function approach. The welfare levels of the lobbies or politically organized factor owners or factor owners that form a big block of votes are given a higher

weight in the government's objective function than the welfare of others. But it is unknown within the model what exactly the lobbies do to get a higher weight and what in their behavior determines the sizes of those weights.

The State-of-the-Art Approach to Modeling Lobbying for Trade Policy: The Grossman–Helpman “Protection for Sale” Model

This approach, which has been labeled as the “political contributions approach” by Rodrik (1995), fills some of the aforementioned gaps in the literature. It provides microfoundations to the behavior of lobbies and the government. The pioneering model in this strand of the political economy literature on trade policy is Grossman and Helpman (1994).²

Let us consider a small country, producing and consuming N nonnumeraire goods and one numeraire good (whose price is set to 1). An individual has the following utility function:

$$U = c_0 + \sum_{i=1}^N u_i(c_i), u'_i(c_i) > 0, u''_i(c_i) < 0, \quad (4)$$

where c_i is the consumption of good i , good 0 being the numeraire. This utility function is quasilinear and is additively separable in the various goods. This specific type of utility function will ensure that there is no income effect on nonnumeraire goods. All the income effect is on the numeraire good.

The world price of nonnumeraire good i is p_i^* , so the domestic price is $p_i = p_i^*(1 + t_i)$ where t_i is the ad valorem import tariff if good i is an importable and an export subsidy if the good is an exportable. Since the country is assumed to be small, the world price p_i^* is taken as given for all i .

Each consumer maximizes her utility function subject to a budget constraint,

$$\sum_{i=1}^N p_i c_i = E, \quad (5)$$

where E is expenditure or income. Combining the first-order conditions with respect to the consumption of nonnumeraire good i and with respect to the consumption of the numeraire good leads to $u'_i(c_i) = p_i$, inverting which, a consumer's demand for good i is given by

$$c_i = d_i(p_i) \quad (6)$$

and the demand for the numeraire good to be

$$c_0 = E - \sum_{i=1}^N p_i d_i(p_i). \quad (7)$$

Thus, the indirect utility of an individual is given by

$$v(\mathbf{p}, E) = E + \sigma(\mathbf{p}),$$

where $\mathbf{p} = (p_1, p_2, \dots, p_N)$ is the vector of prices of nonnumeraire goods, $\sigma(\mathbf{p})$ is the consumer surplus obtained from the consumption of all nonnumeraire goods, given by

$$\sigma(\mathbf{p}) = \sum_{i=1}^N [u_i(d_i(p_i)) - p_i d_i(p_i)]. \quad (8)$$

Assume there are $N + 1$ factors of production (a specific factor for every nonnumeraire industry, and one general, mobile factor, namely labor). The output of a nonnumeraire sector i is given by

$$X_i = F_i(K_i, L_i), \quad (9)$$

where $F_{i1} > 0, F_{i2} > 0, F_{i11} < 0, F_{i22} < 0$, and F_i is a CRS production function. The additional single subscript $j = 1, 2$ represents the partial derivative with respect to the first and second arguments, respectively, with the further additional subscript representing second-order partial derivatives. Here K_i is the capital specific to sector i and L_i is the amount of the intersectorally mobile factor, labor used in sector i . In the numeraire sector, the production function is Ricardian, using only labor under CRS, with output, X_0 given by

$$X_0 = L_0, \quad (10)$$

where L_0 is labor used in the production of the numeraire good. Since the marginal product of labor in this sector is 1 throughout and the price of this good is 1 (by virtue of it being the numeraire good), perfect mobility of labor across the various sectors fixes the economy-wide wage at 1 in equilibrium.

Denoting the income earned by the sector-specific factor in sector i by π_i and calling it the profits earned by that factor,

$$(11)$$

$$\pi_i(p_i; K_i) = \underset{L_i}{\text{Max}} p_i F_i(K_i, L_i) - L_i.$$

Suppressing the argument K_i , the supply of good i is

$$X_i = X_i(p_i) = \pi'_i(p_i). \quad (12)$$

It is easy to show that $X'_i(p_i) = \pi''_i(p_i) > 0$.

Letting M be the total population and assuming that trade tax revenues net of subsidies are uniformly (equally) distributed across the population, each person in the economy gets the following amount from the government:

$$\tau(\mathbf{p}) = \sum_{i=1}^N (p_i - p_i^*) [d_i(p_i) - (1/M)X_i(p_i)]$$

In their paper, Grossman and Helpman (1994) assume that an individual owns at most one kind of specific factor. The owners of a particular specific factor may or may not be politically organized. If they are politically organized, it means they can lobby the government in the sense that they can communicate their offers of political contributions in exchange for trade policy in their favor. The gross (of political contributions) welfare of the owners of a specific factor i can be written as

$$W_i(\mathbf{p}) = \pi_i(p_i) + \sum_{h \in H_i} l^h + \alpha_i M [\sigma(\mathbf{p}) + \tau(\mathbf{p})] \quad (13)$$

where l^h is the labor endowment of the h th individual, H_i is the set of all individuals owning specific factor i , and α_i is the share of the owners of this specific factor in total population. Similarly, aggregate welfare in the economy can be written as

$$W_A(\mathbf{p}) = \sum_{i=1}^N \pi_i(p_i) + L + M [\sigma(\mathbf{p}) + \tau(\mathbf{p})] \quad (14)$$

where L is total endowment of labor in the economy.

The government's objective function is given by

$$(15)$$

$$W_G(\mathbf{p}) = \sum_{i \in \Lambda} C_i(\mathbf{p}) + aW_A(\mathbf{p})$$

where C_i is the political contribution made by sector i (so $C_i(\mathbf{p})$ is sector i 's contribution schedule), Λ is the set of all sectors (specific factors) that are politically organized, W_A is the aggregate welfare in the economy, and a is the weight the government places on aggregate welfare relative to political contributions.

In this model, Grossman and Helpman take Bernheim and Whinston's (1986) "menu auctions" approach. In the first stage, each organized sector (entire group of specific-factor owners from each organized sector) presents its contribution schedule (as a function of the price vector), taking as given the contribution schedules of the other organized sectors and taking into account the government's objective function. Once the government receives all the contribution schedules, it maximizes its objective function $W_G(\mathbf{p})$.

Grossman and Helpman restrict focus to truthful contribution schedules. Such schedules take the form

$$C_i(\mathbf{p}) = \text{Max}[0, W_i(\mathbf{p}) - B_i] \quad (16)$$

where B_i is the net-welfare anchor determined in equilibrium. Clearly, in the region where the contribution level is positive, $\frac{\partial C_i}{\partial p_j} = \frac{\partial W_i}{\partial p_j}$ for all j and all $i \in \Lambda$, which means that the

contribution schedule of a lobby truthfully represents the lobby's preferences at positive levels of contributions. Grossman and Helpman focus on equilibria in which lobbies make positive contributions. Therefore, the relevant region of any contribution schedule is where $C_i(\mathbf{p}) = W_i(\mathbf{p}) - B_i$. Once the contribution schedules are presented, the government will now treat B_i as given. Plugging in the relevant part of each contribution schedule into the government's objective function results in $W_G(\mathbf{p}) = \sum_{i \in \Lambda} [W_i(\mathbf{p}) - B_i] + aW_A(\mathbf{p})$. Since B_i is

treated as a constant for all i , the government's maximization problem to set the tariff vector (effectively the domestic price vector) boils down to

$$\text{Max}_{\mathbf{p} \in \mathbf{P}} \sum_{i \in \Lambda} W_i(\mathbf{p}) + aW_A(\mathbf{p}) \quad (17)$$

where \mathbf{P} is the feasible set of price vectors, which is bounded (with each price taking values between a positive minimum and a maximum). Grossman and Helpman focus on equilibria that lie in the interior of this set.

It is important to note that both aggregate welfare and the welfare of each type of specific-factor owners are additively separable in prices. Therefore, the first-order condition with respect to the price of any nonnumeraire good is independent of the prices of other nonnumeraire goods. In other words, one can effectively perform the following exercise for each sector i :

$$\underset{p_i}{Max} I_i \pi_i(p_i) + \alpha_\Lambda (CS_i(p_i) + TR_i(p_i)) + a[\pi_i(p_i) + CS_i(p_i) + TR_i(p_i)] \quad (18)$$

where I_i is an indicator variable for an organized sector i (takes value of 1 if the sector is organized and 0 otherwise), α_Λ is the fraction of the country's population that is politically organized, $CS_i(p_i)$ is the consumer surplus generated by sector i for the entire economy, and $TR_i(p_i)$ is the total tariff revenue generated by this sector. This problem, in turn, can be written as

$$\underset{p_i}{Max} (I_i + a)\pi_i(p_i) + (\alpha_\Lambda + a)[CS_i(p_i) + TR_i(p_i)] \quad (19)$$

Finally, in the simplest form, this problem can be written as

$$\underset{p_i}{Max} (I_i - \alpha_\Lambda)\pi_i(p_i) - (\alpha_\Lambda + a)\Delta_i(p_i) \quad (20)$$

where $\Delta_i(p_i)$ is the deadweight loss created by the trade tax or subsidy in that industry. The first-order condition of the maximization problem gives us

$$(I_i - \alpha_\Lambda)X_i(p_i) = -(\alpha_\Lambda + a)(p_i - p_i^*)m'_i(p_i) \quad (21)$$

where $m_i(p_i) = [Md_i(p_i) - X_i(p_i)]$ is aggregate domestic import demand. On the left-hand side, $X_i(p_i)$ is the marginal profit from an extra dollar of the specific tariff, $p_i - p_i^*$, while $-(p_i - p_i^*)m'_i(p_i)$ is the marginal deadweight loss from it. Since the organized population bears α_Λ proportion of the overall deadweight loss and a is the weight on welfare, the government's perceived deadweight cost is the actual multiplied by the weight $(\alpha_\Lambda + a)$, while the weight on the marginal profit is $(I_i - \alpha_\Lambda)$.³

The equilibrium gap between the domestic and the world price, which is the specific tariff, is given by

$$(22)$$

$$(p_i - p_i^*) = \frac{(I_i - \alpha_\Lambda)}{(\alpha_\Lambda + a)} \cdot \frac{X_i(p_i)}{-m'_i(p_i)}$$

Alternatively, the equilibrium ad valorem tariff t_i is given by

$$\frac{t_i}{1 + t_i} = \frac{(I_i - \alpha_\Lambda)}{(\alpha_\Lambda + a)} \cdot \frac{z_i}{\varepsilon_i^m}$$

where z_i is the output-to-import ratio and ε_i^m is the absolute import demand elasticity.

Most important to note here is that, especially from the empirical angle, the level of protection arrived at for each industry is an estimable function of measurable industry characteristics and other political and economic factors. With everything else held constant, organized sectors are able to obtain higher protection than unorganized sectors. Protection to an organized sector is positively related to its inverse import penetration ratio and inversely related to its import demand elasticity. The former represents the size and power of the sector relative to its level of imports, while the latter is a measure of the cost of protection. All organized sectors receive lower protection, the higher is the government's weight a on welfare relative to contributions. A government with a higher a cares more about the deadweight cost of any deviation from free trade and is, therefore, willing to provide lower protection (deviation from free trade). A higher α_Λ also results in lower protection, since then the negative effects of any protection are felt by a bigger organized population. Note that an unorganized sector gets negative protection in this model, since that pushes its price down and benefits the organized population by lowering their cost of consumption. The size of this negative protection is increasing in the sector's inverse import penetration ratio and decreasing in its import demand elasticity, since, as already mentioned, the cost of deviation from free trade increases with this elasticity. Also, with a high a , the government cares more about aggregate welfare and provides a smaller magnitude of negative protection (deviation from free trade in the other direction). A higher α_Λ results in a greater negative protection (in magnitude) for unorganized sectors since there is a greater organized population lobbying to depress the domestic price of each unorganized sector.

Strengths and Weaknesses of the Grossman–Helpman Approach

The Grossman and Helpman model is considered pathbreaking since it is multisectoral in that it moved the literature from two sectors to $N \geq 2$ sectors. Second, in this model there are microfoundations for the behavior of lobbies and politicians. In previous models, at least the behavior of one of these two groups was a black box. The lobbies are assumed to be the multiple principals for whom the common agent, namely the government, works. And, as already mentioned, the model can easily be taken to the data as industry-level protection is a function of highly measurable industry characteristics.

However, there are a number of weaknesses of the Grossman and Helpman model that have been pointed out by scholars working in the area of political economy of trade policy. The first criticism is about the assumption of an extremely simple utility function and a Ricardian numeraire sector that uses only labor under CRS. These assumptions make the general equilibrium model essentially partial equilibrium, thereby greatly simplifying the analysis. Their use is now standard in the political economy literature on trade policy. Krugman (1995) has supported such an approach for analyzing political economy issues in a multisectoral general equilibrium framework on the grounds that in such a framework our partial equilibrium logic goes through and general equilibrium concerns are not uppermost on the minds of politicians or lobbyists.

The second concern is that announcing “contribution schedules” is a felony in the United States (McLaren, 2016). McLaren calls it a “reverse Cunningham,” after the politician who had to go to prison for announcing an explicit offer schedule of policy favors for contributions. McLaren views this to be a serious problem with the model. There are a couple of responses to this criticism. Experienced lobbyists know how to convey these offers covertly in private. These are not put on paper or in an e-mail. In addition, Goldberg and Maggi (1999) have shown that the equilibrium tariff schedule is exactly the same if the “menu auctions approach” is replaced with Nash bargaining. Also, in a full-information model, where politicians know the representative tastes and preferences, endowments, and technology, and lobbies know the government’s preferences over contributions and aggregate welfare, it might not be necessary for the lobbies to fully and explicitly spell out their contribution schedules. The government should be able to figure those out. All the lobbies should be able to do is to get in touch with politicians to indicate their willingness and desire to be part of this process of political influence and the politicians will be able to fill in the blanks.

The next criticism is about the negative protection given to unorganized sectors. Once again, McLaren (2016) is one of the people to raise this concern. Negative protection is virtually nonexistent. The counterargument here is that the equilibrium tariff formula is more about variation rather than the actual sign of the protection formula. There might be other reasons, such as targeting the votes of unorganized-sector producers in elections, that can lead to positive tariffs. McLaren works out the tariff formula when the welfare of specific-factor owners in the unorganized sectors gets a higher weight than the welfare of pure workers in the government’s objective function:

$$\frac{t_i}{1 + t_i} = \frac{(I_i - \alpha_\Lambda) + (a' - A)}{(\alpha_\Lambda + a)} \cdot \frac{z_i}{\varepsilon_i^m} \quad (23)$$

where a' is the weight given to the welfare of unorganized specific-factor owners and A is the weighted average of a and a' . If $a' - A > \alpha_\Lambda$, then $t_i > 0$ even when i is unorganized. One of the problems with this approach is that then for this sector t_i is increasing in $\frac{z_i}{\varepsilon_i^m}$, which is the opposite of the empirically supported Grossman–Helpman prediction for unorganized sectors.

However, an alternative solution is to consider a large country, that is, one that does not take the world price as given but one that responds to its tariff. In that case,

$$t_i = \frac{(I_i - \alpha_\Lambda)}{(\alpha_\Lambda + a)} \cdot \frac{X_i(p_i)}{-p_i^* m'_i(p_i)} + \frac{1}{e_i} \quad (24)$$

where e_i is the elasticity of the rest of the world's export supply faced by the home country. The term $\frac{1}{e_i}$ represents the terms of trade motivation for a tariff while the other term is the political economy channel. As e_i goes to zero, the model is back to the small country case, along with the corresponding old tariff expression. For an unorganized sector, if the terms of trade channel dominates, there is a positive tariff. At the same time, the tariff is decreasing in $\frac{X_i(p_i)}{-p_i^* m'_i(p_i)}$.

McLaren has also raised a concern that the Grossman–Helpman model does not help in understanding how workers might gain from protection. He argues that in this model workers are worse off as a result of protection being granted to any sector through the negative effect it has on their consumption (by raising their consumption costs). He goes on to describe the extension by Matschke and Sherlund (2006) that incorporates immobile and/or unionized labor in some sectors, where protection will benefit these workers and they can lobby for it through their union. In their model, while the wage rate in a sector with immobile labor goes up with the tariff when the sector is not organized, that translates into additional political pressure for higher tariffs only if a politically organized labor union is present in that industry. Even when capitalists within an industry have their politically organized lobby in place, the equilibrium tariff is lower than the case where additionally the labor union in that industry is also politically organized. The authors find support for their predictions using four-digit industry-level data from the United States.

It can be argued that even the original Grossman–Helpman model allows for immobile labor benefitting from protection if one is willing to interpret sector-specific capital as sector-specific human capital. For example, a carpenter in the furniture industry acquires skills that are specific to that sector and cannot overnight start working as a tailor in the garment industry. An organized lobby representing carpenters in the furniture industry will take the impact of tariffs on furniture imports on the wage of those carpenters into account. Thus, this becomes somewhat a question of interpretation. The model allows for sector-specific skills, which results in the immobility of workers with those specific skills, and because of which they benefit from tariffs on competing imports and may want to lobby for protection for their sector.

There is another shortcoming of the model that is related to the results from its empirical investigation, showing unrealistic parameter estimates. That will be discussed in “Empirical Research in Lobbying and Trade Policy.”

Extensions and Applications of the Protection for Sale Model

Lobby Formation

Another limitation of the Protection for Sale model is that it takes lobbies as given. Some sectors are assumed to be organized and others unorganized. However, the decision to invest in political organization for a sector (specific-factor owners in a sector) has to be based on incentives in that if the government is receptive to lobbies, then more lobbies will get formed, that is, more sectors will get politically organized. Mitra (1999) extends the Grossman-Helpman Protection for Sale model to make the formation of lobbies endogenous. To simplify the model, sectors are assumed to be symmetric in all respects except for the fixed costs of lobby formation. Assuming a continuum of sectors and n organized sectors (and the rest unorganized), the net benefit from political organization for another sector can be written as:

$$NB(n) = W_O(n) - W_U(n) - C(n) = \pi_O(n) - \pi_U(n) - C(n) \quad (25)$$

where $W_O(n)$, $W_U(n)$, and $C(n)$ are an organized sector's gross welfare, an unorganized sector's gross welfare and political contributions by an organized sector, respectively, all as functions of the existing number of lobbies or organized sectors, n . Furthermore, $\pi_O(n)$ and $\pi_U(n)$ are total profits (total income of specific-factor owners) of an organized and an unorganized sector, respectively.

Under reasonable conditions, Mitra (1999) shows that $NB'(n) < 0$ and provides intuition for this result as follows: "As n increases, there are more lobbies working against each other and a smaller unorganized population to exploit."

Assuming that fixed costs are heterogeneous, and arranging sectors in increasing order of their fixed costs of lobby formation, $F'(n) > 0$. The endogenous number, n^* of lobbies is the solution to

$$NB(n) = F(n) \quad (26)$$

A reduction in a represents a lower weight on aggregate welfare relative to contributions, which means the government is more receptive to lobbies. As a result at given n , the government is willing to provide greater protection to organized sectors and also increase the magnitude of negative protection to unorganized sectors. Total differentiation of the lobby formation equilibrium equation with respect to a gives us

$$\frac{dn^*}{da} = \frac{-NB_a}{NB_n - F_n} < 0 \quad (27)$$

where a subscript indicates a partial derivative with respect to the variable indicated. In other words, when the government is more responsive to lobbies, more lobbies get formed. A reduction in a in the presence of exogenously given lobbies leads to an increase in NB through an increase in the tariff on imports competing with goods produced by an organized sector and an increase in the magnitude of negative protection given to an unorganized sector. As a result, the net benefit to form a lobby rises, leading to more sectors getting organized. This entry can fully or partially offset the direct effect on a tariff of a decrease in a . Also, it is important to note that a small a leading to the entry of a large number of lobbies can take us to free trade, which is also the case with a high a with hardly any politically organized sectors in equilibrium.

Another important comparative static exercise in the model is with respect to the concentration of asset ownership. More concentrated asset ownership leads to a smaller proportion of the consumption costs of tariffs being borne by organized sectors, with benefits to producer surplus being more concentrated. Therefore, more concentrated ownership leads to a greater number of lobbies, whose effect on an organized sector's tariff can fully or partially offset the direct effect of an increase in asset ownership concentration.

In the penultimate section of Mitra (1999), the case of heterogeneous sectors is worked out with very special functional forms to arrive at the result that "groups with high capital stock levels, low demand elasticities, low levels of geographical dispersion, and few members will get organized, while the groups with just the opposite characteristics will remain unorganized in equilibrium" (p. 1131).

Magee (2002) uses a repeated game setting to analyze a single lobby's organization problem in the context of the collection of political contributions. In Magee's approach, the government moves first to provide a tariff schedule as a function of the lobby's contributions. Individual capitalists within that one lobby or organized sector then decide on their contributions (see also Pecorino, 1998, for an analysis of the same issue using a tariff formation function approach). On heterogeneous-firm models with firm-level contributions, there are two important papers, Bombardini (2008) and Gawande and Magee (2012), which will be discussed in "Empirical Research in Lobbying and Trade Policy," given the substantial empirical contributions of these papers.

Trade Agreements

The first important theoretical application discussed here is the issue of trade agreements. Using their political contributions approach, Grossman and Helpman (1995a) show that in a two-country world with countries A and B , tariff in industry i in country $c = A, B$, when the two countries set their tariffs noncooperatively (in a trade war situation), is given by

$$t_i^c = \frac{(I_i^c - \alpha_\Lambda^c)}{(\alpha_\Lambda^c + a^c)} \cdot \frac{X_i^c(p_i^c)}{-p_i^* m_i^{c'}(p_i^c)} + \frac{1}{e_i^c} \quad (28)$$

This is the same tariff expression already presented for a large country that has monopoly power in trade, with the same additional terms of trade component, $\frac{1}{e_i^c}$, in the tariff expression. While this component gets eliminated in a cooperative setting of international trade negotiations, the tariff rate set by country A on a product relative to the export subsidy set by country B on the same product depends on the relative strength of the two lobbies representing the same sector in the two countries as follows:

$$t_i^A - t_i^B = \left[\frac{(I_i^A - \alpha_\Lambda^A)}{(\alpha_\Lambda^A + a^A)} \cdot \frac{X_i^A(p_i^A)}{-p_i^* m_i^{A'}(p_i^A)} \right] - \left[\frac{(I_i^B - \alpha_\Lambda^B)}{(\alpha_\Lambda^B + a^B)} \cdot \frac{X_i^B(p_i^B)}{-p_i^* m_i^{B'}(p_i^B)} \right]. \quad (29)$$

Thus, relative size of protection in any sector in the two countries then depends on the relative political power of the same industry in the two countries, where political power of a lobby (organized sector) in country c is an increasing function of its size given by X_i^c , and a decreasing function of a^c and α_Λ^c . A powerful export lobby in the foreign (partner) country, even though not lobbying the home government directly, can indirectly get the home country to lower tariffs on its imports. In addition, the terms of trade externalities are eliminated through trade talks, providing a clear rationale for them. This is also the only rationale for trade agreements in Bagwell and Staiger (1996, 1999) who also show that to be the case even within a political economy setup. They use the same rationale for the General Agreement on Tariffs and Trade (GATT) and World Trade Organization (WTO) and provide further rationale for the rules within them.⁴

But free trade agreements (FTAs) can be valuable even for small countries whose actions have no impact on the international terms of trade. In Maggi and Rodriguez-Clare (1998), owners of capital first decide which sector to invest their capital in. Subsequently, those who invest in the import-competing sector lobby the government for protection. With the interaction between the lobby and the government modeled as a Nash bargaining game between the two, the lobby is able to compensate the government for the deadweight losses generated in the second stage. However, there is an additional welfare loss through the intersectoral misallocation of capital in the first stage in the expectation of protection down the road. The lobby does not compensate for this welfare loss arising from the sunk overinvestment in the import-competing sector. However, this misallocation raises the possibility that a government with foresight will commit to an FTA in a prior stage “zero.”

Mitra (2002) also provides another commitment-based argument for a small country to sign an FTA. In that paper, the Maggi-Rodriguez-Clare version of the Grossman-Helpman framework is augmented with the decision on the part of specific-factor owners in the import-competing sector to incur fixed lobby formation costs (including to build relationships with politicians in power) prior to the actual lobbying, but with no possibility or role for capital mobility (as capital is specific to and fixed in the import-competing sector in this model). This

modified model as well ends up with the main Maggi-Rodriguez-Clare result: Generally governments with low bargaining power with respect to domestic lobbies are the ones that precommit to FTAs.

Grossman and Helpman (1995b) have also used their “political contributions” approach to theoretically identify political economy factors responsible for the emergence of FTAs. They derive two main results: An FTA between two countries is impossible if in every sector the same country has a higher tariff. Political feasibility of the FTA requires that when tariffs on some goods are higher in one country, other tariffs are higher in its partner country. Sometimes political feasibility is achieved through the exclusion of certain sectors from the FTA.

Reciprocity and Unilateralism in Trade Policy

While considerable work has been done on the role of reciprocity in trade policy by Bagwell and Staiger (1996, 1999, 2002) and Hillman and Moser (1996), the causal interaction between unilateral and reciprocal trade liberalization has not been as well researched. Krishna and Mitra (2005) study this link by suitably modifying the Mitra (1999) lobby formation framework. (See Bhagwati, 1990, for an early informal introduction and exposition of this idea and Coates & Ludema, 2001, for a totally different channel that relies on risk sharing.) The specific question Krishna and Mitra try to answer is whether unilateral trade liberalization by one country can induce reciprocal liberalization by its partner country, absent any negotiations between the two countries. The main result of their paper is that unilateral liberalization by one country can raise the incentives in the partner country for an export lobby to form and alter the political economy equilibrium there, which then features trade liberalization.

Declining Industries and Protection

One of the results of the Grossman-Helpman model is that larger politically organized sectors are politically more powerful and can obtain greater protection through lobbying. This is not consistent with the empirical observation that protection is often greater for declining sectors. Freund and Ozden (2008) try to explain this by bringing an assumption from behavioral economics into the Protection for Sale model. The assumption is that of loss aversion. The modified utility function is written as

$$U = c_0 + \sum_{i=1}^N u_i(c_i) - I h \left(\bar{U} - c_0 - \sum_{i=1}^N u_i(c_i) \right), h' > 0, h'' < 0, h(0) = 0 \quad (30)$$

where \bar{U} is reference utility (which is a result of a past price vector faced by individuals as producers and consumers), I is an indicator variable that takes the value 1 if utility falls below \bar{U} , and $h(\cdot)$ is the loss aversion function, which basically shows a utility loss as a function of

the shortfall of the current utility from the reference utility. Here, $h' > 0$ means that the utility loss is increasing in this shortfall and $h'' < 0$ means that a given increase in this shortfall keeps resulting in smaller and smaller additional utility losses at higher and higher levels of the total utility loss (diminishing marginal losses). This results in an additional gain from protection for an industry's specific-factor owners whose domestic price has declined (through a decline in the world price) and taken their utility below the reference level. For small to intermediate reductions in the world price, where the marginal loss aversion remains fairly high (can fall off to zero for very large world price reductions), loss aversion increases the size of the tariff. As a result, as the world price declines, tariffs keep increasing within a certain range to compensate for the utility loss. When a sector is politically organized this effect gets magnified. Tovar (2009) is another paper along similar lines. Both these papers also provide empirical support for the predictions of their modified model.

Another approach to explaining declining industry protection is the one taken by Baldwin and Robert-Nicoud (2007). They use a model with free entry and exit. An expanding industry (as a result of positive demand shocks) leads to new entry until profits are driven down to zero, with quasiprofits of those firms, that remain in the industry and have already incurred sunk costs of entry, also possibly declining. As a result, lobbying intensity of the industry might decline. However, for a declining industry there is no possibility of entry, as a result of which quasiprofits of existing firms can increase through protection. Thus, declining industries lobby harder for protection and get more protection in return.

The Choice of Policy Instruments

An unambiguous result in the theory of commercial policy is that, absent trade-related policy goals or distortions, a direct subsidy is more efficient than a tariff that results in the same amount of protection (Bhagwati, 1971; Bhagwati & Ramaswami, 1963; Johnson, 1965). The simplest explanation is that tariffs generate revenues while subsidies swallow them up (see, for instance, Bhagwati & Ramaswami, 1963).

Rodrik (1986) is the first author to look at this issue in a political economy setup, which is a simplified version of the Findlay-Wellisz model. He argues that there is a free rider problem associated with lobbying for a tariff since it protects all firms within the corresponding import-competing industry. However, there are many examples of production subsidies being firm specific, based on location, ownership, and so forth, in which cases the free rider problem are not expected to exist. Thus, the free rider problem in lobbying for tariffs may result in a smaller level of endogenous tariffs than endogenous subsidies, leading to a reversal of the welfare ranking of tariffs and subsidies.

Mitra (2000) argues that there is no need to resort to the welfare ranking of endogenous tariffs and subsidies to explain the prevalence of the former. Import-competing firms themselves may prefer tariffs to subsidies since there may be a congestion problem in noncooperative lobbying among firms in an industry that may be offset by the free rider problem in the case of the tariff (and, of course, not in the case of a firm-specific subsidy).

Grossman and Helpman (1994) address this issue in a different way, within the framework of their “Protection for Sale” model. They argue that the greater efficiency of subsidies relative to tariffs leads to more vigorous competition among lobbies for subsidies. The government can take greater advantage of such a situation by grabbing a larger proportion of the surplus. As a result, lobbies will want the government to commit in advance (say, through an article in the constitution) to the less efficient redistributive instrument, namely tariff.

Other Extensions

Conconi (2003) models “green lobbies” within a menu auctions framework of the Grossman-Helpman type. Both trade policies and environmental policies, which are simultaneously determined, are affected by these green lobbies. When there are no restrictions on trade policies, so that they can be adjusted in response to changing environmental policies, green lobbies exhibit a tendency to push to adopt higher pollution taxes. On the other hand, green lobbies lead to a bias for lower pollution taxes when a commitment to free trade has already been made by the national government.

Other extensions of a lobbying approach to trade policy include the study of the impact of preferential trade liberalization on the incentives for multilateral liberalization. See, for instance, Krishna (1998), Stoyanov and Yildiz (2015), and so forth. For the impact of import-competing and export lobbies on preferential trade agreements, see Chi and Yildiz (2021).

Empirical Research in Lobbying and Trade Policy

The Older Empirical Literature

The older empirical literature on lobbying and trade policy takes a reduced-form, kitchen-sink approach. The hypotheses tested arise from casual economic intuition with the background of the old Peltzman-Stigler pressure group approach. They are not rigorously derived as structural equations within a rigorous model or through a comparative static exercise within a model. For example, Baldwin (1985) shows that in the United States higher import penetration at the industry level, representing higher benefits from lobbying, leads to higher levels of protection.⁵ Similarly, other things remaining equal, an industry with a smaller number of firms is able to get a higher level of protection, providing support for the pressure group theory in which there could be a free rider or collective action problem in lobbying, arising from a coordination problem between people with common interests, namely, producers within an industry. This coordination problem becomes worse with a greater number of firms (producers).

More work along these lines, together with empirical comparisons of the pressure group model with models emphasizing voting strength, foreign policy, social welfare, and so forth, has been done by Gawande (1998). Trefler (1993) is the first paper to look at the impact of import penetration on the nontariff barrier (NTB) coverage ratio of an industry, while

endogenizing the level of imports as a function of protection. He finds that NTB coverage ratios rise with import penetration. He also shows that not accounting for the endogeneity of imports leads to an underestimate of the impact of NTBs on imports.

The New Empirical Literature (with the Grossman–Helpman Framework as the Foundation)

Testing the Predictions of the Basic Grossman–Helpman Model and Estimating the Model Parameters

The next generation of empirical work on lobbying and trade policy uses the Grossman–Helpman model as the basic framework. The main result of the Grossman–Helpman model can be written in the following estimable form, after adding a disturbance term, ξ_i :

$$\frac{t_i}{1+t_i} = \frac{1}{(\alpha_\Lambda + a)} \cdot \frac{I_i z_i}{\varepsilon_i^m} + \frac{(-\alpha_\Lambda)}{(\alpha_\Lambda + a)} \cdot \frac{z_i}{\varepsilon_i^m} + \xi_i \quad (31)$$

Clearly, $\frac{t_i}{1+t_i}$ can be regressed on $\frac{I_i z_i}{\varepsilon_i^m}$ and $\frac{z_i}{\varepsilon_i^m}$. The coefficient estimates of these two terms, calling them $\hat{\beta}_1$ and $\hat{\beta}_2$, respectively, can be used to arrive at estimates, $\hat{\alpha}_\Lambda = \frac{-\hat{\beta}_2}{\hat{\beta}_1}$ and $\hat{a} = \frac{1}{\hat{\beta}_1} + \frac{\hat{\beta}_2}{\hat{\beta}_1}$, with their standard errors being calculated using the delta method. This estimation requires data on t_i , which is the import protection variable, on import demand elasticity variable, ε_i^m , and on the political organization indicator variable, I_i .

One of the problems is that ε_i^m s in both Goldberg and Maggi (1999) and Gawande and Bandyopadhyay (2000) are taken from Shiells et al. (1986) who estimated them using import and import price data. Any estimate has an estimation error (measurement error) associated with it. Also, these elasticities can be endogenous with respect to tariffs. Goldberg and Maggi, therefore, bring ε_i^m to the left-hand side as follows:

$$\frac{t_i \varepsilon_i^m}{1+t_i} = \frac{1}{(\alpha_\Lambda + a)} \cdot I_i z_i + \frac{(-\alpha_\Lambda)}{(\alpha_\Lambda + a)} \cdot z_i + v_i \quad (32)$$

They also experiment with additionally taking z_i to the denominator of the left-hand side (without any change in results) since it could also be subject to endogeneity. Gawande and Bandyopadhyay transfer neither ε_i^m nor z_i to the other side but use instrumental variables to correct for measurement error and endogeneity.

All import tariffs in the real world are nonnegative, while the Grossman–Helpman model obtains negative equilibrium tariffs for unorganized sectors. There are two solutions to the estimation of the tariff equation in this case. Goldberg and Maggi assume that there is a latent variable, t_i^* , which is the actual tariff coming out of the model but the actual variable, t_i , that is observed is the censored variable, which gets equated to 0 the moment t_i^* hits 0 or goes below it. The solution Gawande and Bandyopadhyay adopt is to add a constant term to the final protection equation derived in the Grossman–Helpman model.

The two papers also differ on the construction of the political organization dummy, I_i . While Goldberg and Maggi use a threshold in the political contributions (based on regularities in the data) to construct this variable, Gawande and Bandyopadhyay regress political contribution at the industry level on imports from a few major countries in that industry as separate variables. One or more of these variables becoming significant leads to assigning a value of 1 to I_i and 0 otherwise. While in the Goldberg and Maggi paper the main focus is the estimation of the protection equation, Gawande and Bandyopadhyay also give importance to the determination of contributions. In addition, Gawande and Bandyopadhyay also bring intermediate inputs into the analysis and the protection on them to the right-hand side of their main estimating equation.

An important similarity to note is that both papers use NTB coverage ratios as their protection variable, despite tariff being the variable that is determined by political economy forces within the model. The reason they provide is that tariffs are determined by GATT and WTO negotiations and, therefore, not solely through domestic political economy factors. Also, they argue that NTB coverage ratios are strongly, positively correlated with tariffs. Goldberg and Maggi experiment with various multiples of their NTB coverage ratios to see how the estimated parameters of the model change as a result.

Data on industry-level imports and output are easily available from the National Bureau of Economic Research Trade and Immigration data file to construct z_i , and, as already mentioned, ε_i^m is available from Sheills et al. The NTB data are from the United Nations Conference on Trade and Development. Contributions data were constructed by Kishore Gawande from information on political action committees.

As predicted by theory, the estimated coefficient of $\frac{I_i z_i}{\varepsilon_i^m}$ is positive and that of $\frac{z_i}{\varepsilon_i^m}$ is negative in both Goldberg and Maggi as well as Gawande and Bandyopadhyay. Based on these coefficients, Goldberg and Maggi obtain a value of $\beta = a/(1 + a)$ that equals 0.986, which implies an estimated a equal to 70, whereas Gawande and Bandyopadhyay obtain an estimated a equal to 3,175. The estimate of α_Λ is in the range of 0.84–0.88 in Goldberg and Maggi, while in Gawande and Bandyopadhyay it is much higher. While, overall, the predictions of the model hold, the high estimated values of a and α_Λ are concerning for two reasons. First, it means that the government is close to maximizing aggregate welfare, which questions the value of modeling political economy forces in the determination of policy. Second, a high

estimated α_Λ is not only unrealistic, it does not make sense in the absence of incentives to get politically organized as reflected in a very high value of a , which represents virtually a welfare-maximizing government.

Mitra et al. (2002) test the predictions of the Grossman–Helpman Protection for Sale model using Turkish data.⁶ Because no data were available on trade-related (or other) political contributions, it was determined whether sectors were politically organized from the membership data for the Turkish Industrialists and Businessmen Association (TUSIAD) and newspaper reports. Then this determination was statistically validated using classification methods based on discriminant analysis. Nominal rates of protection, effective rates of protection, and NTB coverage ratios were used as alternative measures of protection.

Mitra et al. (2002) find considerable support for the main predictions of the Protection for Sale model, but the parameter estimates are again unrealistically high. An interesting result that arises is that the value of the estimated a parameter is greater during years under the democratic regime than under dictatorship. Consistent with the resulting incentives, the estimated α_Λ is lower during the democratic years.

Attempts at Resolving the Puzzle of High Estimated Values of a and α_Λ

How does one resolve this puzzle of high estimated values of a and α_Λ ? Trade protection is one among several concessions lobbies get from the government, so focusing merely on trade policy might result in an overestimate of a and α_Λ . Ederington and Minier (2008) (and some others as well) have argued that a sector cannot just be politically organized for one type of policy and not for others. As a result, Ederington and Minier bring another policy, namely, production subsidy, simultaneously with trade policy into the Grossman–Helpman model. However, the lower welfare cost of production subsidy means there will be no tariffs and only subsidies in equilibrium, which is a problem for researchers studying endogenous trade policy. The authors then go on to introduce increasing and convex administrative costs of subsidies. Then the marginal administrative cost of the subsidy will have to be equated to the marginal consumption distortion cost of the tariff (as the marginal production distortion cost is common between the two). And, then, the result obtained is nothing close to the Grossman and Helpman final result.

There is also the possibility of misclassification of sectors as organized and unorganized. Imai et al. (2013) argue that if, after controlling for z_i/e_i , tariffs across industries are arranged in increasing order and placed in quantiles, then a quantile regression of tariffs on z_i/e_i is expected to produce a negative sign at the first percentile and a positive sign at the 100th percentile. Actual estimation shows the signs to be reversed, indicating a strong possibility of misclassification and the data being strongly inconsistent with the Protection for Sale model.

The possibility of misclassification has been explored in detail by Mitra et al. (2006) using both U.S. and Turkish data. The authors start with the Grossman–Helpman tariff equation written in the following form:

$$\frac{t_i}{1+t_i} \frac{\varepsilon_i^m}{z_i} = \frac{(I_i - \alpha_\Lambda)}{(\alpha_\Lambda + a)}. \quad (33)$$

They then do an equality-of-means test as well as a test of similarity of distributions of $\frac{t_i}{1+t_i} \frac{\varepsilon_i^m}{z_i}$ between the organized and unorganized groups as constructed by Goldberg and Maggi (and, then, also, using the Gawande and Bandyopadhyay classification). For the Turkish groups of organized and unorganized sectors, the Mitra et al. (2002) classification is used. In no case are means or distributions found to be different across the two groups. Thus, the authors go on to assume that all sectors are politically organized. They compute the mean of $\frac{t_i}{1+t_i} \frac{\varepsilon_i^m}{z_i}$ (for all sectors as well as, alternatively, just for the net import sectors) to arrive at an estimate of $\frac{1}{(\alpha_\Lambda + a)}$. Based on this estimate, for each value of α_Λ , there is an implied value of a . The range of implied a 's turns out to be much more plausible (34 and below).

One of the problems with the empirical estimation of the Grossman–Helpman model for the United States is that while the theory is for tariffs, the empirical work is for NTBs. The fundamental difference between the two, as argued by Facchini et al. (2006), is that while with the former the government collects all the revenues (and can distribute it in the way it likes), in the case of the latter the equivalent NTB rents are not fully captured by the government. They further argue that if “imperfect rent capturing” is fully taken into account by the government and various lobbies, the final equilibrium protection equation derived can be somewhat different. Estimating this equation with NTBs as the dependent variable, the authors find that, while the estimated a parameter is not very different from the one in Goldberg and Maggi, the estimates of α_Λ are much more realistic (in the range of 0.26–0.49). With many of their specifications, Facchini et al. find that the estimated proportion of rents captured is at a minimum of about 70%.

Introducing and Investigating the Impact of Foreign Lobbies

In Gawande et al. (2006), lobbies representing foreign firms lobby against tariffs on their own products (which are the home country's imports), thereby lowering those tariffs and increasing aggregate welfare in the home economy. The estimated a remains high. However, an interesting and plausible result that comes out of this empirical investigation is that the government values a dollar contributed by a domestic lobby as much as a dollar contributed by a foreign lobby.⁷

Stoyanov (2009) goes a step further in the context of an FTA. It is shown both theoretically and empirically that external tariffs of an FTA member (in this case, Canada) are negatively impacted by foreign lobbies outside the FTA and positively impacted by within-FTA foreign lobbies. The U.S. producers lobby for higher external tariffs in Canada, since that will result in more imports by Canada from the United States through trade diversion. However, foreign producers from outside the NAFTA would like lower external tariffs, which would help them with their sales. The estimated a and α_Λ parameters also are much more realistic, with the

former in the range of 0.27–0.36 and the latter lying between 0.02 and 0.07. Additionally, Stoyanov (2014) shows how lobbies in prospective partner countries lobby a country's government to enter a trade-diverting FTA. This FTA, in turn, ends up strengthening such lobbies, that, in turn, prevent multilateral liberalization down the road.

While Gawande et al. (2006) and then Stoyanov (2009) look at the role of foreign lobbies, within the context of domestic and imported final products, in the determination of endogenous tariffs, Blanchard et al. (2021) look at a somewhat related issue of tariff determination in the context of global value chains. The political economy approach adopted is a reduced-form version of the Grossman–Helpman approach in that the government's objective function is a weighted sum of welfares. Global value chains are shown, both theoretically and empirically, to play a moderating role in tariffs.⁸ A higher share of foreign inputs in the domestic final output of an industry reduces tariffs on imports of those inputs. Similarly, a high share of domestic output in foreign final production in an industry also reduces tariffs on imports in that sector.

Lobby Formation and Participation at the Firm Level

Some very important empirical work has been done by Bombardini (2008) on lobby formation and participation at the firm level, where firms are heterogeneous. The firm heterogeneity is modeled in a perfectly competitive setup, where the amount of the sector-specific factor in each firm within an industry is different (heterogeneous). With fixed costs of lobby participation and formation being the same across firms within an industry, it is shown that, in equilibrium, the largest firms within an industry turn out to be the ones that participate in lobbying. Only such firms make political contributions in equilibrium. Bombardini also finds theoretically that the share of output in an industry accounted for by firms organized politically (those who participate in lobbying) becomes a measure of the degree of political organization of an industry. Using this measure of political organization (in place of the 0, 1 measure of the original Grossman and Helpman model), Bombardini estimates her new protection equation and finds support for her main hypothesis: Industries with a high degree of political organization (i.e., firms making political contributions constituting a high proportion of industry output) will have their tariffs decrease with their import penetration and import demand elasticity, and those with a low degree of political organization will see their tariffs increase with import penetration and import demand elasticity. The estimated α parameter remains extremely high but the estimated α_A is much lower (between 0.12 and 0.18). However the interpretation of this parameter is different now. It is the share of specific-factor owners making positive political contributions in the country's overall population. Bombardini also investigates the contributions side of the model. The contributions level and the probability of a firm participating politically are both increasing in the size of the firm, as predicted by the model.

Gawande and Magee (2012) investigate the free rider problem in lobbying along somewhat similar lines. But in their framework, only the largest firm contributes in equilibrium. In their empirical work, that incorporates this form of the free rider problem, they arrive at much lower and more realistic parameter estimates of α .

Lobbying for FTAs and Their Content

Using a modified lobbying framework, Blanga-Gubbay et al. (2020) study theoretically and empirically “lobbying for globalization,” which takes the form of lobbying for and against the ratification of an FTA. Using data from FTAs the United States is involved in and corresponding lobbying data, these authors show that larger firms do all the pro-FTA lobbying. In particular, such firms lobby for FTAs that benefit them, through, for instance, giving them better access to foreign markets. In a follow-up paper, Blanga-Gubbay et al. (2021) examine how lobbying by heterogeneous firms can determine the nontariff provisions included in trade agreements, such as rules on intellectual property rights, investment, labor and environmental standards, and sanitary and phytosanitary measures.

Downstream and Upstream Industries Lobbying Against Each Other

What is missing from most of the literature is the counterlobbying against any tariff by downstream industries. For example, the automobile sector is likely to lobby against steel tariffs, while the steel industry will lobby for it. Gawande et al. (2012) incorporate upstreamness and downstreamness of sectors into their theoretical and empirical analysis. This is done within the Grossman-Helpman framework. The greater the downstream demand for a good as an input the lower is the tariff set on imports of that good. This demand also moderates the impact of import penetration and the import demand elasticity on the tariff. These effects counter the original Grossman-Helpman effects. Taking this counterlobbying into account yields lower and much more reasonable values of the estimated α parameter. Conconi et al. (2021) incorporate this kind of lobbying by proponents (petitioners) and opponents (downstream industries) of an antidumping duty. These two types of lobbying affect the likelihood of approval of an antidumping duty in opposite directions. The authors find support for their hypothesis using U.S. data.

The State of the Literature and Promising Future Research Avenues

This final section first summarizes what is discussed in this article, then assesses the state of the literature and finally ends with some suggestions on promising avenues for future research.

This article has focused on one important aspect of the political economy of trade policy, namely, the role of lobbying. There is also a literature on voting models in trade policy, which, while mentioned briefly in the introduction, has not been discussed in detail in this article as it is outside its scope. Within the literature on lobbying and trade policy, the emphasis in this article is on the post-1990 literature, pioneered by Grossman and Helpman (1994), which led to many more papers by them as well as many other scholars.⁹ While many of the papers that emerged following “Protection for Sale” were theoretical, it also gave an impetus to theory-driven empirical work on the political economy of trade policy, primarily because the result

that came out of the model could be written down in the form of an estimable equation featuring the key parameters of the model. Besides, estimating that equation enabled the testing of the main hypotheses from this theory.

The two parameters of this model that are estimated are the weight the government places on aggregate welfare relative to political contributions in its objective function and the proportion of a country's population that is politically organized. The hypotheses coming out of the theory are (a) protection given to a politically organized sector is decreasing in its import penetration and the absolute value of import demand elasticity, with the signs being reversed in the case of a sector that is politically unorganized; and (b) holding other things equal, a politically organized sector gets a higher level of protection than an unorganized sector. In fact, in the theory, the latter's protection is negative. The empirical literature provides support for these hypotheses (except that protection is never negative), but the estimated values of the key parameters seem to be unrealistically high, at least in the initial major empirical papers. Several successful and unsuccessful attempts to fix the theory and empirics have been discussed in this article. These include bringing into the analysis the following: competition between upstream and downstream lobbies, imperfect capturing of NTB rents by the government, and foreign lobbies. Investigating the possibility of misclassification of sectors into organized and unorganized is also discussed in this context.

This article also discusses the applications of this menu auctions-based approach to lobbying to issues such as lobby formation, trade agreements, unilateralism versus reciprocity in trade policy, lobbying for protection in declining industries, and the choice of policy instruments. A few other extensions are also discussed. The extension of lobbying to the firm level along with its empirical investigation is discussed in detail.

It is important to recognize that while one can test the predictions of the Grossman-Helpman model, those predictions are not unique to that model. Helpman (1997) within a common framework derives the predictions of various political economy approaches: political contributions, median voter, and political support function. The predictions are similar except that there aren't separate predictions for politically organized and unorganized groups other than in the political contributions approach of Grossman and Helpman. It is important to note that there is very little empirical work to try to evaluate the relative empirical evidence for competing models leading to observationally similar predictions. One exception is the paper by Eicher and Osang (2002), where they run a horse race between the Grossman-Helpman political contributions (Protection for Sale) model and the Findlay-Wellisz tariff formation function model. They find the data to be supportive of the former (and not the latter) as the correct specification. More work of this sort is needed to compare different approaches. However, approaches may be complementary to each other in that each might explain a part of what is happening in the real world, and that needs to be recognized.

Firm-level lobbying has been studied by Bombardini (2008), as already explained. In such a framework, only the largest firms in an industry end up lobbying for the tariff. For that industry, the degree of political organization is the share of these largest firms in the industry's overall output. While counterlobbying by downstream and upstream industries has

been studied in the literature (already discussed in this article), it might be worth looking at counterlobbying at the firm level in downstream industries. In other words, the largest firms in the downstream industries might be lobbying against tariffs in their respective upstream industries, so that the higher share of the largest firms in the downstream industries that end up lobbying, the lower is the tariff in the upstream industry. This can be worked out in a model and then tested empirically. This is certainly an avenue of research worth pursuing.

Rodrik (1995) in his “Handbook” chapter emphasized the importance of the choice of instruments, that is, why are tariffs being used to redistribute incomes to the government’s favored groups when more efficient instruments like production subsidies exist? Some of the explanations have been reviewed in this article. However, it needs to be emphasized that there has not been major progress on research on this issue since the time of the publication of Rodrik’s “Handbook” chapter. A possible explanation is that in a small open economy, there is not much of a reason for a downstream industry to oppose a subsidy granted to an upstream industry, but in the case of a tariff there is. The government, therefore, might prefer a tariff regime over a subsidy regime, since in the former the counterlobbying will limit deadweight losses and at the same the government through lobby competition will be able to extract a larger amount of contributions. Much more thinking is needed in this regard. These new predictions on the choice of instruments can also be taken to the data.

Then there is the question of why trade policy is biased against trade. Rodrik (1995) raised it also in his “Handbook” chapter. Why do we not see trade policies that promote trade beyond free trade? Rodrik argues that saying that export subsidies are banned at the WTO is not enough, as the natural question then becomes: Why did countries agree to such a policy? It shows the absence of effective export lobbies. Rodrik argues that tariffs in the initial stages of development of countries have been important sources of revenues for the government but then there might be considerable hysteresis in them, which might explain why those import tariffs remain in relatively advanced stages of development (when tariffs no longer remain a major source of revenue). Brainard and Verdier (1997) construct a dynamic version of the Grossman–Helpman model with adjustment costs in factor mobility across sectors. This adjustment cost means tariffs endogenously determined in the current period through lobbying are an increasing function of the previous period’s tariffs. There has been very little progress made on this question since the Brainard–Verdier paper. Another feature to add to a model on this question is the fact that any subsidy (including import or export subsidy) uses up revenues that can be quite costly to raise. Also, looking at lobby formation in this context sounds promising to me.

Finally, there are very few models of informational lobbying in the endogenous trade policy literature. Lobbying might be a way of providing valuable information to politicians. Politicians can ensure that is what is happening by raising the barriers to entry into lobbying. Then a firm’s willingness to incur the high lobbying entry cost can be a way of confirming that the firm is willing to provide valuable information, policies based on which will be beneficial both to the firm and the government. Two papers that take the informational approach are Karabay (2009) and Ludema et al. (2010). Thus, this type of lobbying has rarely been modeled in the trade literature, which clearly means more work needs to be done in this direction.

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Notes

1. More recently, Dutt and Mitra (2005) use a political support function approach within a two-sector, two-factor Heckscher–Ohlin model to perform a cross-country empirical investigation of the role of political ideology in trade policy determination.
2. For more details on the older approaches discussed in the previous subsection, see Rodrik (1995).

3. The weight on the marginal profit is explained by the fact that an additional α_A it has to be factored in to get to $(\alpha_A + a)$ s, so an equal amount needs to be subtracted from the profit term.
4. See Bagwell and Staiger (2002) for details.
5. There have been quite a few contributions made to the older empirical literature on lobbying and trade policy. Prominent examples are Caves (1976), Baldwin (1985), Marvel and Ray (1983), Ray (1981), Brock and Magee (1978), Schattschneider (1935), Destler (1986), and so forth. By no means is this list exhaustive. More details on this earlier empirical literature can be found in Rodrik (1995) and Gawande and Krishna (2003).
6. See also McCalman (2004) for a test of the Protection for Sale model for Australia.
7. In this context, it is important to mention Blanchard (2010), who analyzes theoretically the impact of international ownership on endogenous tariffs within a lobbying model. If foreign production facilities are owned by nationals of the home country, it is likely to reduce tariffs. Also, foreign ownership of domestic production will lead the domestic government to set trade policies to affect prices in order to expropriate profits of those firms. See also Blanchard (2007) for the role of preferential trade agreements in this context.
8. For another paper with results similar in flavor, see Blanchard and Matschke (2015) where the authors study the relationship between offshoring and preferential market access.
9. Interested readers can find details on the older literature in Rodrik (1995).

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