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## FOREIGN LOBBIES AND US TRADE POLICY

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### **ABSTRACT**

In popular discussion much has been made recently of the susceptibility of government policies to lobbying by foreigners. The general presumption has also been that such interactions have a deleterious effect on the home economy. However, it can be argued that, in a trade policy context, bending policy in a direction that would suit foreigners may not in fact be harmful: If the policy outcome absent any lobbying by foreigners is characterized by welfare-reducing trade barriers, lobbying by foreigners may result in reductions in such barriers and raise consumer surplus (and possibly improve welfare). Using a new data set on foreign political activity in the US, this paper investigates the relationship between trade protection and lobbying activity empirically. The approach taken in this paper is primarily a structural one. To model the role of foreign and domestic lobbies in determining trade policy, we develop first a theoretical framework building on the well-known work of Grossman and Helpman (1994); the econometric work that follows is very closely linked to the theory. Our analysis of the data suggests that foreign lobbying activity has significant impact on trade policy - and in the predicted direction: Tariffs and non-tariff barriers (NTBs) are both found to be negatively related with foreign lobbying activity. We consider also extended specifications in which we include a large number of additional explanatory variables that have been suggested in the literature as determinants of trade policy (but that emerge from outside of the theoretical structure described above) and confirm the robustness of our findings in this setting.

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## I. Introduction

A growing body of work in economics views trade policy as being determined not by a benign welfare-maximizing government (as was assumed in the traditional treatments of this topic) but rather by interactions between politicians and organized special interest groups.<sup>1</sup> The emphasis in much of this literature (particularly on the empirical side) has been on the link between *domestic* industry lobbies and the government. Recent events,<sup>2</sup> however, have shifted the focus in popular discussion (as well as in the consequent policy proposals related to campaign finance reform) to *foreign* lobbies and the extent to which these are involved in the political process; the general presumption being that such interactions between foreigners and the domestic government have a deleterious effect on the home economy.

In a trade policy context, however, it can be argued that bending policy in a direction that would suit foreigners may not in fact be harmful: *If* the policy outcome absent any involvement by foreigners is characterized by welfare-reducing (or sub-optimal) trade barriers, lobbying by foreigners for reductions in such barriers may in fact shift trade policy in a direction that improves domestic consumer surplus (and possibly welfare).<sup>3</sup> But is it so? Do foreign lobbies have a significant effect on US trade policy? If so, by what magnitude? It is this relationship between foreign lobbies and trade barriers that this paper attempts to investigate empirically.

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<sup>1</sup>See, for instance, the pioneering papers by Findlay and Wellisz (1982), Hillman (1982), Bhagwati and Feenstra (1982), Mayer (1984), Magee, Brock and Young (1989) and, most recently, the pioneering work of Grossman and Helpman (1994). This interest group approach to modeling trade policy determination itself has antecedents in the seminal work of Stigler (1971), Peltzman (1976) and Becker (1983), all of whose work on regulation focused, *inter alia*, on why the political process favors specific industries over others.

<sup>2</sup>These include the widespread accusations relating to foreign campaign contributions in the 1996 US Presidential campaign and the conviction of Representative Jay Kim (Republican-CA) for his acceptance of illegal contributions from Korean sources. For a more detailed discussion of these events and an attempt to quantify the significant presence of foreign lobbies in the US, see the recent MIT Ph.D. dissertation of Byoung-Joo Kim (1999).

<sup>3</sup>It is perhaps worth emphasizing emphasize that while lower trade barriers (on account of foreign lobbying, say) can certainly be expected to improve consumer surplus, they do not necessarily translate into aggregate welfare improvement. The latter would require a demonstration that trade barriers, in the absence of foreign lobbies, would in fact be at a sub-optimal level – a contention whose validity is difficult to evaluate given the imperfectly competitive nature of the product market assumed in our analysis (as will be discussed in detail shortly) and the complex combination of tariff and non-tariff barriers actually imposed in reality. Our focus in the present paper is solely on the relationship between lobbying activity and trade policy.

The theoretical foundation that we develop to motivate our estimating equations borrows extensively from the well-known model of endogenous policy determination developed by Grossman and Helpman (1994) – which is altered here suitably to account for the role of foreign lobbies. This framework assumes a government that trades off its desire to deliver a higher level of welfare to its polity with its desire for political contributions from organized industry lobbies (which, in turn, provide political contributions to the government so it may move policy in a direction that would suit them). A substantial merit of this framework, from at least the standpoint of empirical testing, is that despite its relative rigor and complexity, trade policy is predicted to be a simple function of relatively few variables. This, as we show, proves to be true even after foreign political involvement is introduced. In the import-competing sectors, for instance, equilibrium tariffs are simply a log-linear function of the import-penetration ratio, the import demand elasticity, the presence (or absence) of domestic and foreign lobbying activity in that sector and finally a parameter that measures the emphasis that the government places on contributions relative to overall welfare. This parsimonious specification enables relatively easy econometric implementation – a task that we accomplish using econometric methodology similar to that detailed in the recent and pioneering work of Goldberg and Maggi (1999) and Gawande and Bandhyopadhyay (2000).<sup>4</sup>

Our estimation results suggest that foreign lobbying has a statistically and economically significant impact on trade policy: The presence of an organized foreign lobby representing a particular industrial sector appears to have as much effect in lowering trade barriers against imports in that sector as does the presence of a domestic lobby in raising trade barriers there. *Ceteris paribus*, US consumers gain unambiguously from the presence of foreign political activity. To evaluate the robustness of our results, we also estimate “extended” specifications in which we include a large number of additional explanatory variables that have been suggested in the literature as determinants of trade policy (but that emerge from outside of the theoretical structure described above).<sup>5</sup>

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<sup>4</sup>See also the recent paper by Mitra et al. (2002) which uses this framework to investigate the endogenous determination of trade policy in Turkey.

<sup>5</sup>Trefler (1993), which studied the protective impact of trade barriers in a context where protection

As we discuss in greater detail later, the results are highly robust to changes in data handling and construction methodology and to changes in specification. Estimates of the parsimonious specification implied by the theory compare very well with those obtained from the extended regressions discussed above.

Overall then, this paper makes the following contributions: First, it is the only formal study of foreign lobbying activity and its economic impact of which we are aware. While several scholars and observers have commented on the presence and importance of foreign lobbying in the context of trade policy formulation,<sup>6</sup> none has studied it in the manner or the detail that we do here. Second, a substantial component of the research effort on this paper has involved the compilation of a new data set on foreign political activity (whose structure and sources we describe in detail in Section V and in the attached Data Appendix). Finally, we believe that our results, which run counter to much of the popular opinion on foreign lobbies, contribute to the public debate on the impact of foreign lobbies that has recently arisen in the context of discussions on campaign finance reform.

The rest of this paper proceeds as follows. Section II describes briefly the extent of foreign lobbying and the evolution of the legal context in which foreign lobbies operate in the US. Section III describes the theoretical framework that underlies our empirical exercise. Section IV presents the econometric model and discusses data and estimation issues in detail. Section V describes our results. Section VI concludes.

## II. Foreign Political Activity in the United States

Government concern regarding foreign influence on policy has a long history in the United States. Thus, for instance, political activity by foreigners was very much on the mind of

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itself was treated as endogenous and reported dramatic evidence to this effect, is an excellent example of work in this tradition. As we have discussed in Gawande and Krishna (2001), a recent survey of empirical analyses in the literature on the political economy of trade policy, the use of extended specifications has the merit of (a type of) comprehensiveness – every observable variable that we conjecture to be relevant to the determination of trade policy may be included as an explanatory factor. However, this also has the demerit that the variables included in the right-hand side sometimes have only very tenuous links with the theories that motivate their inclusion in the regression equations. On this point, see also Rodrik (1995).

<sup>6</sup>See, for instance, Baldwin (1985), Choate (1990) and Hillman and Ursprung (1988).

James Madison when he successfully proposed that legislation impacting the commerce of the United States with foreign powers require only the approval of a simple majority, rather than a super-majority, as was required for treaties. His reasoning was that foreign powers could more easily defeat a tariff proposal by influencing, via bribes, the nine (out of the, then, twenty six) senators required to defeat a super-majority than they could the fourteen required to defeat a majority. Madison argued that

*The power of foreign nations to obstruct our retaliating measures [and with successful retaliation on the injurious restrictions of foreign powers] on them by a corrupt influence would also be less if a majority should be made competent than if two-thirds of each House should be required to legislate acts in this case.*

The potential for harmful foreign intrigue was very real to the founders and was addressed in no fewer than fifteen of the *Federalist Papers*. Alexander Hamilton stated his view of the corrupting impact of foreign political presence by writing that

*One of the weak sides of republics, among their numerous advantages, is that they afford too easy an inlet to foreign corruption... Hence it is that history furnishes us with so many mortifying examples of the prevalence of foreign corruption in republican governments. How much this contributed to the ruin of the ancient commonwealths has been already disclosed. [Hamilton, Federalist #22]*

Further, Hamilton also argued that

*Nothing was more to be desired than that every practicable obstacle should be opposed to cabal, intrigue, and corruption. These most deadly adversaries of republican government might naturally have been expected to make their approaches from more than one quarter, but chiefly from the desire in foreign powers to gain an improper ascendant in our councils [Hamilton, Federalist #68].*

Nevertheless, as Corrado et al.(1997) note,<sup>7</sup> for many years there was no ban or limit placed on foreign political contributions. This changed in 1938 when, in the face of evidence of Nazi money spent to influence US political debate, Congress passed the so-called Foreign Agents Registration Act (FARA). This law required agents of foreign entities engaged in publishing “political propaganda” to register and disclose their activities, but it did not regulate political contributions. In 1966, after congressional hearings in 1962-63 revealed campaign contributions to federal candidates by Philippine sugar producers and agents of Nicaraguan president Luis Somoza, Congress moved to prohibit political contributions in any US election by any foreign government, political party, corporation or individual (except foreign nationals who were permanent residents of the US).

The contrast with restrictions on *domestic* influence in the electoral process may be clarified as follows. US nationals may make direct political contributions. US corporations and labor unions, while generally restricted from making contributions from their treasury funds to election candidates, may still make contributions through “voluntary” funds collected by “political action committees” (PACs), which are composed of their employees and members respectively.<sup>8</sup> Despite the 1966 regulations (described in the previous paragraph) seeking to prevent the influence of foreign interests on US policymaking, legal contributions from sources with foreign ties are still allowed. “Foreign agents”, i.e., US citizens acting as lobbyists for foreign governments or officials, foreign individuals, or foreign businesses or associations can make campaign contributions like any other US citizen provided that they are registered with the Justice Department (in accordance with the Foreign Agent Registration Act (FARA) of 1938 which we have mentioned above) and that the contributions are made with their own

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<sup>7</sup>The discussion that follows borrows extensively from the comprehensive Brookings survey by these authors.

<sup>8</sup>It is worth pointing out that contributions by US entities may be classified as either being in “hard money” (which is money that is limited and otherwise regulated through federal election laws and can be used *directly* in connection with election for federal office) or in “soft money” (which is generally subject to no limits but may only be used *indirectly* in the political process - for such purposes as “getting-out-the-vote” and “issue advocacy”. Corporations and unions, while banned from making hard money contributions, except through PACs (as described above), may still make unlimited soft money contributions - as can individuals. However, since our study is set in the 1970s, soft money contributors and contributions (which did not really assume significance until the early 1990s) are not an important consideration and we ignore them entirely.

funds. By all popular accounts, the fungibility of cash flows and generally lax monitoring of the activities of foreign agents has implied that in practice, agents of foreign interests have contributed actively to political campaigns on behalf of their principals.<sup>9</sup> It is on these foreign agents that we focus our attention in this study.

A measure of the extent of foreign agent activity in absolute terms and in relation to lobbying by domestic corporate PACs can be obtained by examining the following figures. At the beginning of the time period of our study, the 1978 election cycle, there were roughly 800 corporate PACs in operation. In comparison, in the same period, there were approximately 250 foreign agents in active operation. In the 1978 election cycle, these corporate PACs contributed approximately a total of 10 million dollars to federal election campaigns, whereas foreign agent expenditures added up to about 14 million dollars. Further, it may be noted that in contrast to foreign agents, domestic PACs are interested in a much broader range of economic policy making than simply trade policy or other externally related matters. Thus, it becomes clear that in the trade policy arena, the extent of foreign agent activity was not of an entirely lower order of magnitude than domestic lobbying. The impact on trade policy of this lobbying activity by domestic and foreign entities is what we study in the rest of this paper.

### III. Theory

The theoretical framework we use closely parallels that of Grossman and Helpman (1994) - but with some important modifications to allow for the role of foreign lobbies. Consider an open economy which is populated by individuals with identical preferences but different factor endowments. Each individual maximizes utility given by

$$U = c_0 + \sum_i u_i(c_i), \tag{1}$$

where  $c_0$  denotes consumption of the numeraire good, good 0 and  $c_i$  denotes consumption of goods  $i = 1 \dots n$ . Further, the sub-utilities  $u_i$  are assumed to be quadratic with parameters

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<sup>9</sup>For a detailed discussion and accounting of the role of foreign agents in recent campaigns, see <http://www.opensecrets.org>.



such that domestic demand for the non-numeraire goods is assumed to take the linear form

$$P_i = A - Q_i, \quad i = 1 \dots n. \quad (2)$$

where  $Q_i$  denotes aggregate consumption of good  $i$ .

Good 0 is assumed to be produced from labor alone by Ricardian technology (with input-output coefficient equal to one) and is assumed to be freely traded internationally in perfectly competitive markets. Goods  $i = 1 \dots n$  are assumed to be produced with constant returns technologies using labor alone (or alternately using fixed and specific capital, as in Grossman and Helpman, and technology which gives constant returns in labor), but are assumed to be sold in internationally segmented oligopolistically competitive markets with supply provided by fixed numbers of domestic and international firms (as in Brander and Krugman (1983)) which compete in Cournot-Nash fashion.<sup>10</sup>

Focusing on the home market for *any* good  $i$ , and using  $j(h, f)$  as a country index to denote home ( $h$ ) and foreign ( $f$ ), we let

$q_i^j$  denote the quantity sold of  $i$  by any one firm from  $j$

$P_i$  denote the equilibrium price of the good  $i$ ,

$\pi_i^j$  denote profits made by an individual firm from  $j$  operating in sector  $i$ ,

$\tau_i$  denote the specific tariff imposed on imports of good  $i$ ,

$n_i^j$  denote the number of symmetric firms from  $j$  operating in sector  $i$ ,

$n_i = n_i^h + n_i^f$  denote the total number of firms operating in  $i$ , and

$c_i$  denote the constant marginal cost of production involved in the production of  $i$ .<sup>11</sup>

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<sup>10</sup>It should be clear that considering alternative forms of competition, such as Bertrand competition, for instance, will not alter the basic result which we derive here – that domestic firms would like to have higher tariffs and that foreign firms would like to have tariffs against them lowered. With non-tariff barriers, we run into the possibility that both domestic and foreign firms may, under some circumstances, prefer to have higher levels of barriers on imports, as the well-known work of Krishna (1989) showed. In any event, as we discuss later, we examine both types of trade barriers separately and allow the results to tell us whether observed trade barriers are higher or lower with domestic and foreign lobbying.

<sup>11</sup>We should note that the assumption here that marginal costs of production are constant across domestic and foreign firms is made purely for *notational* convenience. Our resulting expressions do not change if we were to allow for costs to be different for domestic and foreign firms.

For any given tariff rate, the outcome of the oligopolistic competition in the home market may be easily derived: The  $n_i^h$  home firms each sell a quantity in the domestic market given by

$$q_i^h = \frac{A_i - c_i}{n_i + 1} + \frac{n_i^f \tau_i}{n_i + 1}, \quad (3)$$

and have profits given by

$$\pi_i^h = [q_i^h]^2. \quad (4)$$

Correspondingly, a foreign firm, facing import tax  $\tau_i$ , sells

$$q_i^f = \frac{A_i - c_i}{n_i + 1} + \frac{n_i^f \tau_i}{n_i + 1} - \tau_i \quad (5)$$

and makes profits

$$\pi_i^f = [q_i^f]^2. \quad (6)$$

Having described the features of the economy which determine equilibrium quantities and prices of goods as a function of trade policy, we move on to the determination of trade policy itself: As modeled by Grossman and Helpman (1994), trade policy is determined by interactions between the government and organized lobbies - here representing (separately) domestic and foreign firms.

The government's objective function is assumed to be a weighted function of lobbying contributions and the three components of welfare: consumer surplus, producer surplus and profits, in the following form:

$$G = \sum_{i \in L^h} C_i^h + a \left[ \sum_i n_i^h \pi_i^h + TR + CS \right] + b \sum_{i \in L^f} C_i^f, \quad (7)$$

where  $L^h$  denotes the sectors with organized domestic lobbies,  $C_i^h$  denotes lobbying contributions by the domestic lobby (if any) in  $i$ ,  $L^f$  denotes the set of organized foreign lobbies,  $C_i^f$  denotes foreign contributions, TR denotes tariff revenues, CS denotes consumer surplus and  $\sum_i n_i^h \pi_i^h$  denotes domestic producer profits,  $a$  is a constant reflecting the government's preference for welfare relative to domestic campaign contributions and finally  $b$  is a constant reflecting the government's preference for foreign contributions relative to domestic contributions. Differentiating the weights on foreign and domestic lobbying contributions allows us to empirically investigate whether they are in fact different.

The lobbies representing domestic and foreign firms in any sector would like trade policy to be set in a manner that suits them - for example, a domestic lobby in import-competing sector  $i$  would typically want import barriers on imports of  $i$  and import subsidies on imports of all other goods, whereas a foreign lobby in sector  $i$  would want this government to subsidize the imports of  $i$ . The interaction between the various lobbies and the government that we have in mind has the structure of a “menu-auction” problem - exactly as in Grossman and Helpman (1994). Thus, it is assumed that a lobby representing organized sector  $i$  makes political contributions to the government contingent on the trade policy vector it implements. The political equilibrium here is the outcome of a two-stage non-cooperative game in which lobbies choose their political contributions in the first stage and the government sets policy in the second. An equilibrium is a set of contribution functions (functions of the trade policy vector), one for each organized lobby group, such that each contribution maximizes the welfare of the lobby taking as given the joint welfare of the other groups and the political optimization of the government in the next stage, and an import tax vector that maximizes government objectives taking the contribution schedules as given.

We assume further that the contribution schedules of the lobbies are “truthful” (using the terminology of Bernheim and Whinston (1985) and Grossman and Helpman (1994)). This is to say that they truthfully reflect everywhere the true preferences of the lobbies - since they pay to the government the excess of the lobby's gross welfare for any given policy relative to some base level of net welfare  $B$  (which itself is endogenously determined). Formally, such

truthful contributions take the form

$$C_i^j = \max[0, W_i^j - B_i^j], \quad (8)$$

where  $W_i^j$  denotes the gross welfare of the lobby representing  $j$  in sector  $i$  and  $B_i^j$  is a constant denoting the lobby's net welfare.<sup>12</sup>

Letting  $\alpha$  denote the fraction of the home population that is organized into *any* domestic lobby, we can substitute (8) into the government's objective function to get as the government's maximand,

$$\sum_{i \in L^h} n_i^h \pi_i^h + \alpha(TR + CS) + a(\sum_{i \in L^h} n_i^h \pi_i^h + TR + CS) + b \sum_{i \in L^f} n_i^f \pi_i^f. \quad (9)$$

The first-order condition corresponding to the choice of  $\tau_i$ , following from  $\frac{\partial G}{\partial \tau_i} = 0$ , is

$$\sum_{i \in L^h} n_i^h \frac{\partial \pi_i^h}{\partial \tau_i} + a \sum_i n_i^h \frac{\partial \pi_i^h}{\partial \tau_i} + (a + \alpha) \frac{\partial \mathbf{TR}}{\partial \tau_i} + (a + \alpha) \frac{\partial \mathbf{CS}}{\partial \tau_i} + b \sum_{i \in L^f} \frac{\partial \pi_i^f}{\partial \tau_i} = 0. \quad (10)$$

which can be re-written as

$$(I_i^h + a) \sum_i n_i^h \frac{\partial \pi_i^h}{\partial \tau_i} + (a + \alpha) \frac{\partial \mathbf{TR}}{\partial \tau_i} + (a + \alpha) \frac{\partial \mathbf{CS}}{\partial \tau_i} + b(I_i^f) \frac{\partial \pi_i^f}{\partial \tau_i} = 0, \quad (11)$$

where  $I_i^h$  is an indicator variable that takes the value one if domestic sector  $i$  is organized (i.e., is represented by a lobby) and takes the value zero otherwise, and where  $I_i^f$  is defined analogously.

Working out the various terms in (11) (using (3), (4), (5) and (6)), substituting these back in and some tedious algebra (along with a minor approximation) gives us

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<sup>12</sup>The assumption that contributions are *truthful* is made here for expositional convenience and, strictly speaking, need not be made to determine the equilibrium trade policy vector, as Grossman and Helpman (1994) have shown. On this, see also Goldberg and Maggi (1999).

$$\frac{\tau_i}{P_i} = \left[ \frac{2I_i^h}{(a + \alpha)} + \left( \frac{2a}{a + \alpha} \right) \right] \left( \frac{X_i}{m_i} \right) \frac{1}{|\epsilon_i|} - \left[ \frac{2bI_i^f}{(a + \alpha)} \right] \cdot \left( \frac{X_i}{m_i} \right) \frac{1}{|\epsilon_i|} \quad (12)$$

where  $X_i$  denotes aggregate production of  $i$  in the home economy,  $m_i$  denotes imports and  $\epsilon_i$  is an imports elasticity measure – it measures the “observed” proportionate change in imports with changes in prices, i.e.,  $\frac{\frac{\partial m_i}{m_i}}{\frac{\partial P_i}{P_i}}$ , when the price changes are caused by changes in tariffs. Overall, the prediction of the model regarding the cross-sectional determinants of tariffs (as represented by (12) above) are quite intuitive. Sectors that are politically represented by organized domestic lobbies are, *ceteris paribus*, likely to receive more protection (i.e.,  $I_i^h$  enters positively). Sectors in which there is foreign political presence are likely to receive less protection (i.e.,  $I_i^f$  enters negatively). Finally, sectors in which there is neither domestic political representation nor foreign political presence are predicted to receive positive protection (which should not be surprising – given the assumptions regarding the imperfectly competitive nature of the product market).<sup>13</sup>

In closing the theoretical discussion, we note two particular features of the theoretical framework we have just described.

First, consider “counter-lobbying” or the lobbying by sectors for lower import barriers on goods not produced by them (in a direction counter to that of the producers of these goods). It should be clear that our treatment of counter-lobbying is entirely analogous to that of Grossman and Helpman (1994). In both analyses, profits of domestic producers are independent of the prices of goods other than those they sell. And, in both, domestic producers care about prices of other goods since they are assumed to consume them. The lobbying by domestic interest groups reflects this concern in both cases (as seen from the fact that their contributions are contingent on the entire vector of goods prices and not just on the price of the good they produce). Thus, there is no substantial difference in the assumed structure of counter-lobbying in our framework when compared with the theory of Gross-

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<sup>13</sup>It is perhaps worth clarifying that the number of firms,  $n_i^f$  and  $n_i^h$ , and their individual outputs do not enter on the right-hand side of (12) since their effect is captured for most part by *total* imports and *total* domestic production as represented in (12) by  $\frac{X}{m}$ .

man and Helpman (1994) or with the empirical implementation of tests of this framework such as the one by conducted by Goldberg and Maggi (1999). We should note further that in ongoing research, Gawande and Krishna (2003), we are examining the issue of counter-lobbying (motivated by cross-sectoral usage of inputs) in a more formal and detailed manner by extending the theory to allow for heterogeneous usage of intermediate inputs across sectors (i.e., integrating the input-output matrix into the analysis) and using the *closed-form* predictions regarding trade protection that are derived as the basis for our estimating equations. However, our estimation results suggest surprisingly little counter-lobbying in US data. Estimates from simpler specifications that do not take intermediates usage into proper account are nearly identical to those obtained from the more sophisticated specification that we have described above.<sup>14</sup> We should note also that extensions of the theory of Grossman and Helpman (1994) (and thus also the present framework) in which labor market linkages provide a second “general-equilibrium” motivation for counter-lobbying (i.e., in addition to the intermediates linkages discussed above) can be considered.<sup>15</sup> However, the empirical relevance of such general equilibrium linkages in providing a motivation for political lobbying is likely to be small and we ignore them here.

Second, as we have already noted, varying the theory by assuming a different mode of product market competition *and* allowing protection to be provided by alternative instruments, such as voluntary export restraints may generate the prediction that foreign lobbies and domestic lobbies work in the same direction. If this were predominantly the case, estimation of (12) should deliver coefficients on domestic and foreign lobbying with the same sign. This is a possibility that is not precluded by our estimation methodology (as described below); we are willing to let the data inform us as to whether this is in fact the case.

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<sup>14</sup>These results are available from the authors on request.

<sup>15</sup>Thus, for instance, it can be argued that an increase in protection in one sector causes an increase in labor demand there, raising the price of labor and production costs in all other sectors.

## IV. Econometric Specification, Data and Estimation Methodology

### IV.1 Econometric Specification

Equation (12) motivates our basic estimating equation. After the introduction of an (additive) error term  $e_i$ , it can be expressed as

$$\frac{t_i}{1+t_i} = \beta_1 \left[ \frac{X_i}{m_i} \cdot \frac{1}{|\epsilon_i|} \right] + \beta_2 \left[ I_i^h \cdot \frac{X_i}{m_i} \cdot \frac{1}{|\epsilon_i|} \right] + \beta_3 \left[ I_i^f \cdot \frac{X_i}{m_i} \cdot \frac{1}{|\epsilon_i|} \right] + e_i, \quad (13)$$

where  $t_i$  denotes the (effective) ad-valorem import tax (i.e.,  $\frac{\tau_i}{P_i - \tau_i}$ ) and where  $\beta_1 = \left[ \frac{2a}{a+\alpha} \right]$ ,  $\beta_2 = \frac{2}{a+\alpha}$  and  $\beta_3 = -\frac{2b}{a+\alpha}$ . Clearly,  $\beta_1$  and  $\beta_2$  are predicted to be greater than zero and  $\beta_3$  is less than zero.

### IV.2 Data

In the estimation of the equation (13) above we employ primarily data from the period 1978-1982. The study is conducted at the four-digit SIC level of disaggregation, and is focused on U.S. manufacturing industries. Protection is measured using information on both tariffs and non-tariff barriers.<sup>16</sup> The inverse of the import penetration ratio,

$\frac{X_i}{m_i}$ , is taken directly from the annual survey of manufactures.<sup>17</sup> The import demand elasticity,  $\epsilon_i$ , for various industries is taken from the study by Sheills, Deardorff and Stern (1986). These are estimated at the three-digit SIC level, and are replicated at our four-digit level here.<sup>18</sup>

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<sup>16</sup>Previous studies that have examined empirically this new generation of political economy models (such as Gawande and Bandhyopadhyay (2000) and Goldberg and Maggi (1999)) have generally only used non-tariff barriers to represent the level of trade protection. Our study is the first to use US tariffs in this context.

<sup>17</sup>Since the concordance from the system of trade data (TSUS for these years, and Harmonized system in recent years) into the SIC system of industrial data is less than perfect, a few industries register zero imports. For these industries, the inverse import-penetration ratio is undefined and they are dropped. In the end, our sample comprises of 248 industries and accounts for over two-thirds of manufacturing value-added.

<sup>18</sup>The fact that most industry data (including that on political activity) is available at the four-digit level while data on elasticities is only available at the three-digit level poses a potential problem for us as to the level of disaggregation at which the analysis is to be conducted. Since much of the interest in the present exercise is in lobbying activity and since econometric analyses conducted by us elsewhere (Gawande and Bandhyopadhyay (2000)) suggests that elasticities turn out to bear relatively little of explanatory burden in this context, we choose to conduct the analysis at the four-digit level here.

The binary variables for domestic and foreign political organization,  $I$  and  $I^*$  respectively, are measured using political expenditures data we have constructed at the four-digit level. Issues pertaining to their measurement and those of the other variables are discussed at length below, and an appendix provides further details on their construction.

### *Protection Measures*

The theory on which our model is founded simply dictates that the protection measure equal the proportional difference between domestic prices and world prices. In practice, however, choosing between alternative trade barrier measures in order to capture the extent of protection is a difficult (and familiar) problem. In a world in which tariffs are the only form of protection, the choice is obvious: the tariff rate itself is the precise measure of the gap between domestic and foreign prices. When non-tariff barriers (NTBs) are in use instead, the situation is more difficult because we generally lack even moderately satisfactory measures of the tariff equivalents of those non-tariff barriers. What many researchers have used instead is the “coverage ratio,” i.e., the proportion of imports within any industry that is covered by non-tariff barriers, as the measure of protection by NTBs. When tariffs and NTBs are both known to be in use, it is hard to argue the merits of one protection measure over another. We are agnostic on this issue and simply report results using both tariff and NTB coverage ratios.<sup>19</sup>

### *Foreign and Domestic Lobbying Organization*

We compiled data on foreign political organization using U.S. government reports on the administration of the Foreign Agents Registration Act (FARA). As we have mentioned before, these are annual reports put together by the Attorney General’s office for the US Congress

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<sup>19</sup>The problems with using coverage ratios as a proxy for the extent of protection offered by NTBs are many and have been quite well discussed in the literature. Thus, for instance, the coverage ratio is an imprecise measure of non-tariff protection for at least the reason that NTBs are heterogeneous in their intensity. That is, industries with a large fraction of products covered by very lenient NTBs would be measured with a high coverage ratio and deemed to be highly protected, while industries in which a lower fraction of products are covered by highly restrictive barriers would be deemed to be less protected, and this may or may not reflect the aggregate extent of protection actually provided by the NTBs. We have nothing new to add to this issue here and, as we have just noted, simply proceed by using both tariff and NTB coverage ratios.



and contain detailed and extensive records of political spending patterns in the US of foreign commercial entities from various countries (through so-called “foreign agents” based in the US). All FARA entries were organized by industry and total spending by foreign commercial entities per unit value-added of imports for each industry was obtained. Similarly, for domestic lobbies, data was organized by industry and corporate lobby expenditures per unit value-added were determined by industry (See Data Appendix for details). The compilation of this data and their organization is an innovation in the literature, and a distinctive contribution of this paper to it. The FARA data we organized and use primarily is from the years 1978-82. In addition, to check robustness, we also use FARA data from the years 1972-1975. However, as we discuss later, the FARA reports are less detailed in this earlier time period and so we are forced to organize and limit our estimation exercises with this data accordingly.

Following the practice of Goldberg and Maggi (1999), thresholds were used to determine whether the foreign political organization dummy variable was to be assigned a value of one. This is done with a view to “allowing” for a more continuous representation of the intensity of lobbying activity while remaining true to the theory that quite specifically requires a discrete zero-one variable to represent the existence of lobbies. We used several thresholds for the purpose of investigating the robustness of the results to a variety of definitions for  $I^*$ . The domestic political organization variable  $I$  was also defined on the basis of thresholds. In the cases central to our discussion, the domestic political organization dummy was assigned a value of one if the mean of domestic PAC spending per thousand dollars of sectoral value-added (in the period under study, 1978-1982) was in excess of 0.05 and 0.10. Foreign political organization was assigned as follows. The percentile distribution of expenditures per unit value-added was first determined. Four percentile thresholds, in increasing order of expenditures per unit value-added, are presented in the table: the 0<sup>th</sup> percentile, the 50<sup>th</sup> percentile, the 75<sup>th</sup> percentile and the 85<sup>th</sup> percentile. For any given threshold, say the 50th percentile, the sector was assigned an  $I^* = 1$  if that sector was in that percentile for *all* of the four years in the sample period (1978, 1979, 1981 and 1982).<sup>20</sup>

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<sup>20</sup>To ensure that our results are not being driven by the different ways in which the domestic and foreign

A separate set of results is reported for which an additional criterion was used to assign the foreign political organization variable: the FARA report had to have indicated specifically that the foreign agent had made efforts to contact officials from the US government. We take this to imply that those contributions were directed at influencing government policy. For this subset of the FARA contributions, four different  $I^*$ 's were constructed using the same percentile cutoffs. In sum, eight sets of regressions are reported for each threshold used to determine domestic political organization: Four sets corresponding to the cutoffs used to determine foreign political organization and four additional sets when only those FARA entries which indicated that the relevant foreign agent had specifically made efforts to lobby the US government were used.

### *Import Elasticities and Other Variables*

$\frac{X_i}{m_i}$  is the inverse import-penetration ratio and is measured using readily available census data on domestic production and imports. Import demand elasticities were taken from the well known study by Sheills, Stern and Deardorff (1986). As we have already discussed, in order to conduct the analysis at the four-digit level (and thereby exploit the detailed information on industry characteristics - political activity in particular - that are available at this level) their estimates of elasticities at the three-digit SIC level were replicated at the four-digit level for this study (i.e., for every four-digit SIC industry, the corresponding three-digit elasticity was directly used). Since the import demand elasticities on the right-hand side of (13) are proxied by import demand elasticity estimates rather than actual measures, there is a potentially severe errors-in-variables problem that must be dealt with, given the widely varying levels of precision associated with the estimates. We deal with this as in Gawande and Bandhyopadhyay (2000), where Fuller's (1986) method is used to purge the elasticity data of the errors-in-variables problem.

### **IV.3 Estimation**

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political organization variables are assigned, we also ran the IV regressions using quartile cut-offs for both. As we discuss in the next section, this does not impact the results by much. Those results were reported in the working paper version of this paper and are available from the authors upon request.

Estimation of (13) raises a number of issues having to do with the right-hand-side variables in the equation. First, the right-hand-side variables, the import penetration ratio and the lobby dummies indicating whether or not a given sector is politically organized in the home country and abroad, are potentially endogenous. Moreover, what appears on the right-hand side is not simply a linear function of these endogenous variables but is rather the sum of non-linear products of these variables. In order to consistently estimate the structural coefficients of the system, we therefore use the two-stage least squares estimator proposed by Kelejian (1971). We use as “exogenous” variables mostly those variables used as instruments by Gawande and Bandhyopadhyay (2000) and Goldberg and Maggi (1999): Industry endowments (such as capital stocks, inventories, labor stocks and industry natural resource use) are used to instrument for the import penetration ratio. Seller concentration ratios and unemployment levels are used to instrument for domestic political organization (as suggested by the well-known work of Olson (1965)) and the ratio of exports by foreigners to the US to *their* worldwide exports in an industry (indicative of the relevance of the US as an export market to these suppliers) is used additionally to instrument for foreign political organization. Following Kelejian’s methodology, in the first stage, reduced form equations for each of the (transformed) right-hand-side variables (i.e.,  $\frac{X}{m} \cdot \frac{1}{|\epsilon|}$ ,  $I \cdot \frac{X}{m} \cdot \frac{1}{|\epsilon|}$  and  $I^* \cdot \frac{X}{m} \cdot \frac{1}{|\epsilon|}$ ) are estimated using as instruments the exogenous variables listed above, their quadratic terms and their second-order cross product terms (see also Strickland and Weiss (1976) for a similar methodology in a different economic context).<sup>21</sup> Estimation in the second stage proceeds as usual.

## V. Econometric Results

Summary statistics for variables employed in our analysis are provided in Table A.1 titled “Descriptive Statistics.” The 1982 tariff data have a sample mean of 6.5%. NTB coverage ratios have a mean value of 0.08. Of primary interest are the absolute import demand elasticity  $|\epsilon|$  which has a mean of 1.49 and the inverse import penetration divided by the

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<sup>21</sup>Kelejian shows that if the nonlinear expressions, for example,  $\frac{X}{m} \cdot I$ , are regressed on linear, squared and first-order cross products of the exogenous variables in the system (13)-(16), then the familiar two-stage least squares estimator may be directly used, and has the desirable properties of consistency and asymptotic efficiency.

absolute import elasticity, or  $(X/m)/|\epsilon|$  (scaled by 100 as noted in the Table A.1), which has mean .30. As discussed earlier, we also estimate extended regressions in which the additional variables in the table (concentration ratio, scale, percent-unionized, wage and K/L ratio) are used.

We use a set of six tables to display our results. Tables I-IV contain estimates of (13) obtained using a variety of measures to measure the level of protection and threshold levels to assign  $I$  and  $I^*$ . Consider first Tables IA and IB. Here the protection measure is the tariff rate. A threshold of PAC spending per thousand dollars of sectoral value-added greater than 0.05 was used to assign the domestic political organization variable. As noted earlier,  $I^*$  is assigned using four different quartile cutoffs (corresponding to the four columns of the table). In determining the quartile cutoffs for assigning  $I^*$ , Table IA considers *all* FARA entries in manufacturing while Table IB includes only those entries which specifically cite attempts to contact the government on the part of the foreign agent (as the respective table headers indicate). In Tables IIA and IIB, we present corresponding results with NTB coverage ratios used as the protection measure (and with methodology otherwise identical to the one used to get to Tables IA and IB).

In *both* sets of tables, the coefficients of central interest,  $\beta_2$  and  $\beta_3$ , are statistically significant and have the signs predicted by the theory.  $\beta_2$  is positive, implying that domestic political presence, holding all else constant, leads to higher trade barriers.  $\beta_3$  is negative, implying that foreign political presence, holding all else constant, is correlated with lower tariffs. This is true in all of the cases that we consider (in IA *and* IB). Notably, the magnitude of the foreign coefficient,  $\beta_3$ , tends to be higher when we consider higher percentile thresholds (with correspondingly smaller number of sectors with organized foreign representation). The closeness of the magnitudes of the coefficient estimates of  $\beta_2$  and  $\beta_3$  imply that in our theory the structural coefficient  $b$ , which measures the value of a foreign dollar in contributions relative to a domestic dollar, is about one. That is, the estimates suggest that the government places about equal weight on a dollar of domestic lobbying contribution as a dollar of foreign

lobbying contribution. This is an interesting and robust feature of our results.<sup>22</sup>

Tables III (A&B) and IV (A&B) present results with thresholds for domestic PAC spending per thousand dollars of value-added set at 0.10 instead. The results correspond closely to those presented in Tables I and II (A&B): the coefficient  $\beta_2$  is estimated significant and positive and the coefficient  $\beta_3$  is estimated significant and negative - just as the theory predicts. Here too, in almost all cases, the coefficient  $\beta_3$  is estimated to be higher when higher percentile requirements are imposed on the foreign political organization variable.

Estimates of the coefficient  $\beta_1$  are nearly always estimated to be insignificantly different from zero. It would appear from the definitions of  $\beta_1$  and  $\beta_2$  (given below (13)), that the structural parameter  $a$  may be recovered as the ratio of  $\beta_1$  to  $\beta_2$ , and this calculation would suggest that the value of  $a$  is insignificantly different from zero. That is, the estimates suggest that the government formulates trade policy almost entirely on the basis of political contributions, with little regard for welfare. That conclusion, however, is not necessarily warranted here: Using the coefficient  $\beta_2$  to infer the value of  $a$ , after using the fact that the fraction of the population that is organized has to be necessarily less than one (i.e.,  $\alpha < 1$ ), implies an implausibly high value of  $a$  instead.<sup>23</sup> This should perhaps not be too surprising: that plausible estimates of the parameter  $a$  have proven difficult to obtain is a well-known point in the literature by now (See Goldberg and Maggi (1999) and Gawande and Bandhyopadhyay (2000)).<sup>24</sup>

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<sup>22</sup>Formal statistical tests, not reported here, examining the equality of magnitudes of the coefficients  $\beta_2$  and  $\beta_3$  were conducted by us as well. In virtually all the parsimonious models using tariff and NTB data, this difference is found to not be statistically significant at the 10 percent level (the only exceptions being parsimonious models run with tariff data and using the 0<sup>th</sup> percentile cutoff for  $I^*$ , in which case the difference is statistically significant at the 5 percent level). This is also true for all the extended models of Tables V and VI where domestic and foreign lobbying have equivalent effects on tariffs (in opposite directions).

<sup>23</sup>Note that given our scaling by 100 of  $(X/m)/\epsilon$ , we have  $\frac{2}{a+\alpha} = \frac{\beta_2}{100}$ . Given the estimated values of  $\beta_2$  (around 0.2 - 0.5), this implies a very high value for  $a$ , when  $\alpha < 1$ .

<sup>24</sup>We should note, however, that problematic estimates of  $a$  should not lead the reader to necessarily be sceptical as to whether the estimates of  $\beta_2$  and  $\beta_3$  are informative about the *relative* impact of other determinants of trade policy (such as domestic political organization relative to foreign political organization and so on). As modeled, the “variable”  $a$  is constant across industries while the other variables vary in the cross section. That is to say, the former relates to the *level* of protection, while the latter also related to the *cross sectional variation* in protection.

The results based on the 1978-82 FARA data may then be summarized as follows: *ceteris paribus*, tariffs and NTB coverage ratios are strongly positively correlated with the presence of organized import-competing lobbies and negatively related to organized foreign lobbies. This is in accord with the theory. The quantitative implications of the results are as follows. Consider the 50th percentile cutoff definition for  $I^*$  in Table IA. The estimated value of  $\beta_2$  of 0.359 implies that if an industry is domestically organized then an increase of 0.1 in the scaled value of inverse import penetration - to - import elasticity ratio (where the scaling is 100) will raise the ad valorem tariff by 0.036. The estimated value of  $\beta_3$  of -0.29 implies that if an industry has foreign political organization then the same increase in the inverse import penetration-to-import elasticity ratio will lower the ad valorem tariff by 0.017. Hence, we see a countervailing influence on the U.S. tariff of a similar magnitude exerted by foreign lobbying. A more unconditional inference about lobbying organization and its impact on tariffs may also be made: Consider a representative estimate of  $\beta_2$  and  $\beta_3$  of say, 0.2. Given the mean value of  $\frac{x}{m.\epsilon}$  of 0.3 (see Table A.1. with descriptive statistics), this implies that on average, holding all else constant, the presence of an organized foreign lobby lowers tariffs in that industry by about 6 percent (which to say lowers the tariff rate from, say, 12 percent to 6 percent). Conversely, the presence of an organized domestic lobby raises the tariff rate in that industry by 7.5 percent. These estimates suggest economically significant impacts of domestic and foreign lobbying.

Finally, we observe the intuitively appealing result that these effects are larger when  $I$  and  $I^*$  are measured at higher percentile or spending requirements. Although the theory does not explicitly recognize any fixed costs of lobby formation and organization, in practice it is only after spending exceeds certain amounts that we would expect the industry to be politically organized for lobbying. The results suggest the presence of such fixed costs.<sup>25</sup>

As the results reported in Tables I through IV indicate, our results are robust to changes in the ways in which the data are handled (by varying thresholds levels for the assignment

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<sup>25</sup>Of course, there are other potential explanations and our analysis does not confirm this as the only explanation for the observed pattern of coefficient estimates. The “fixed costs” explanation, however, seems to be a compelling one. For a recent analytical investigation of the issue of endogenous determination of lobbies (in a Grossman-Helpman context) in the presence of fixed costs of lobby formation, see Mitra (1999).

of  $I$  and  $I^*$  or the measures of protection itself). A number of additional robustness checks were also conducted by us. We discuss these here briefly.<sup>26</sup> The first set of robustness checks involved the time period of our sample. The fact that our sample follows a major multilateral international trade negotiation round (the Tokyo round of the GATT) may raise doubts as to whether other factors such as international bargaining influence our estimates.<sup>27</sup> We should note first that proportionality associated with the tariff reduction schemes implemented after the Tokyo round mitigates this concern somewhat. Nevertheless, we repeated our exercises using trade protection and FARA data from the period 1972-1975 (which preceded the Tokyo round, which only started in 1976).<sup>28</sup> The limitation on the FARA data from this time period is that we do not have detailed data in the FARA reports on foreign agent activities. Specifically there is no data for this time period on the actual expenditures by foreign lobbyists and there are no data indicating specifically whether or not the foreign lobbyists made any effort to contact the US government. Lacking any data on actual expenditures, we proceeded first by using simply the 0<sup>th</sup> percentile criterion (i.e., a sector is assigned  $I^* = 1$  if it simply appears in the FARA data base in each of the years under consideration). In these runs, the theory still finds a confirmation in the data: the coefficient  $\beta_2$  is estimated significant and positive and the coefficient  $\beta_3$  is estimated significant and negative. Keeping in mind the extent of persistence of lobbying activity that we see in data on both domestic and foreign lobbying and in order to exploit the more detailed information that we have in our FARA data set on spending in the later period, we estimated (13) differently using data on tariffs and import penetration from the earlier period (1972-75) and data on political organization from the later period (1978-82). This amounts to assuming that the distribution of lobbying expenditures across industries in the period 1972-1975 was identical to the distribution in the period 1978-1982. The results showed a remarkable degree of similarity with the results

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<sup>26</sup>We do not present the results of these tests in detail here in the interest of brevity. The detailed results were, however, reported in an earlier working paper version of this paper which is available from the authors upon request.

<sup>27</sup>As such it is perhaps worth pointing out that this is a standing problem that has not adequately been dealt with in the literature - the majority of studies on endogenous protection have simply ignored this issue.

<sup>28</sup>Of course, this too was preceded by other GATT negotiation rounds. Nevertheless, estimates obtained using data before the Tokyo round after are roughly similar in magnitude to those obtained using data after the Tokyo round - suggesting that equilibrium outcomes in trade negotiations too reflect the same cross-sectional pressures.

reported in Tables I-IV. Foreign organization was nearly always negatively correlated with trade barriers and domestic lobbying nearly always positively so. The consistency of results using tariff rates from the period prior to the Tokyo round and those after the Tokyo round should perhaps not be greatly surprising. It is only indicative of the fact that even when trade barriers are negotiated internationally, equilibrium outcomes are subject to very same (or similar) domestic lobbying pressures that would operate if international negotiations were absent. The fact that lobbying data from a later period is used in a regression with trade policy from a prior period makes these results a less reliable - but it is heartening to see that our earlier results aren't contradicted by this run.

A second set of robustness checks involved the protection measure. In addition to the overall NTB coverage ratio, we also separated NTBs into simply quantitative NTBs and price NTBs and found the results to be largely invariant to this finer categorization. Foreign lobbying appears to reduce protection and domestic lobbying appears to raise it.

Finally, since the left-hand-side variable in (13), is censored below zero for some industries (for example, import subsidies that are akin to negative tariffs are not measured in the tariff data), we combined the Smith-Blundell (1986) method with Kelejian (1971) to obtain estimates of the Tobit model (13). The results seem invariant to this change (qualitatively speaking). Perhaps this should not be so surprising: the extent of censoring in the tariff data is small, and the Tobit results should therefore have been expected to be close to the linear instrumental variables estimates.

## **Extended Regressions**

The preceding regressions have all tested the implications of the theory in strict form—restricting the number of variables on the right-hand side to those narrowly predicted by the theory. However, the earlier literature on endogenous trade policy has suggested several other variables that may be relevant in explaining protection (see e.g., Baldwin (1985), Trefler (1993) and Gawande (1998) for a detailed discussion). Thus, for instance, one may expect that industries with higher seller concentration (and thus presumably more easily organized) or



with higher degrees of unionized workers to be better able to secure protection. Industries with greater numbers of low-skilled and low-wage workers or simply labor intensive industries may be more likely to get protection from governments which have “social justice” motivations or are subject to democratic pressures. Tables V and VI present our final set of IV results for tariffs and NTBs, respectively, in which the specification includes a number of these additional variables on the right-hand side.<sup>29</sup> We note first that the coefficients on many of the variables have the signs suggested and confirmed in the earlier literature.<sup>30</sup> Thus, unionization rates show up as positively impacting the protection rates as do concentration ratios. Labor-intensive sectors (which are more likely importable sectors) receive higher protection (as indicated by the negative coefficient on the K/L variable), as do industries with lower wages (and presumably greater numbers of low-skilled workers). Importantly, both our coefficients of central concern,  $\beta_2$  and  $\beta_3$ , retain their signs and statistical significance although they both see a drop in magnitudes.

### *Model Comparisons*

Our final set of results concerns the comparison of the extended models presented in Tables V and IV with the parsimonious specification (12) implied by the theory. We perform these comparisons of these nested models using the Akaike information criteria (AIC) and the Schwarz information criteria (SIC).<sup>31</sup> The augmented model with nine explanatory variables outperforms the corresponding parsimonious model on both criteria. For example, the AIC value of 2.321 in the second column of Table V is lower than the AIC value of 1.281 in the second column of Table IA. Hence, the extended model (at the 0th percentile  $I^*$  cutoff) is

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<sup>29</sup>For brevity, we have only presented results where the threshold for  $I$  is set at 0.05 as in Table IA and IB. Using the higher threshold of 0.10 or 0.25 did not make any qualitative difference to our results.

<sup>30</sup>A detailed discussion of the determinants of trade policy discussed in the earlier empirical literature and the contrast in methodology with recent structural attempts is provided in the recent survey by Gawande and Krishna (2001).

<sup>31</sup>These are preferred over other criteria such as adjusted  $R^2$  because they penalize excessive parameterization and reward parsimony. The AIC is computed as  $[-2(\ln L - k)/n]$  and the SIC value as  $[\ln L/n - 0.5k/n(\ln n)]$ , where  $n$  is the sample size,  $k$  is the number of regressors, and  $\ln L$  is the log of value of the maximum likelihood function. It should be clear that lower AIC values are preferred, while higher SIC values are preferred. While both criteria penalize the use of additional regressors more strictly than does the adjusted  $R^2$ , the SIC imposes this penalty more severely than does the AIC.

preferred over its smaller counterpart by the Akaike criterion. The SIC value of 1.104 in the second column of Table V is higher than the SIC value of 0.619 in the second column of Table IA. The extended model is thus preferred over its smaller counterpart even by the Schwarz criterion. The preference for the extended model is unanimous across all models estimated, as well as across both measures of protection – tariffs and NTBs. An implication of this finding is that the parsimonious model does omit possibly important influences. As it stands, the comparison is between a model built on a sound theory (the parsimonious model) against an *ad hoc* exploratory alternative (the extended model). In order for the comparison to show the way for future models, the alternative hypothesis should ideally emerge from analysis with the same level of rigor as the null. Nevertheless, the results from the extended model suggest that the lobbying and electoral influence of unions and the determination of lobbying organization itself are issues that among the important issues that deserve formal treatment.

## VI. Summary and Conclusions

Our primary interest in this paper is the study of foreign lobbies and their impact on trade policy. We have pursued this using a structural methodology - where a theoretical framework was developed and where the econometric work that followed was linked closely to this theory. Further, to account for the possible role of variables that have traditionally been suggested as determinants of trade policy (but which do not appear in the parsimonious specification implied by the theory we develop), we estimated “extended” specifications with a large number of additional variables included in the regression equation.

Our results suggest that foreign lobbying has a statistically and economically significant impact on trade policy: The presence of an organized foreign lobby representing a particular industrial sector appears to have as much effect in lowering tariffs against imports in that sector as does the presence of a domestic lobby in raising tariffs there. *Ceteris paribus*, US consumers gain unambiguously from the presence of foreign political activity. The results are quite robust to changes in specification.

It is our hope that these results, which run counter to much of the popular opinion on foreign lobbies, will contribute to the public debate that has recently arisen in the context of discussions on campaign finance reform on the costs and benefits of foreign lobbying activity.

## Appendix

The variables that appear in (13) are *ad valorem* tariff rates, domestic production, imports, import demand elasticities, domestic and foreign political organization. In this data appendix, we provide a detailed description of data sources and data construction methodology for the political organization variables (especially for foreign political organization). The remaining variables in (13) are quite familiar and we restrict ourselves to just a brief description here. As we have discussed in the text, IV estimation of (13) also requires information on a number of additional (instrumental) variables as does the estimation of the extended versions of (13) we have presented in Tables X and XI. We discuss each of these variables in turn.

### Foreign Political Organization: $I^*$

The data set used in the estimation of our empirical model was assembled using a report that is sent annually from the U.S. Attorney General to the U.S. Congress. The report is required by the 1938 legislation known as the Foreign Agent Registration Act (FARA)<sup>32</sup>. The report collects information about foreign agents, broadly defined, operating within the United States. The primary results presented in this paper used data taken from the reports that covered calendar years 1978, 1979, 1981, and 1982<sup>33</sup>.

Each entry in the FARA annual reports contains the following information:

1. Name and address of the foreign agent<sup>34</sup>,
2. Name of the foreign principal (usually a private firm, a industry association, or a

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<sup>32</sup>From 1938 until 1950, the report was produced by the Department of State, and then beginning in about 1950, by the Department of Justice

<sup>33</sup>The 1980 report was not used because it alone was not distributed to the regional repository libraries as it fell in-between the years during which hard-copy paper reports were sent out and when microfiche reports were subsequently distributed. Apparently, the one and only copy of it resides in the Department of Justice library in Washington DC

<sup>34</sup>A foreign agent, in the view of the USDOJ, is somebody who (a.) engages in political activities or acts in a public relations capacity for a foreign principal, (b.) solicits or dispenses any thing of value within the United States for a foreign principal, or (c.) who represents the interests of a foreign principal before any agency or official of the U.S. government. This is taken from a “Q&A” document, <http://www.usdoj.gov/criminal/fara/qA.htm>.

government agency),

3. The purpose of the agency, including any U.S. government entities contacted, and
4. Amount of money exchange in return for the agency services.

For each of the years in question there were generally about 1,300 entries. With the exception of the name of the agent (not useful for our purposes), all of this data was transcribed into an MS Excel spreadsheet, consisting of five columns:

- (*i.*) The calendar year of the activity,
- (*ii.*) The country of the principal,
- (*iii.*) The name of the principal,
- (*iv.*) The amount of money transacted for the agent's representation, and
- (*v.*) A "lobbying" indicator variable that was set to "1" if the description supplied in the report mentioned that the agent contacted either the U.S. Congress or any other U.S. government agency (including the military).

To this data, taken verbatim from the government report, we added a sixth column. This represented our best guess for the U.S. Standard Industrial Classification (SIC) code that the industry would fall into (were it producing in the U.S.). This was done using a combination of the principal's name (which was often quite straightforward, as in the case of sugar cooperatives), the description of the representation activity in the FARA report (again, often helpful if it mentioned, for instance, that the principal was concerned about U.S. automobile safety regulations), and standard business research tools that provide insight into an organization's line of business.

Our object was to provide each entry in our four-year FARA database with a three-digit SIC code. This task was made easier through the use of a computer-searchable version of

the SIC Handbook available on-line<sup>35</sup> which allowed us to classify even the most detailed of components. Allowance was made for the fact that while the government handbook used the 1987-version of the SIC system, the 1982 data set from the Gawande and Bandhyopadhyay (2000) paper, which we used for information on other variables, was based on the 1972-version of the SIC system. Only a small fraction of the entries had to have their 1987-version SIC codes changed to fit the 1972 scheme. We used the full range of the SIC system, even assigning 9XX SIC codes to principals that were from the government sector, despite the fact that for this paper we were only interested in SIC codes from the 200 – 399 range, that is, the manufacturing industries.

### **Categorization of the Raw Data**

The following is a breakdown of the original 5,302 entries by category of the foreign principal:

1. Fully 34% of the entries were from either tourist boards or government and/or private chambers of commerce that encourage general business contacts.<sup>36</sup>
2. 21% of the entries were related to government to government contacts that fall into the realm of international relations and not lobbying for a particular industry.
3. 18% of the entries fell into the service industries (SIC codes 400 – 859).
4. 5% were either agricultural or raw material industries (SIC codes 001 – 199).
5. Only 4% of the entries were foreign political parties that were campaigning among ethnic diasporas or seeking U.S. government recognition for their cause.

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<sup>35</sup>see <http://www.osha.gov/oshstats/sicser.html>.

<sup>36</sup>The large number of entries that fall into this category is somewhat puzzling because these agents, while they do meet the criteria mentioned in the above footnote, certainly qualify for exemption from reporting based on the following passage from the same document (<http://www.usdoj.gov/criminal/fara/qA.htm>). “For example, diplomats and officials of foreign governments, and their staffs, are exempt if properly recognized by the U.S. State Department. Persons whose activities are of a purely commercial nature or of a religious, academic, and charitable nature are exempt. Lawyers engaged in legal representation of foreign principals in the courts or similar type proceedings, so long as the attorney does not try to influence policy at the behest of his client, are exempt. Any agent who is engaged in lobbying activities and is registered under the Lobbying Disclosure Act is exempt”.

6. The remaining 18% were manufacturing industries in which we were interested. So, out of our four years of data, we ended up working with 934 entries from 71 different countries.

Because it was often impossible to neatly divide entries into a single SIC code, in less than 15% of the 934 entries, we assigned two or (rarely) three SIC codes to a single entry and then divided the lobbying fees listed in the report equally among these other codes. So, for instance, if a lumber company was listed as having paid \$10,000 for a lobbying effort in the U.S., we divided this sum into two entries: \$5,000 under SIC 241 and \$5,000 under SIC 242. Note that the numbers of entries provided above were tabulated *before* any splitting of entries took place.

### **Constructing the Input Table from the Raw Data**

In order to incorporate this raw data into our empirical model, we had to convert the above an indicator variable, “0” for unorganized and “1” for organized, that would correspond to each SIC code in our data set. This would allow us to compare tariffs in industries with only an organized domestic sector versus those with both a domestic *and* foreign organized lobbying presence.

In the interest of being able to later perform sensitivity analysis on our classification of the data, we used several different criteria in the assignment of the indicator variable. The most significant axis on which we divided the data set was:

1. Using the entire 934 entries on the basis that because all of these principals hired lawyers in the U.S. to represent them in some capacity, that they must be “organized” in a political-influence sense. Even if the U.S. government was not lobbied directly in many cases, it is plausible to assume that having a paid representative in the nation’s capitol would provide some added support, even if it relied upon informal contacts among individuals in the lobbying community.
2. Using a much more restrictive criteria to determine political organization: that is,

counting an industrial sector as organized *only* if it had a current contract that paid a positive amount of money *and* if the description of the activity provided in the FARA report specifically mentioned a U.S. government agency as having been contacted. Applying these restrictions reduces the number of usable entries to 437 from 48 countries.

It is interesting to note that the industrial sector (SICs 200-399) have a much higher proportion of entries that fall into the more restrictive “organized” category as described above. For the data set as a whole, only 22.6% (1200 out of 5302) of entries featured positive levels of lobbying *and* a direct lobbying connection to the U.S. government. But this contrasts with the 47% of SICs 200 – 399 industries (438/935) that met both criteria.

To obtain sectoral spending per unit value-added of imports, we used sectoral value-added in imports data provided by the UNCTAD. Total FARA expenditures by Industry were divided by imports value-added to obtain the percentile distribution of spending per unit value-added (for each of the cases corresponding to criteria 1 and 2 above) These distribution was then used to assign the foreign political organization dummy using quartile thresholds indicated in the results Tables I-XI.

## **Domestic Political Organization: I**

Domestic political organization was assigned using methodology identical to that used by Gawande and Bandhyopadhyay (2000) The variable  $I_i$  equals 1 if Political Action Committee campaign contributions/value-added by lobbies associated with industry  $i$  are greater than the threshold limits indicated in the tables. PAC spending data were obtained from the Federal Election Commission (FEC) for the four congressional election cycles 1977-78, 1979-80, 1981-82, and 1983-84.

Since corporate PACs are associated with individual firms they were mapped into SIC industries as follows. Using COMPUSTAT tapes, firms were classified into three digit or four-digit SIC industries. COMPUSTAT data apply only to publicly traded firms, which constitutes a small percentage of firms associated with corporate PACS.

Where possible, the remaining PACs were classified into two-digit SIC industries using the



mapping in Weinberger and Greavey (1984). The classification of PACs to SIC industries in this manner is one-to-many due to the multi-product nature of most firms. For example, it is possible that PAC spending by a firm, say, Firm A, maps into a four-digit industry (5555), a three-digit industry (333) and a two-digit industry (22). In the absence of further information, our methodology was to split the PAC spending equally across all four-digit industries into which the spending is mapped (summing up the mapped PAC expenditures at the industry level would erroneously inflate the measure of PAC spending for some industries and understate it for others). In the example, suppose PAC spending by Firm A maps into fifteen four-digit industries (say, one given by 5555, four industries 333x, and ten industries 22xx), and Firm A spent \$300,000. Then each of these fifteen four-digit industries would be allotted \$20,000 due to PAC spending by A. For any four-digit SIC industry, summing across the allotments from various corporate PACs, we obtain total PAC spending by that industry.

Labor PAC spending is not included in the analysis because most labor PACs are organized not by industry but by trade, and hence are difficult to classify into SIC industries. For example, the electrical workers who are employed across all SIC industries are organized as the (various regional) International Brotherhood of Electrical Workers PAC(s). A few important exceptions do exist. Thus, contributions by the United Auto Workers Union (UAW PAC) would in fact map precisely into the auto industries. We decided to maintain our focus on corporate PACs. Since the big three auto firms were large contributors, adding the expenditures of the UAW does not change the construction of I, which is the main use to which the PAC data are put.

## Other Variables

The remaining variables that appear directly in (13) are:

$\frac{X_i}{m_i}$ , the inverse of the import penetration ratio, measured as sectoral [production/imports]/100.

To construct this variable, value-added data were obtained from the American Survey of Manufactures and data on imports were obtained from the Compatible Trade and Produc-

tion (COMTAP) database.

$\epsilon_i$ , the sectoral import demand elasticities, which were obtained directly from the well known study of Shiells, Stern and Deardorff (1986). See the discussion in Goldberg and Maggi (1999).

$t_i$ , the effective ad-valorem tariff rates on imports, measured as the customs collection rates, which were obtained from Professor Robert Feenstra's database maintained at:  
<http://www.internationaldata.org/>.

**NTB Coverage Ratios**, the protection measure capturing NTB protection, is the proportion of imports subject to an NTB barrier. This was obtained using data from the UNCTAD and World Bank Study on non-tariff barriers to trade. See Gawande and Bandhyopadhyay (2000) for details.

As discussed in the text, estimation of (13) involved the use of instrumental variables for endogeneity correction. The instruments we used are the actual values, squares and a subset of cross products of the following variables (mostly obtained from the Annual Survey of Manufactures):

**log(herfindahl)**, the log of the herfindahl index of firm concentration within an industry

**% Scientists and Engineers**, the fraction of employees that are scientists and engineers

**% Unskilled**, the fraction of employees classified as unskilled

**Scale**, the output per firm

**K/L**, the capital labor ratio interacted with industry dummies and also

**%exports sold to the US** for the five major exporters to the US France, Germany, Italy, Japan and the UK.

Finally, the **Extended Models** include, in addition to some of the variables discussed above, the following regressors (also mostly obtained from the Annual Survey of Manufactures):

**Conc**, the 4-firm conc ratio

**% Unionized**, the fraction of the employees who are unionized

**Wage**, the production wage

**K/L**, the capital labor ratio.

Squares (but not cross products) of all instruments are used in the extended models for endogeneity correction.

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## A.1. Descriptive Statistics

Variables	Sample Means and Standard Deviations
$t$	0.065 (0.060)
NTB Coverage Ratio	(0.082) (0.137)
$\frac{X}{m}/\epsilon$	0.297 (1.641)
$\epsilon$	1.49 (1.100)
Concentration Ratio	0.4 (0.210)
Scale	0.1 (0.010)
% Unionized	0.45 (0.180)
Wage	0.009 (0.003)
K/L ratio	4.8791 (5.890)

The units of measurement and scaling are as follows:  $\frac{X}{m}$  is to be multiplied by 100, Scale is in billions of dollars, Employment is in millions, Wage is average production wage in thousands of dollars per hour, the K/L ratio is in ten thousand dollars per worker, the rest of the variables are in percentage terms or unit-less. See Data Appendix for detailed variable definitions.

**Table IA: Foreign Political Activity and Tariffs (1978-1982)**  
**(Domestic PAC Spending/\$ 1K Value Added Cutoff: 0.05)**

Parameters	$I^*$ Expenditures	$I^*$ Expenditures	$I^*$ Expenditures	$I^*$ Expenditures
	$0^{th}$ Percentile	$25^{th}$ Percentile	$50^{th}$ Percentile	$75^{th}$ Percentile
$\beta_1$	-0.007 (0.606)	-0.011 (0.940)	-0.015 (1.265)	-0.015 (1.315)
$\beta_2$	0.259 (4.203)	0.334 (5.373)	0.359 (5.588)	0.347 (5.726)
$\beta_3$	-0.766 (1.305)	-0.241 (2.860)	-0.29 (3.282)	-0.286 (3.329)
L	161.86	180.237	174.827	180.016
% Obs with $I^* = 1$	0.52	0.22	0.08	0.04
% Obs with $I = 1$	0.65	0.65	0.65	0.65
AIC	-1.28	-1.43	-1.39	-1.43
SIC	0.62	0.69	0.67	0.69

**Table IB: Tariffs with Foreign Activity Directed To Govt (1978-1982)**  
**(Domestic PAC Spending/\$ 1K Value Added Cutoff: 0.05)**

Parameters	$I^*$ Expenditures	$I^*$ Expenditures	$I^*$ Expenditures	$I^*$ Expenditures
	$0^{th}$ Percentile	$25^{th}$ Percentile	$50^{th}$ Percentile	$75^{th}$ Percentile
$\beta_1$	-0.008 (0.682)	-0.014 (1.242)	-0.015 (1.309)	-0.016 (1.327)
$\beta_2$	0.326 (4.709)	0.331 (5.557)	0.347 (5.719)	0.35 (5.730)
$\beta_3$	-0.186 (2.288)	-0.257 (3.010)	-0.286 (3.324)	-0.29 (3.356)
L	167.949	183.59	179.87	179.238
% Obs with $I^* = 1$	0.33	0.125	0.05	0.04
% Obs with $I = 1$	0.65	0.65	0.65	0.65
AIC	-1.33	-1.46	-1.43	-1.42
SIC	0.64	0.71	0.69	0.69

In each of the regressions, the domestic lobbies are taken to be organized if PAC expenditure for every thousand dollars of sectoral value added is greater than 0.05. In Table B, a specific indication of contact with the US government in the the FARA report is an additional requirement for the foreign political organization dummy to take the value one. See main text for details. The figures in parentheses are t-statistics (absolute values). L denotes the log-likelihood ratio. % Obs with  $I^* = 1$  and % Obs with  $I = 1$  denote the fraction of the total sample for which the dummy variables  $I^*$  and  $I$  were assigned a value of 1.

**Table IIA: Foreign Political Activity and NTBs (1978-1982)**  
**(Domestic PAC Spending/\$ 1K Value Added Cutoff: 0.05)**

Parameters	$I^*$ Expenditures <i>0<sup>th</sup> Percentile</i>	$I^*$ Expenditures <i>25<sup>th</sup> Percentile</i>	$I^*$ Expenditures <i>50<sup>th</sup> Percentile</i>	$I^*$ Expenditures <i>75<sup>th</sup> Percentile</i>
$\beta_1$	-0.012 (0.578)	-0.015 (0.748)	-0.019 (0.950)	-0.019 (0.962)
$\beta_2$	0.308 (2.955)	0.442 (4.151)	0.461 (4.267)	0.443 (4.311)
$\beta_3$	-0.006 (0.061)	-0.263 (1.824)	-0.301 (2.022)	-0.283 (1.945)
L	31.68	46.215	45.451	49.378
% Obs with $I^* = 1$	0.52	0.22	0.08	0.04
% Obs with $I = 1$	0.43	0.43	0.43	0.43
AIC	-0.23	-0.35	-0.34	-0.37
SIC	0.09	0.15	0.15	0.17

**Table IIB: NTBs with Foreign Activity Directed To Govt (1978-1982)**  
**(Domestic PAC Spending/\$ 1K Value Added Cutoff: 0.05)**

Parameters	$I^*$ Expenditures <i>0<sup>th</sup> Percentile</i>	$I^*$ Expenditures <i>25<sup>th</sup> Percentile</i>	$I^*$ Expenditures <i>50<sup>th</sup> Percentile</i>	$I^*$ Expenditures <i>75<sup>th</sup> Percentile</i>
$\beta_1$	-0.012 (0.588)	-0.017 (0.879)	-0.019 (0.959)	-0.194 (0.972)
$\beta_2$	0.359 (3.050)	0.415 (4.042)	0.443 (4.306)	0.446 (4.320)
$\beta_3$	-0.086 (0.622)	-0.229 (1.559)	-0.283 (1.943)	-0.028 (1.970)
L	36.024	48.935	49.218	49.156
% Obs with $I^* = 1$	0.33	0.125	0.05	0.04
% Obs with $I = 1$	0.43	0.43	0.43	0.43
AIC	-0.27	-0.37	-0.37	-0.37
SIC	0.11	0.16	0.17	0.16

In each of the regressions, the domestic lobbies are taken to be organized if PAC expenditure for every thousand dollars of sectoral value added is greater than 0.05. In Table B, a specific indication of contact with the US government in the the FARA report is an additional requirement for the foreign political organization dummy to take the value one. See main text for details. The figures in parentheses are t-statistics (absolute values). L denotes the log-likelihood ratio. % Obs with  $I^* = 1$  and % Obs with  $I = 1$  denote the fraction of the total sample for which the dummy variables  $I^*$  and  $I$  were assigned a value of 1.



**Table IIIA: Foreign Political Activity and Tariffs (1978-1982)**  
**(Domestic PAC Spending/\$ 1K Value Added Cutoff: 0.10)**

Parameters	$I^*$ Expenditures	$I^*$ Expenditures	$I^*$ Expenditures	$I^*$ Expenditures
	$0^{th}$ Percentile	$25^{th}$ Percentile	$50^{th}$ Percentile	$75^{th}$ Percentile
$\beta_1$	0.007 (0.576)	0.003 (0.197)	-0.004 (0.303)	-0.004 (0.341)
$\beta_2$	0.26 (2.689)	0.631 (4.031)	0.665 (4.258)	0.596 (4.532)
$\beta_3$	-0.062 (0.870)	-0.511 (3.108)	-0.564 (3.383)	-0.509 (3.523)
L	151.61	124.506	118.192	138.408
% Obs with $I^* = 1$	0.52	0.22	0.08	0.04
% Obs with $I = 1$	0.65	0.65	0.65	0.65
AIC	-1.20	-0.98	-0.93	-1.09
SIC	0.58	0.47	0.44	0.52

**Table IIIB: Tariffs with Foreign Activity Directed To Govt (1978-1982)**  
**(Domestic PAC Spending/\$ 1K Value Added Cutoff: 0.10)**

Parameters	$I^*$ Expenditures	$I^*$ Expenditures	$I^*$ Expenditures	$I^*$ Expenditures
	$0^{th}$ Percentile	$25^{th}$ Percentile	$50^{th}$ Percentile	$75^{th}$ Percentile
$\beta_1$	0.008 (0.659)	-0.003 (0.273)	-0.004 (0.331)	-0.005 (0.364)
$\beta_2$	0.36 (2.964)	0.57 (4.335)	0.596 (4.521)	0.605 (4.532)
$\beta_3$	-0.177 (1.593)	-0.478 (3.273)	-0.508 (3.513)	-0.519 (3.541)
L	144.148	143.28	138.17	136.32
% Obs with $I^* = 1$	0.33	0.125	0.05	0.04
% Obs with $I = 1$	0.65	0.65	0.65	0.65
AIC	-1.14	-1.13	-1.09	-1.08
SIC	0.55	0.54	0.52	0.52

In each of the regressions, the domestic lobbies are taken to be organized if PAC expenditure for every thousand dollars of sectoral value added is greater than 0.10. In Table B, a specific indication of contact with the US government in the the FARA report is an additional requirement for the foreign political organization dummy to take the value one. See main text for details. The figures in parentheses are t-statistics (absolute values). L denotes the log-likelihood ratio. % Obs with  $I^* = 1$  and % Obs with  $I = 1$  denote the fraction of the total sample for which the dummy variables  $I^*$  and  $I$  were assigned a value of 1.

**Table IVA: Foreign Political Activity and NTBs (1978-1982)**  
**(Domestic PAC Spending/\$ 1K Value Added Cutoff: 0.10)**

Parameters	$I^*$ Expenditures	$I^*$ Expenditures	$I^*$ Expenditures	$I^*$ Expenditures
	$0^{th}$ Percentile	$25^{th}$ Percentile	$50^{th}$ Percentile	$75^{th}$ Percentile
$\beta_1$	0.008 (0.429)	0.007 (0.379)	0.002 (0.105)	0.002 (0.119)
$\beta_2$	0.186 (1.243)	0.639 (2.736)	0.648 (2.861)	0.579 (2.921)
$\beta_3$	0.08 (0.730)	-0.436 (1.778)	-0.458 (1.891)	-0.396 (1.818)
L	44.016	25.111	25.937	36.782
% Obs with $I^* = 1$	0.52	0.22	0.08	0.04
% Obs with $I = 1$	0.65	0.65	0.65	0.65
AIC	-0.33	-0.18	-0.19	-0.27
SIC	0.14	0.07	0.07	0.11

**Table IVB: NTBs with Foreign Activity Directed To Govt (1978-1982)**  
**(Domestic PAC Spending/\$ 1K Value Added Cutoff: 0.10)**

Parameters	$I^*$ Expenditures	$I^*$ Expenditures	$I^*$ Expenditures	$I^*$ Expenditures
	$0^{th}$ Percentile	$25^{th}$ Percentile	$50^{th}$ Percentile	$75^{th}$ Percentile
$\beta_1$	0.009 (0.461)	0.004 (0.220)	0.002 (0.124)	0.002 (0.103)
$\beta_2$	0.193 (1.047)	0.51 (2.554)	0.578 (2.914)	0.587 (2.935)
$\beta_3$	0.082 (0.486)	-0.309 (1.395)	-0.394 (1.812)	-0.405 (1.844)
L	40.941	39.827	36.563	36.054
% Obs with $I^* = 1$	0.33	0.125	0.05	0.04
% Obs with $I = 1$	0.65	0.65	0.65	0.65
AIC	-0.31	-0.30	-0.27	-0.27
SIC	0.13	0.13	0.11	0.11

In each of the regressions, the domestic lobbies are taken to be organized if PAC expenditure for every thousand dollars of sectoral value added is greater than 0.10. In Table B, a specific indication of contact with the US government in the the FARA report is an additional requirement for the foreign political organization dummy to take the value one. See main text for details. The figures in parentheses are t-statistics (absolute values). L denotes the log-likelihood ratio. % Obs with  $I^* = 1$  and % Obs with  $I = 1$  denote the fraction of the total sample for which the dummy variables  $I^*$  and  $I$  were assigned a value of 1.

**Table V: Foreign Political Activity and Tariffs - Extended Specification  
(1978-1982)**  
**(Domestic PAC Spending/\$ 1K Value Added Cutoff: 0.05)**

Parameters	$I^*$ Expenditures	$I^*$ Expenditures	$I^*$ Expenditures	$I^*$ Expenditures
	<i>0<sup>th</sup> Percentile</i>	<i>25<sup>th</sup> Percentile</i>	<i>50<sup>th</sup> Percentile</i>	<i>75<sup>th</sup> Percentile</i>
$\beta_1$	0.001 (0.143)	-0.002 (0.273)	-0.004 (0.531)	-0.004 (0.587)
$\beta_2$	0.154 (3.271)	0.157 (3.297)	0.151 (3.053)	0.152 (3.057)
$\beta_3$	-0.12 (3.235)	-0.175 (3.123)	-0.165 (2.717)	-0.159 (2.729)
Concentration Ratio	0.083 (2.883)	0.069 (2.493)	0.072 (2.631)	0.073 (2.654)
Scale	-0.209 (0.661)	-0.463 (1.593)	-0.482 (1.670)	-0.458 (1.578)
% Unionized	0.068 (2.635)	0.082 (3.213)	0.082 (3.200)	0.075 (2.978)
Wage	-0.342 (0.169)	-0.612 (0.309)	-0.886 (0.441)	-0.695 (0.348)
K/L ratio	-0.003 (2.616)	-0.002 (2.347)	-0.003 (2.159)	-0.002 (2.214)
L	295.82	304.2	305.9	304.8
% Obs with $I^* = 1$	0.52	0.22	0.08	0.04
% Obs with $I = 1$	0.65	0.65	0.65	0.65
AIC	-2.32	-2.39	-2.40	-2.39
SIC	1.10	1.14	1.14	1.14

In each of the regressions, the domestic lobbies are taken to be organized if PAC expenditure for every thousand dollars of sectoral value added is greater than 0.05. See main text for details. The figures in parentheses are t-statistics (absolute values). L denotes the log-likelihood ratio. % Obs with  $I^* = 1$  and % Obs with  $I = 1$  denote the fraction of the total sample for which the dummy variables  $I^*$  and  $I$  were assigned a value of 1.

**Table VI: Foreign Political Activity and NTBs (1978-1982)**  
**(Domestic PAC Spending/\$ 1K Value Added Cutoff: 0.05)**

Parameters	$I^*$ Expenditures	$I^*$ Expenditures	$I^*$ Expenditures	$I^*$ Expenditures
	$0^{th}$ Percentile	$25^{th}$ Percentile	$50^{th}$ Percentile	$75^{th}$ Percentile
$\beta_1$	0.0001 (0.003)	-0.003 (0.188)	-0.005 -0.322	-0.006 (0.375)
$\beta_2$	0.285 (0.110)	0.323 (2.875)	0.311 2.662	0.325 (2.758)
$\beta_3$	-0.115 (1.330)	-0.224 (1.706)	-0.206 -1.441	-0.22 (1.593)
Concentration Ratio	0.076 (1.135)	0.062 (0.950)	0.066 1.017	0.067 (1.025)
Scale	1.412 (1.906)	1.187 (1.741)	1.162 1.709	1.201 (1.745)
% Unionized	0.058 (0.943)	0.076 (1.262)	0.075 1.239	0.068 (1.129)
Wage	-3.053 (0.642)	-3.737 (0.804)	-4.039 -0.852	-3.989 (0.842)
K/L ratio	-0.0001 (0.047)	0.003 (0.118)	0.001 0.217	0.0005 (0.199)
L	84.37	92.87	93.3	90.9
% Obs with $I^* = 1$	0.52	0.22	0.08	0.04
% Obs with $I = 1$	0.65	0.65	0.65	0.65
AIC	-0.62	-0.68	-0.688	-0.67
SIC	0.25	0.29	0.287	0.28

In each of the regressions, the domestic lobbies are taken to be organized if PAC expenditure for every thousand dollars of sectoral value added is greater than 0.05. See main text for details. The figures in parentheses are t-statistics (absolute values). L denotes the log-likelihood ratio. % Obs with  $I^* = 1$  and % Obs with  $I = 1$  denote the fraction of the total sample for which the dummy variables  $I^*$  and  $I$  were assigned a value of 1.