

# Firms and Trade Policy Lobbying in the European Union

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## Abstract

Our understanding of the role of firms in the making of European Union (EU) trade policy remains partial. This article contributes to expanding this literature by investigating under what conditions we observe more firm-centric lobbying, compared to business associational lobbying, in EU trade policy. We advance the arguments that firm-centric political lobbying in EU trade policy-making is a function of both industry and country-level characteristics. Relying on an original dataset of lobbying contacts with the EU Trade Commissioner, his or her cabinet members and the Director-General between 2014 and 2018, we find that the likelihood of firm-centric lobbying increases in (1) EU industries displaying high levels of multinational corporations' activity, global sourcing of intermediates and product differentiation and (2) countries characterized as liberal market economies. Besides showing that firm-centric models of trade travel well in the EU context, we contribute to advancing the understanding of how domestic political institutions affect the politics of trade.

**Keywords:** European Union; firms; global value chains; lobbying; trade policy

## Introduction

A growing body of literature provides evidence that firm-centric political activity is a dominant feature of the politics of trade across various political systems. The bulk of this literature has so far focused empirically on the politics of trade in the United States, showing that firms increasingly forego collective action, lobbying alone on behalf of their interests rather than relying on collective representation via industry-wide associations (Bombardini and Trebbi 2012; Kim 2017; Madeira 2016; Osgood 2017a, 2017b, 2018). But similar dynamics have been observed elsewhere. For instance, Plouffe (2017) and Osgood et al. (2017) find that firm-centric, rather than associational, lobbying is the main driver of support for trade liberalization in Japan and Costa Rica. As Osgood (2017b, p. 2) notes, 'the central finding about lobbying in this new literature is that, in many industries, firms play the dominant role in lobbying the government on trade policy, while trade associations either take the back seat or play no role whatsoever'.

But do firms play an important role in the making of European Union (EU) trade policy too? And, if so, what are the factors that trigger them to mobilize politically and lobby over trade policy? Moreover, do different EU member states' domestic institutional configurations matter in shaping the extent to which firms lobby alone over trade policy?

Current answers to these questions remain partial. For one, the majority of the EU trade policy literature has overlooked the specific role of firms because it remains strongly anchored, both theoretically and empirically, to standard models of trade politics emphasizing class-based or industry-based political cleavages (see Dür et al. 2021). Moreover, whilst a number of important recent works have had the enormous merit of pushing firms to the centre of this research agenda for the first time, they only partially draw

theoretically on existing, firm-centric models of trade politics and largely rely on qualitative, case-study based evidence (Curran and Eckhardt 2020, 2022; Eckhardt 2013, 2015; Eckhardt and Poletti 2016).

Expanding our knowledge of the role of firms in EU trade policy-making is paramount for several reasons. Theoretically, incorporating firm-centric models could open up new avenues for micro-founded accounts of preference formation and collective action in the analysis of EU trade policy-making. Empirically, assessing how firm-centric theories fare in accounting for the politics of trade in the world's largest trading block such as the EU would greatly increase our confidence in the generalizability of this literature's findings. Normatively, a better appreciation of the role of firms in EU trade policy-making is warranted given the widespread concerns that the rise of firms' lobbying could exacerbate political systems' tendency to produce (inefficient) policy outputs favouring narrow and concentrated interests (Hanegraaff and Poletti 2021).

In this article, we draw inspiration from broader firm-centric models of trade politics and existing works on the role of firms in EU trade policy to carry out a systematic investigation of the conditions under which firms are more likely to lobby via industry associations or instead lobby alone over EU trade policy. We advance, and test empirically, the main arguments that firm-centric political lobbying on trade policy in the EU should be affected by both sector-level and country-level characteristics. First, we contend that firm-centric political lobbying on trade policy in the EU should be affected by the degree of preference heterogeneity that exists within an industry. More specifically, we hypothesize that inter-firm preference heterogeneity, hence the likelihood of firm-centric lobbying, is a function of (1) differences in firms' ability to multinationalize production and to engage in trade centred around global value chains (GVCs), that is, arm's-length trade of intermediate inputs and final goods produced offshore or intra-firm trade arising from foreign direct investments (Baccini et al. 2017); (2) differences in firms' ability to export under conditions of intra-industry trade (IIT); and (3) services firms' participation in international trade (Baccini et al. 2019). Second, we argue that differences in institutional characteristics across countries should also affect the likelihood of firm-centric lobbying. Relying on the well-known conceptual distinction between liberal market economies (LMEs) and co-ordinated market economies (CMEs) (Hall and Soskice 2001), we hypothesize that firm-centric lobbying is more likely in the former case, where firms co-ordinate their activities primarily via hierarchies and competitive market arrangements, than in the latter case, where firms depend more heavily on non-market relationships to co-ordinate their endeavours.

To subject our arguments to empirical scrutiny, we rely on an original dataset of lobbying contacts with high-ranked members of the Directorate General Trade (DG Trade). We collected all contacts the EU Trade Commissioner, his or her cabinet members and the Director-General had with firms and associations, from both within and outside the EU, between 2014 and 2018 and coded the economic sector(s) in which these organizations were active, as well the type of market economy of the country of origin. We found that the likelihood of firm-centric lobbying increased in EU industries displaying high levels of multinational corporations' (MNCs') activity, global sourcing of intermediates and product differentiation. We also found that business organizations with headquarters in countries characterized as LMEs were more likely to lobby alone rather than collectively through trade associations.

The article proceeds as follows. First, we take stock of the state of the art of the EU trade policy literature. Second, we develop five arguments and hypotheses on the factors that are likely to motivate firms to lobby individually rather than through industry-wide associations. Third, we present our research design and empirical strategy. We conclude by summarizing the key findings of the article and suggesting avenues for further research.

## I. The Politics of Trade in the EU: The State of the Art

A growing number of works on the politics of trade in the United States and elsewhere document that lobbying over trade policy is increasingly firm-centric: Firms no longer exclusively rely on industry-wide associations to advance their interests, but often lobby alone, either in contrast to or alongside such associations (Bombardini and Trebbi 2012; Kim 2017; Madeira 2016; Osgood 2017a, 2017b, 2018; Osgood et al. 2017; Plouffe 2017).<sup>1</sup>

Compared to this rich body of literature, the study of the politics of trade in the EU has only recently started to focus on the role of firms as political actors. For a long time, the EU trade policy literature has remained firmly anchored to the standard sector model conceiving of the politics of trade as a political battle between export-oriented industries standing to gain from increased foreign market access opportunities and import-competing industries seeking to avoid the losses generated by greater exposure to foreign competition in domestic markets (Poletti and De Bièvre 2016). In this model, there is no preference-driven motive for independent lobbying activity by firms: Since all the firms in a given industry share a common price, a common tariff and a common preference over trade, they are expected to form a united front and lobby via industry-wide associations (Osgood 2017a). In line with these theoretical foundations, a rich literature on EU trade policy has developed over the past two decades, focusing primarily on the political preferences and patterns of political mobilization and influence of broad industry-wide associations advocating for either trade liberalization or protectionism (see Dür et al. 2021).

Two developments have contributed to widening the empirical scope of this literature to new sets of domestic actors. For one, the expanding body of work focusing on growing processes of contestation and politicization in EU trade negotiations has started to acknowledge the importance of civil society organizations and public opinion as key players in the making of EU trade policy (De Bièvre and Poletti 2020). But, again, the role of firms as political actors has remained mostly off the radar of these important contributions.

Instead, the scholarly interest in the political consequences of growing processes of internationalization of production in the EU's economy has contributed to shedding light, both theoretically and empirically, on the political role of firms in the making of EU trade policy. For instance, some works have shown that in an increasingly internationalized economy – such as that of the EU – there are an increasing number of import-dependent firms, that is, firms who rely on the income generated by imported goods or intermediate

<sup>1</sup> As Curran and Eckhardt (2018) note, sometimes, firms rely on flexible ad hoc co-operation between themselves or with industry-wide associations.

products for their production process, whose trade policy preferences cannot be assimilated to those of firms operating in export-oriented and import-competing sectors (Eckhardt 2013, 2015; Eckhardt and Poletti 2016). Whilst mostly focusing on the trade policy consequences of these actors' patterns of political mobilization, these works have crucially highlighted how processes of internationalization of production incentivize firm-level lobbying by causing intra-sectoral disagreements over the merits of EU trade policies amongst different firms. Drawing on these works' basic insights, Curran and Eckhardt (2020, 2022) have recently developed systematic arguments about the conditions under which firms lobby alone or through association in EU trade policy-making, contending and showing empirically that such a choice is a function of how protectionist-oriented trade policy responses to the anti-globalization backlash in the EU affect the interests of import-dependent firms.

These works have had the enormous merit of both placing firms firmly at the centre of the analysis of the politics of EU trade policy-making and triggering scholars to think systematically about the conditions under which firms lobby alone or collectively through trade associations. In other words, these contributions have opened the way for a systematic shift towards a better appreciation of the role of firms in EU trade policy-making.

At the same time, these works' incorporation of firm-centric models of trade politics remains partial, both theoretically and empirically. Theoretically, these works have focused only on a subset, albeit a greatly relevant one, of the arguments that potentially shape patterns of firm-level lobbying over trade policy, that is, the role of firms operating within GVCs. Moreover, these works have overlooked how domestic institutional setups constrain or incentivize firms' decision to lobby alone or through business associations. Empirically, these works have so far relied on case study-based designs. This therefore calls for further efforts to try and gauge how far these analyses' findings can be generalized. For instance, Curran and Eckhardt (2022) provided original insights by carrying out a quantitative overview of the types of trade policy issues on which different interest organizations focus their lobbying activities, using systematic data drawn from EU's Transparency Register. However, the empirical testing of their propositions mostly comes in the form of a selected series of case studies representing critical instances of protectionist threats.

In the remainder of the article, we therefore advance and quantitatively test, through cross-sectional data analysis that employs probit and logistic regression models, a number of arguments about the factors driving firm-centric lobbying in EU trade policy-making.

## II. Sources of Firm-Centric Lobbying on EU Trade Policy: Hypotheses

The extant political-economy literature suggests that the likelihood that firms lobby individually over EU trade policy should vary across both industries and EU member states. First, existing works concur in stressing the importance of intra-industry divisions over the merits of trade liberalization: Firms within an industry are less likely to act together via industry associations and lobby alone when they do not have uniform preferences. We should observe significant differences across industries depending on the extent to which they are exposed to structural transformations of patterns of international trade, causing increasing inter-firm preference heterogeneity within them. Compared to standard collective action theory, which focuses on why actors with similar interests are unable to

act collectively (Olson 1965), these works highlight even more primordial causes of firms' difficulty in acting collectively through business associations, that is, the structural transformations that have contributed to increase preference heterogeneity across firms within industries previously characterized by high levels of preference homogeneity. To put it differently, we focus on the factors causing industries to be internally divided over the merits of trade policies, which decreases the likelihood that industry members obtain a *collective* benefit from greater liberalization or trade protection and, conversely, increases their propensity to make a *private good* calculation about the expected benefits of lobbying (Gilligan 1997).

Relative to existing works that have addressed this question in the EU trade policy literature, we consider a wider spectrum of potential factors causing such inter-firm preference heterogeneity over trade policy, which allow us to develop four distinct hypotheses about the links connecting industry-level characteristics and firm-centric lobbying. Second, we draw on the comparative political-economy literature and advance the argument that differences in domestic institutional setups can affect preference formation and collective action amongst trade-related interests and determine cross-country variation in the level of firm-centric lobbying over EU trade policy.

### *Firms' Heterogeneity in Global Engagement*

First, the degree of firm-centric lobbying on trade policy should vary depending on the extent to which different industries display high or low levels of firms' ability to operate within GVCs. Since the early 1990s, producers in developed countries have started to rely on the outsourcing of labour-intensive, less value-added operations to low(er) income countries, leading the scale of international production to grow steadily and making GVCs a key defining feature of the contemporary global economy (Gereffi et al. 2005). Firms integrate in GVCs when they internationalize their production by either directly creating foreign subsidiaries or sourcing inputs from independent foreign suppliers. In the former case, production networks are developed and sustained by MNCs that feature various types of integration into a single corporate structure of production facilities located in different jurisdictions.

A number of factors suggest that industries displaying high levels of MNC activity should be characterized by high levels of inter-firm preference heterogeneity and hence of firm-centric trade policy lobbying (Osgood 2017b). For instance, MNCs may have intense free-trade preferences because they are interested in accessing cheap inputs from their affiliates abroad whilst domestic firms operating in the same industry that have not internationalized production remain markedly wary of foreign competition (Anderer et al. 2020; Yildirim et al. 2018). Similarly, MNCs support the convergence of regulatory practices between the home country and the countries where they operate in order to smooth out production and decrease the costs that regulatory differences can bring about (Baldwin 2016), whilst firms that have not internationalized their production tend to support regulatory differences that can limit foreign producers' access to domestic markets (Lechner 2016; Poletti et al. 2021). In short, MNCs can be expected to hold sharply different, and more free-trade-oriented, trade policy preferences than firms operating within the same sector that have not internationalized production.

Moreover, firms can also participate in GVCs by relying on foreign intermediate inputs used as components to deliver final products without directly establishing production facilities abroad (Eckhardt 2013, 2015; Eckhardt and Poletti 2016). Whilst in this case firms prefer to co-ordinate buyer–seller interactions through arm’s-length market relationships (Gereffi et al. 2005), the logic that drives their choice to source intermediate inputs from foreign producers is similar to that driving firms’ choice to create MNCs. Indeed, because these firms are also interested in accessing cheap intermediate inputs from abroad (Curran and Eckhardt 2020, 2022), they also tend to hold policy preferences that are markedly different from those of the firms that have not established links with GVCs. These former firms, which have paid large costs to engage in such global sourcing activities, have intense preferences for the reduction of both the tariff and non-tariff barriers to trade that are directly related to the cost of doing business and that affect the price of imported goods (Eckhardt and Poletti 2016). On the contrary, firms that do not possess the organizational capacity to engage in global sourcing of intermediate inputs and rely on domestically produced inputs should oppose trade liberalization or regulatory convergence that would enable their competitors to reduce input costs.

Moreover, considering that the managerial capacity and resources required to undertake the construction of an effective global production network are available only to the largest and most productive firms (Osgood 2017b), we should expect both MNCs and firms sourcing intermediate inputs to dispose of the necessary resources to lobby on behalf of their own interests. These arguments lead to the following two hypotheses:

*H1:* EU industries displaying high levels of MNC-related trade are more likely to feature direct firms’ lobbying rather than lobbying by business associations, compared to other sectors.

*H2:* EU industries displaying high levels of global sourcing of intermediate inputs are more likely to feature direct firms’ lobbying rather than lobbying by business associations, compared to other sectors.

### *Firms’ Heterogeneity in Export Participation*

Second, the likelihood that firms lobby alone, rather than via industry-wide associations, should vary across industries as a result of the combination of differences in firms’ productivity and IIT of differentiated products. Starting from the observation that only a minority of large firms manage to enter and remain in export markets (Melitz 2003), political economists began to focus on how firm heterogeneity in export performance is rooted in firm-level differences in size and productivity (Bernard et al. 2012). Since exporters face significant costs – which include fixed costs of distribution and servicing and variable costs such as transport, insurance, fees and tariffs – firm productivity plays a crucial role in selecting the firms that are able to access export markets: Only the most productive firms can pay the fixed and variable costs associated with accessing foreign markets whilst continuing to profitably sell at the lowest prices (Baccini et al. 2021). This means

that, contrary to what is postulated by the standard model of trade politics, not all firms within export-oriented sectors are equally able to access export markets and benefit from trade liberalization.

Moreover, when countries engage in IIT, disagreements over trade further increase. IIT occurs where two countries mutually exchange varieties of essentially the same product (Grubel and Lloyd 1971) and depends on the existence of economies of scale in production and product differentiation (Krugman 1981). IIT triggers within-industry inter-firm disagreements over trade liberalization because the lowering of trade barriers has two competing effects: It increases export opportunities abroad as well as import competition in the home market. Whilst the most productive firms gain from greater trade, less productive firms lose and may be driven out of business (Osgood 2017a).

The combination of firm heterogeneity and IIT thus creates inter-firm preference heterogeneity within an industry, because ‘all firms face greater import competition in the wake of trade liberalization; but only an elite few are able to successfully export’ (Osgood et al. 2017, p. 4). Again, it is important to note that, since generally larger and more competitive firms are more likely to engage in individual lobbying (Bernhagen and Mitchell 2009), those firms who face incentives to lobby alone are precisely the same firms that also dispose of the necessary resources to do so. This discussion leads to the following hypothesis:

*H3: EU industries displaying high levels of IIT are more likely to feature direct firms’ lobbying rather than lobbying by business associations, compared to other industries.*

### *The Services Sector*

Fourth, existing works suggest that the services sector in advanced economies such as the United States and the EU should be less susceptible to within-industry inter-firm disagreements over the merits of free trade in comparison to the manufacturing sector (Baccini et al. 2019). The reasons are manifold. For one, given that traded services are usually more skill-intensive than most manufacturing and non-tradable services, skill-abundant countries enjoy a sharp comparative advantage in services relative to the rest of the world. Moreover, many services sectors (e.g., professional services, finance and healthcare) mostly use non-tradable inputs and do not make large use of material inputs, making firms’ heterogeneity in the ability to engage in global sourcing of intermediate inputs less of an issue (Gervais and Jensen 2013).

On top of that, services producers’ heavy reliance on skilled labour and services know-how makes them generally less interested in locating production abroad than manufacturing producers. Overall, these arguments suggest that inter-firm preference heterogeneity on trade policy should be lower in the services sector than in other sectors. As Baccini et al. (2019, p. 264) argue, ‘While the largest services firms may still reap most of the gains of liberalization, the intra-industry cleavages predicted by firm-centered approaches are unlikely given the exorbitant factor-based comparative advantage of the US service sector. Foreign competition is so enfeebled in services that smaller, non-exporting firms simply do not engage politically’. This discussion leads to the following hypothesis:

*H4:* EU services sectors are more likely to feature lobbying by business associations than direct firms' lobbying, compared to other sectors.

### *Liberal Market Economies*

Finally, our intuition is that there should be systematic variation in the likelihood of firm-centric lobbying over EU trade policy across countries too. The comparative political-economy literature has long noted that different domestic institutional setups can affect the distributive consequences and, hence, politics of trade in systematic ways (Baccini et al. 2021). In this context, we focus on dimensions of institutional variation that shed direct light on the different incentive structures that might affect firms' choices over how to engage in political activity. In our view, the well-known conceptual distinction between LMEs and CMEs (Hall and Soskice 2001) offers a valuable entry point for this discussion.

The main difference between these two types of economies ultimately concerns the presence or absence of mechanisms of strategic co-ordination between the actors that operate within the domestic political economy. Crucially for us, this literature highlights that in LMEs the equilibrium outcomes of firms' behaviour are usually determined by demand and supply conditions in competitive markets, whereas CMEs are characterized by stable inter-company structures in which firms usually co-ordinate their endeavours between them. For instance, in CMEs, firms usually co-ordinate their activities within, and operate through, centralized and encompassing industry-wide employers' associations, which are instrumental to support co-ordinated wage bargaining institutions and publicly subsidized vocational training schemes (Baccini et al. 2021). Moreover, faced with globalization-induced competitive pressures, firms in CMEs are usually encouraged to engage in upgrading strategies whereby firms seek competitive advantage by foregoing intensive exploitation of labour savings and pursuing the more costly process of re-investing in their home country-based capabilities (Butzbach et al. 2020). Conversely, the fact that employers' associations in LMEs are less cohesive and encompassing incentivizes firms to define their purposes more narrowly and more instrumentally and hence to exploit the opportunities offered by globalization to directly or indirectly use cheap labour in developing economies (Butzbach et al. 2020).

These arguments suggest that the institutional complementarities typical of LMEs are more likely to enable firm-level political activity than those of non-LMEs since they tend to stimulate precisely the types of incentives that increase inter-firm preference heterogeneity within sectors. Recent works provide strong support for this argument. For instance, Baccini et al. (2021) show that in LMEs, the gains from trade tend to be more strongly concentrated in the hands of a few firms than in CMEs, where co-ordinated labour market institutions tame the reallocation effect of trade liberalization (Baccini et al. 2021). Touching more directly upon the question of firm-level political activity, Butzbach et al. (2020) convincingly argue that firms in non-LMEs are more likely to act together to support non-market strategies aimed at taming instances of anti-globalization backlash. This discussion leads to the following hypothesis:

*H5:* Countries characterized as LMEs are more likely to feature direct firms' lobbying rather than lobbying by business associations, compared to other countries.

### III. Research Design

In order to subject our hypotheses to empirical scrutiny, we focus on the lobbying contacts that senior EC staff and the European Commissioner had with interest groups both from within and outside the EU. With the inauguration of the Juncker cabinet at the end of 2014, the Commission extended its proactive transparency regime so that all meetings held with lobbyists are published online in the Transparency Register. The data sources are not easily retrievable, but it has been done by Lobby Watch, which is a joint project of Corporate Europe Observatory and LobbyControl. This resulted in a large dataset of over 22,000 contacts between high-ranked EC officials and interest groups representatives of firms, business associations and non-governmental organizations (NGOs) over the past years, which they shared with us. In this article, we retrieved the data of the DG Trade, for which 982 lobby contacts between 2014 and 2018 were listed. These comprise mostly the contacts that the European Commissioner of Trade, members of his or her cabinet and the Director-General had with interest groups from both within and outside the EU during this period.

We coded all organizations based on their group type, distinguishing between business organizations and NGOs depending on whether they defend economic or social interests. In this article, we only focus on business organizations, where we make a distinction between firms and associations. The latter represent a set of firms, almost exclusively based on the type of sector(s) in which they are active. We matched each of these organizations to a particular economic sector, relying on the International Standard Industrial Classification of All Economic Activities (ISIC) revision 4 codebook. We coded organizations at the ISIC two-digit level. For instance, this includes sectors such as Crop and animal production (code A01), Mining of coal and lignite (B06), Manufacture of basic metals (C24), Construction of buildings (F41), Telecommunications (J61), Financial service activities (K64) and many more.<sup>2</sup> The two-digit ISIC codes serve to identify variation across economic sectors with respect to our variables of interests (discussed below). We consider two-digit rather than three- or four-digit ISIC industry codes, because many organizations, and especially associations – such as the ‘Irish Farmers’ Association’ – cannot be classified at a lower level of aggregation. In addition, there is a lack of sufficient data at further disaggregated levels to construct some of our key independent variables. The lobbying contacts for which no specific sector could be identified are excluded from the analysis.

#### *Dependent Variable*

We now turn to the operationalization of the variables we use in this article (for a summary, see Table 1). Our dependent variable is operationalized as to whether a corporation or business association has interacted with EC staff and is therefore measured as a binary

<sup>2</sup>For an overview of all sectors, see Table A1.

Table 1: Summary Statistics.

Variable	Obs.	Mean	Std.dev.	Min	Max	Source
Firm lobbying	661	0.440	0.497	0	1	Lobby Watch
MNC-related trade	636	69.172	22.779	20.245	97.457	OECD
MNCs in sector	661	25.160	15.187	3.906	54.062	Orbis
Intermediate inputs	661	7.815	4.454	2.172	37.496	WIOD
Intra-industry trade	661	0.762	0.182	0.066	0.999	TiVA
Product differentiation	508	0.557	0.376	0	1	Rauch (1999)
Services sector dummy	661	0.254	0.436	0	1	OECD/Eurostat
Liberal market economy	661	0.162	0.369	0	1	Hall and Soskice (2001)
Industry value added	619	1.020	0.798	0.044	4.929	Eurostat
Trade size	661	11.803	0.822	7.647	13.281	TiVA
Market concentration	661	11.810	12.187	0.503	83.175	Orbis
Critical issues	661	0.107	0.310	0	1	Lobby Watch
Trade Commissioner	661	0.068	0.252	0	1	Lobby Watch

variable. As this is a dichotomous dependent variable, probit and logistic regression models are employed in the cross-sectional data analysis.

### *Independent Variables*

The model included in the study has several independent variables. We start by including four variables capturing sector-level characteristics. Whilst at first glance this may look inconsistent with the article's theoretical focus on firm-level political activity, our choice is perfectly coherent with the logic that underpins the logic that underpins Hypotheses 1, 2, 3 and 4, 4 and is in line with similar works in the US context. Indeed, our theoretical focus is on how sector-level characteristics, which are postulated to influence the degree of inter-firm preference heterogeneity within a sector, affect the likelihood of firm-centric or associational lobbying. At the same time, and in order to make sure that our explanatory variables closely reflect the broad firm-level focus of the article, whenever possible, we construct our sector-level measures by aggregating firm-level data.

First, we rely on the Organisation for Economic Co-operation and Development's (OECD's) Trade by Enterprise Characteristics (TEC) database to measure the share of sectoral (extra-EU) trade accounted for by MNCs. The TEC database contains trade data broken down by three different categories of enterprises: domestically controlled enterprises without their own affiliates abroad, domestically controlled enterprises with their own affiliates abroad and foreign enterprises. The firms with affiliates abroad and foreign enterprises active in the EU are treated as MNCs in our analysis. We decided to focus on trade accounted for by MNCs – instead of investment – because we are particularly interested in the activity of vertically integrated MNCs, which are characterized by strong trade ties between the home market and production facilities abroad, whilst horizontally integrated MNCs tend to expand their sales into foreign markets. Yet, the TEC database has two major drawbacks: (1) Data are only available on the level of EU member states, and (2) in most sectors, trade data of MNCs exist only for a subset of EU member states. This is not necessarily problematic, as the share of trade accounted for by MNCs in a

sector is often largely similar across countries. As long as data are available for at least five member states, we assume that an aggregation of these data can still provide a valid description of the role of MNCs in different EU sectors. Additionally, we include an alternative measure for activity by MNCs based on firm-level data from the Orbis database provided by Bureau Van Dijk.<sup>3</sup> We check whether firms are active in jurisdictions outside the EU based on the geocodes of branches and subsidiaries, and if that is the case, we treat these firms as MNCs. To construct this alternative variable, we count the number of MNCs in each two-digit ISIC sector and divide by the total number of firms in this sector.

Second, we use the World Input-Output Database (WIOD) to measure the sectors' reliance on foreign inputs in the production process (Timmer et al., 2015). More specifically, for each EU member state, we take the sectoral consumption of foreign (i.e., extra-EU) intermediate inputs, sum them across all member states and calculate each sector's foreign intermediate consumption as a percentage of their total output in the EU (see also Yildirim et al., 2018).

Third, we include a variable that captures the extent to which IIT is present in a sector. Following standard practice, we calculate the level of IIT using the Grubel and Lloyd (1971) index that ranges between 0 (one-way trade) and 1 (imports and exports are equal in value). The trade data comes from the OECD–World Trade Organization Joint Trade in Value Added Database (TiVA). Moreover, we construct a measure for product differentiation, which is the share of differentiated products in a sector based on the Rauch (1999) classification. We use available correspondence tables<sup>4</sup> to merge the Rauch (1999) classification with the sectors at the ISIC two-digit level. This measure also ranges from 0 (this sector does not produce differentiated products) to 1 (all products in this sector are differentiated).

Fourth, our measure for *services sectors* is a dummy variable, which takes the value of 1 for all sectors in ISIC sections G–U (codes 45–99) and 0 otherwise. This is in line with the broad economic classifications used by the OECD and Eurostat.

Finally, since we are interested in how domestic institutional characteristics affect the likelihood of firm-centric lobbying, we include a dummy variable that distinguishes between LMEs and other types of political economies. To do so, we rely on Hall and Soskice (2001), who classify the following countries as LMEs: Australia, Canada, Ireland, New Zealand, the United Kingdom and the United States. The dummy takes the value of 1 if the headquarters of an organization is located in a country identified as a LME and 0 otherwise.

Furthermore, we note that WIOD only covers the period up until 2014. To increase the coverage of our database, we also use these data for subsequent years in our sample. In general, when trade data are not available for a particular year, we use linear interpolation between two known points or the closest available data to maximize the number of observations.

<sup>3</sup>The sample does not contain the entire universe of firms in the EU. We only consider the firms identifiable as global ultimate owners with at least one known value for turnover between 2014 and 2018. By doing this, we avoid including inactive companies or the same company multiple times.

<sup>4</sup>RAMON – Reference and Management of Nomenclatures (SITC rev 3 → ISIC rev 3) and United Nations Statistics Division – Correspondence Tables (ISIC rev 3 → ISIC rev 4).

### Control Variables

The study controls for a few factors to reduce the risk of omitted variable bias. First, we control for the size of an economic sector, as this has been one of the most important factors driving corporate lobbying according to the extant literature (e.g., Bernhagen and Mitchell 2009). We hereby rely on the value added (VA) of a sector as a share of total VA in the EU. The data on industry VA are retrieved from Eurostat. We also include the industry's *trade size* (log of imports and exports) to control for the possibility that larger trade flows – irrespective of whether they involve MNCs (H1) or intermediate inputs (H2) – trigger more individual lobbying. The data come from TiVA.

Second, we account for market concentration by adding the Herfindahl–Hirschman index (HHI) of market concentration to the regression model. For each two-digit ISIC sector, we calculate the HHI based on turnover data from more than 200,000 firms active in the EU. This allows us to check whether the level of market concentration affects the incidence of firm-centric lobbying. Data come from Orbis.<sup>5</sup>

Third, the type of lobbying might also depend on the topic of the meeting or the hierarchical position of the DG Trade's staff member. More specifically, Brexit and the Transatlantic Trade and Investment Partnership (TTIP) were probably the most contentious trade issues in the EU between 2014 and 2018. Given the high level of salience, negotiations around these issues may have led to a different type of political engagement from business organizations. Moreover, compared to lower ranked officials, business organizations might be more likely to join forces and to present a common position in talks with the EU Trade Commissioner Cecilia Malmström in our sample. Or, vice versa, the Commissioner might prioritize talking to associations representing broader societal interests over contacts with firms in fragmented industries (Woll 2006). In any case, we control for these potential effects by including dummy variables for contentious issues (Brexit and TTIP) and for contacts with the EU Trade Commissioner.

### IV. Empirical Test

Table 2 presents the results of the probit regression. The Wald  $\chi^2$  and the pseudo  $R^2$  are reported at the bottom of the table. Robust standard errors are used to account for potential heteroskedasticity. Model 1 includes the variables of interests and we add the control variables in Model 3. We add *product differentiation* only in Model 4 because this variable has the least observations.<sup>6</sup>

Considering the first hypothesis, the results show that *MNC-related trade* is positively related to the incidence of firm-centric lobbying. This finding is consistent with the idea that MNCs hold policy preferences that differ from those of purely domestic firms operating in the same industry. Examples of sectors with a high level of MNC activity are manufacturers of electrical equipment, chemicals and pharmaceutical products. Conversely, industries displaying low levels of trade accounted for by MNCs – such as agriculture and forestry – are more likely to feature lobbying by associations. These industries, consisting mainly of domestic firms without foreign affiliates, are better able to

<sup>5</sup>Note that the Orbis database over-represents large companies and (thus) under-represents smaller companies (Baccini et al. 2021). However, we have no reason to suspect that this problem of representativeness differs across sectors.

<sup>6</sup>See Table 1. The Rauch (1999) classification is not available for most services sectors.

Table 2: Probit Regression Predicting Firm or Associational Lobbying.

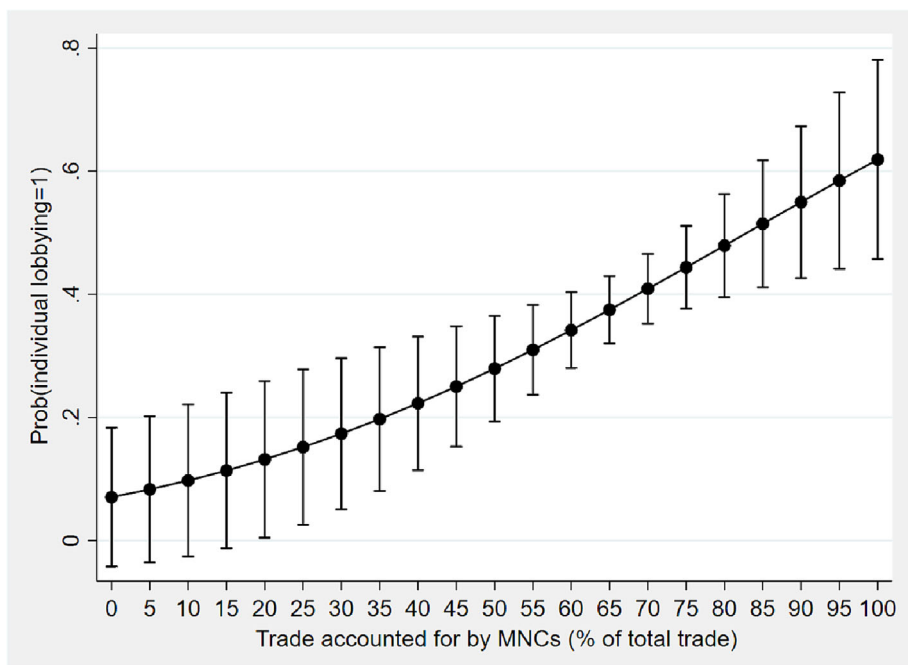
	<i>Firm lobbying (individual = 1)</i>			
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<b>Global engagement</b>				
MNC-related trade	0.018*** (0.003)		0.023*** (0.004)	0.018*** (0.005)
MNCs in sector		0.012** (0.006)		
Intermediate inputs	0.029* (0.016)	0.037* (0.022)	0.043** (0.018)	0.045* (0.024)
<b>Export participation</b>				
Intra-industry trade	−0.024 (0.314)	−0.054 (0.369)	−0.385 (0.361)	
Product differentiation				0.431** (0.214)
<b>Services</b>				
Services sector dummy	0.097 (0.165)	0.480*** (0.152)	−0.089 (0.197)	−0.508 (0.450)
<b>Liberal market economy</b>				
LME	0.911*** (0.147)	0.928*** (0.146)	1.084*** (0.168)	0.917*** (0.185)
<b>Control variables</b>				
Industry value added			0.163 (0.101)	0.352 (0.226)
Trade size			−0.170 (0.119)	0.016 (0.244)
Market concentration			−0.002 (0.006)	−0.000 (0.008)
Critical issues			−0.502*** (0.190)	−0.513** (0.220)
Trade Commissioner			−0.296 (0.213)	−0.373 (0.246)
Constant	−1.819*** (0.328)	−1.207*** (0.446)	−0.535 (1.322)	−3.047 (2.554)
Year dummies?	No	Yes	Yes	Yes
Wald chi <sup>2</sup>	100.45 [0.000]	86.08 [0.000]	116.72 [0.000]	105.08 [0.000]
Correctly predicted (%)	70.0	63.7	72.3	71.9
Pseudo R <sup>2</sup>	0.14	0.10	0.17	0.19
N	636	661	595	476

Note: Robust standard errors in parentheses. \*  $p < 0.1$ . \*\*  $p < 0.05$ . \*\*\*  $p < 0.01$ .

formulate a united position towards European trade policy. The effect is also significant in substantive terms: On average, a 10-percentage point increase in MNC-related trade is associated with a 5.5-percentage point increase in the probability of individual lobbying (in the fourth model), which is shown graphically in Figure 1. As can be seen in Model 2, we also find that sectors in which more MNCs are active tend to feature more direct firms' lobbying, which is in line with our expectation (H1).

We also find support for the second hypothesis: Industries that are more dependent on foreign intermediate inputs in the production process are more likely to feature direct

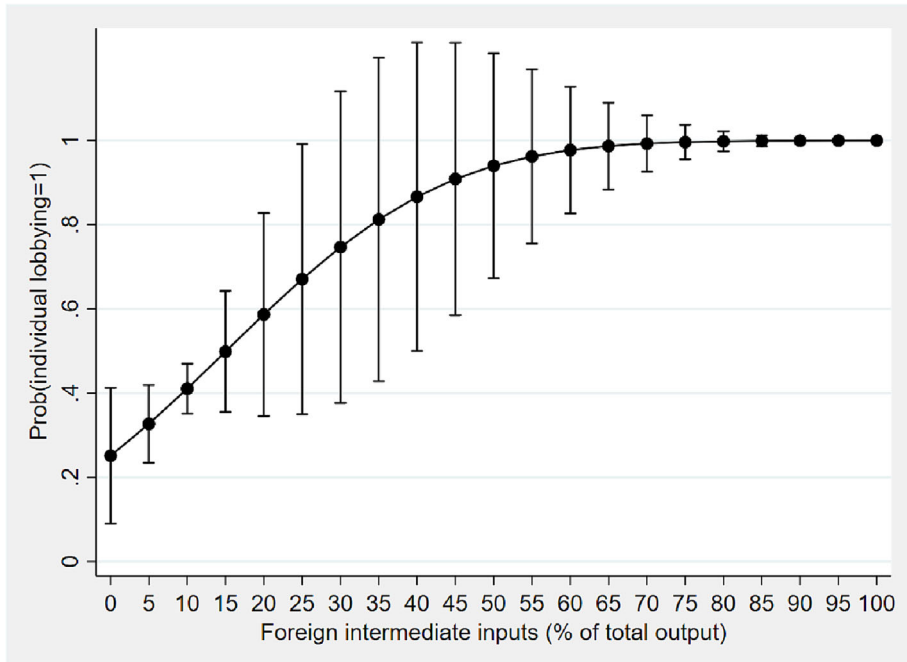
Figure 1: The Effect of MNC-Related Trade on Individual Lobbying (Margins Plot). [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]



firms' lobbying. The coefficient on *intermediate inputs* is positive and statistically significant at the 5% level in Model 3. This means that firms in industries with low levels of global sourcing can be expected to approach the Commission collectively, whereas firms tend to contact the Commission individually when a larger proportion of the industry relies on foreign intermediate inputs to produce final products. The results indicate, for instance, that EU producers of computers and electronics (foreign input = 18.5%) are 22.2% more likely than EU manufacturers of beverages (foreign input = 5.7%) to lobby individually, *ceteris paribus*. As shown in Figure 2, a diminishing effect of the use of foreign intermediate inputs on firm-centric lobbying can be observed, which implies that intra-industry divisions over trade arise relatively quickly as some firms engage in global sourcing – even if just to a small extent – whilst other firms do not.

Furthermore, the probability of firm-centric lobbying does not appear to increase with *intra-industry trade* (H3), which contrasts with previous findings in the literature (Madeira 2016). A potential explanation for this difference is that, in this study, IIT is measured using a relatively high level of data aggregation, whilst other scholars have used the four-digit sectoral level or even six-digit product level to calculate the Grubel and Lloyd (1971) index. As a result, our measure might not fully capture the various patterns and dynamics of IIT that exist *within* the broad economic sectors at the ISIC two-digit level. Turning to our alternative measure, *product differentiation*, we find a positive coefficient that is statistically significant at the 5% level (see Figure 3), which supports the

Figure 2: The Effect of Intermediate Inputs on Individual Lobbying (Margins Plot). [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/jcms.13520)]



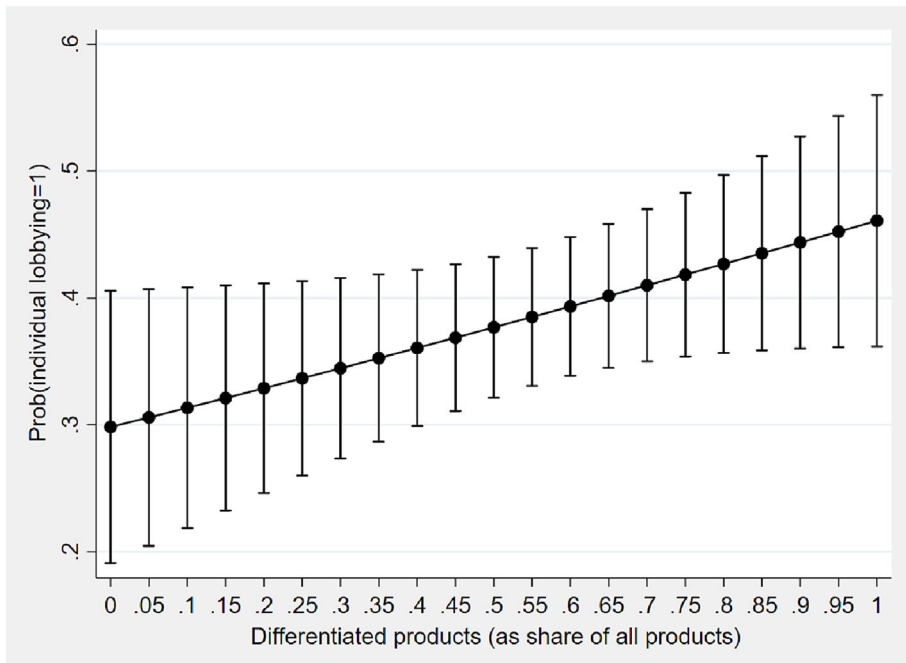
view that intra-industry disagreements over trade are more likely to arise amongst firms producing differentiated products (Osgood 2017a).

In contrast to findings in the United States (Baccini et al. 2019), we do not find that firms in the *services sector* are more likely to lobby via industry associations compared to firms in goods-producing industries (H4).<sup>7</sup> The coefficient in Model 2 is even positive and significant, suggesting that the services sector features *more* firm-centric lobbying than other EU industries. We highlight two potential explanations for the differences between the United States and the EU. First, some of the intra-industry divisions over trade in the EU might actually be attributed to ‘the overwhelming US comparative advantage in services’ (Baccini et al. 2019, p. 263). TTIP was one of the most important issues in the 2014–2018 period, which may have led to disagreements amongst services providers in the EU because of the strong US competitiveness in this field. Second, the null findings in Models 1, 3 and 4 might be explained by the fact that associational lobbying – both in the goods and services sectors – is far more common in the EU than in the United States (Hanegraaff et al. 2017).

Lastly, and interestingly, the results reveal a positive relationship between a country being a *liberal market economy* and firm-centric lobbying. This suggests that, as we hypothesized, the institutional framework in LMEs, such as Ireland and the United

<sup>7</sup>Qualitatively similar results on services were obtained when we excluded the observations of business organizations with headquarters in the United States (see Table A2).

Figure 3: The Effect of Product Differentiation on Individual Lobbying (Margins Plot). [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/jcms.13520)]



Kingdom, may incentivize more individual lobbying by firms than in CMEs such as Sweden and Germany. These findings support the view that the absence of domestic institutions constraining firms' political activity could indeed have a positive effect on the likelihood of firm-centric lobbying. Interestingly, as Table A2 shows, the main results hold even if we exclude business organizations with headquarters in the United States (47 observations) from the sample, which reassures us about the fact that they are not entirely driven by US interest organizations.<sup>8</sup> This is an important observation, particularly considering that previous research shows that direct lobbying by firms is traditionally more typical in the United States than in the EU (Hanegraaff et al. 2017). At the same time, future research could use more fine-grained data on the content of lobbying to assess whether firms across the Atlantic systematically differ with respect to the demands they advance to policy-makers. Moreover, we would like to stress that further research would be needed to complement this correlational observation with more qualitative evidence showing that the causal mechanisms that we postulate are indeed at play.

Furthermore, the control variables, namely, *industry value added*, *trade size*, *market concentration* and *Trade Commissioner*, do not appear to affect firms' lobbying behaviour. Yet, we find that *critical issues* (i.e., TTIP and Brexit) are more likely to be discussed

<sup>8</sup>The results also hold if we exclude *all* business organizations with headquarters outside the EU (95 observations) from the sample.

between EU trade officials and industry-wide associations, which suggests that in these cases there may be a greater uniformity of interests and that the reputational costs of going it alone may be higher (Curran and Eckhardt 2022).

### Robustness Checks

We implement two robustness checks to test the sensitivity of our results to modelling choices. First, we report the outcomes of the logistic regressions in Table A3, which largely corroborate our main findings. Second, we note that many business organizations approached the EC staff multiple times in the 2014–2018 period.<sup>9</sup> So far, we have treated all lobbying contacts as independent observations, but since model errors might be correlated within these ‘clusters’ of lobbying contacts by the same organization, we also obtain the estimates of probit regressions with clustered standard errors. Given that our sample contains 324 of such clusters with unbalanced sizes, we run the risk of not having sufficient within-cluster observations to adequately estimate within-cluster variability, leading to over- or under-rejection of the true null hypothesis (Cameron and Miller 2015). In such cases, when the appropriateness of clustering is in doubt, ‘it is always possible to still obtain cluster-robust standard errors and contrast them to default standard errors’ (Cameron and Miller 2015, p. 334). We report the clustered standard errors in Table A4. In line with previous estimations, we find that our measures of *MNC-related trade* and *liberal market economies* are positively related to individual firm lobbying. Yet, we no longer find support for H2 and H3, suggesting that the results regarding the role of *intermediate inputs* and *product differentiation* should be approached with greater caution.

### Conclusions

This article makes two main contributions. First, we have shown that the firm-centric models of trade that have gained traction in recent years travel well in the EU context. As observed in the United States and elsewhere, we argue and document that EU industries displaying high levels of (1) MNC activity, (2) global sourcing of intermediates and (3) product differentiation are characterized by higher levels of firm-centric lobbying. These are important findings because they run somewhat counter to earlier analyses of EU trade policy-making, which showed little firm-level lobbying by import-dependent firms such as MNCs or firms relying on imports of intermediates (Curran and Eckhardt 2022). Second, we have contributed to advancing this literature by showing how firm-centric models of trade interact with domestic political institutions. Indeed, our analysis has shown that domestic institutions do matter: the institutional configurations typical of LMEs seem to incentivize firm-centric trade policy lobbying.

However, we acknowledge that our analysis has important limitations that additional studies could address. First, the way in which we operationalized our dependent variable did not allow us to grasp whether firms lobby alongside or in opposition to industry-side business associations (Chalmers 2020; Curran and Eckhardt 2022). This is an important limitation of our empirical analysis, particularly considering that we conceived of inter-firm preference heterogeneity as a major driver of firm-centric lobbying. Since the

<sup>9</sup>On average, business organizations had 1.9 contacts with senior staff of the European Commission between 2014 and 2018.

data we relied on does not include information on the direction of lobbying, we were unable to address this important question. In addition, we only focused on contacts between lobbyists and the Trade Commissioner, the surrounding cabinet and the Director-General, whilst firms and associations can also target lower ranked officials. Although we remain confident about the validity of our results because previous research showed that higher ranked officials in the EU tend to prioritize talking to associations representing broader societal interests (Woll 2006), we deem it important expanding the empirical scope of our analysis to include these lower-level contacts.

More generally, our contribution underscores the relevance of shedding further systematic light on the role of firms as political actors in the making of EU trade policy. The rise of firms' direct lobbying is deemed normatively problematic, because it favours narrow and hyper-concentrated interests at the expense of more diffuse ones and therefore has the potential to exacerbate political systems' tendency to produce policies that are not aligned to the general interest (e.g., Mizruchi 2013; Olson 1982). At the same time, EU trade policy has sparked much political contestation in recent years, largely as a result of the growing public perception that EU trade policy choices have contributed to further concentrating wealth in the hands of the few, at the expense of the many (De Bièvre and Poletti 2020). If we are to understand the fundamental dynamics that will characterize the politics of trade in the EU in the years to come, we have to continue investigating the role of firms in the making of EU trade policy.

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## A: Appendix

Table A1: Overview of Sectors.

ISIC	Description of sector
A01	Crop and animal production, hunting and related service activities
A02	Forestry and logging
B05	Mining of coal and lignite
C10	Manufacture of food products
C11	Manufacture of beverages
C13	Manufacture of textiles
C14	Manufacture of wearing apparel
C16	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials
C17	Manufacture of paper and paper products
C19	Manufacture of coke and refined petroleum products
C20	Manufacture of chemicals and chemical products
C21	Manufacture of basic pharmaceutical products and pharmaceutical preparations
C22	Manufacture of rubber and plastics products
C23	Manufacture of other non-metallic mineral products
C24	Manufacture of basic metals
C25	Manufacture of fabricated metal products, except machinery and equipment
C26	Manufacture of computer, electronic and optical products
C27	Manufacture of electrical equipment
C28	Manufacture of machinery and equipment n.e.c.
C29	Manufacture of motor vehicles, trailers and semi-trailers
C30	Manufacture of other transport equipment
C31	Manufacture of furniture
C32	Other manufacturing
D35	Electricity, gas, steam and air conditioning supply
E38	Waste collection, treatment and disposal activities; materials recovery
F41	Construction of buildings
G46	Wholesale trade, except of motor vehicles and motorcycles
G47	Retail trade, except of motor vehicles and motorcycles
H49	Land transport and transport via pipelines
H50	Water transport
H51	Air transport
H53	Postal and courier activities
J58	Publishing activities
J59	Motion picture, video and television programme production, sound recording and music publishing activities
J60	Programming and broadcasting activities
J61	Telecommunications
J62	Computer programming, consultancy and related activities
J63	Information service activities
K64	Financial service activities, except insurance and pension funding
K65	Insurance, reinsurance and pension funding, except compulsory social security
K66	Activities auxiliary to financial service and insurance activities
M70	Activities of head offices; management consultancy activities
M72	Scientific research and development
M74	Other professional, scientific and technical activities

Table A1: (Continued)

<i>ISIC</i>	<i>Description of sector</i>
N79	Travel agency, tour operator, reservation service and related activities
N80	Security and investigation activities
R90	Creative, arts and entertainment activities

Table A2: Probit Regression Predicting Firm or Associational Lobbying (Excl. Business Organizations with U.S. Headquarters).

	<i>Firm lobbying (individual = 1)</i>			
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<b><i>Global engagement</i></b>				
MNC-related trade	0.018*** (0.003)		0.022*** (0.004)	0.017*** (0.006)
MNCs in sector		0.012** (0.006)		
Intermediate inputs	0.022 (0.018)	0.032 (0.022)	0.040** (0.019)	0.048* (0.025)
<b><i>Export participation</i></b>				
Intra-industry trade	−0.163 (0.315)	−0.210 (0.372)	−0.533 (0.366)	
Product differentiation				0.368* (0.220)
<b><i>Services</i></b>				
Services sector dummy	0.064 (0.171)	0.452*** (0.156)	−0.110 (0.206)	−0.517 (0.494)
<b><i>Liberal market economy</i></b>				
LME	0.748*** (0.179)	0.761*** (0.176)	0.995*** (0.202)	0.770*** (0.228)
<b><i>Control variables</i></b>				
Industry value added			0.182* (0.103)	0.441 (0.234)
Trade size			−0.153 (0.121)	−0.005 (0.250)
Market concentration			0.001 (0.006)	0.005 (0.008)
Critical issues			−0.580*** (0.205)	−0.545** (0.231)
Trade Commissioner			−0.358 (0.234)	−0.445 (0.271)
Constant	−1.641*** (0.325)	−1.301*** (0.509)	−0.685 (1.354)	−2.998 (2.635)
Year dummies?	No	Yes	Yes	Yes
Wald chi <sup>2</sup>	69.79 [0.000]	52.18 [0.000]	95.55 [0.000]	82.51 [0.000]
Pseudo R <sup>2</sup>	0.10	0.06	0.14	0.16
N	589	614	554	447

Note: Robust standard errors in parentheses. \*  $p < 0.1$ . \*\*  $p < 0.05$ . \*\*\*  $p < 0.01$ .

Table A3: Logistic Regression Predicting Firm or Associational Lobbying.

	<i>Firm lobbying (individual = 1)</i>			
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<b>Global engagement</b>				
MNC-related trade	0.031*** (0.005)		0.038*** (0.007)	0.029*** (0.010)
MNCs in sector		0.018* (0.010)		
Intermediate inputs	0.048* (0.026)	0.062 (0.039)	0.071** (0.029)	0.077* (0.041)
<b>Export participation</b>				
Intra-industry trade	0.009 (0.519)	−0.126 (0.630)	−0.543 (0.599)	
Product differentiation				0.676* (0.346)
<b>Services</b>				
Services sector dummy	0.163 (0.269)	0.791*** (0.259)	−0.149 (0.326)	−0.753 (0.782)
<b>Liberal market economy</b>				
LME	1.498*** (0.247)	1.500*** (0.244)	1.810*** (0.288)	1.519*** (0.308)
<b>Control variables</b>				
Industry value added			0.282* (0.165)	0.590 (0.374)
Trade size			−0.272 (0.203)	0.101 (0.444)
Market concentration			−0.002 (0.010)	−0.000 (0.014)
Critical issues			−0.807** (0.315)	−0.811** (0.364)
Trade Commissioner			−0.476 (0.352)	−0.609 (0.411)
Constant	−3.137*** (0.535)	−1.942*** (0.644)	−1.183 (2.272)	−5.942 (4.742)
Year dummies?	No	Yes	Yes	Yes
Wald chi <sup>2</sup>	84.47 [0.000]	79.27 [0.000]	97.22 [0.000]	89.12 [0.000]
Pseudo R <sup>2</sup>	0.14	0.10	0.17	0.19
N	636	661	595	476

Note: Robust standard errors in parentheses. \*  $p < 0.1$ . \*\*  $p < 0.05$ . \*\*\*  $p < 0.01$ .

Table A4: Probit Regression with Clustered Standard Errors (by Business Organization).

	<i>Firm lobbying (individual = 1)</i>			
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<b>Global engagement</b>				
MNC-related trade	0.018*** (0.005)		0.023*** (0.007)	0.018** (0.008)
MNCs in sector		0.012 (0.010)		
Intermediate inputs	0.029 (0.032)	0.037 (0.031)	0.043 (0.035)	0.045 (0.053)
<b>Export participation</b>				
Intra-industry trade	-0.024 (0.553)	-0.054 (0.664)	-0.385 (0.706)	
Product differentiation				0.431 (0.446)
<b>Services</b>				
Services sector dummy	0.097 (0.221)	0.480* (0.259)	-0.089 (0.301)	-0.508 (0.682)
<b>Liberal market economy</b>				
LME	0.911*** (0.221)	0.928*** (0.224)	1.084*** (0.239)	0.917*** (0.262)
<b>Control variables</b>				
Industry value added			0.163 (0.162)	0.352 (0.441)
Trade size			-0.170 (0.196)	0.016 (0.381)
Market concentration			-0.002 (0.010)	-0.000 (0.015)
Critical issues			-0.502** (0.201)	-0.513** (0.228)
Trade Commissioner			-0.296 (0.265)	-0.373 (0.293)
Constant	-1.819*** (0.535)	-1.207* (0.644)	-0.535 (2.208)	-3.047 (3.740)
Year dummies?	No	Yes	Yes	Yes
Wald chi <sup>2</sup>	47.59 [0.000]	43.04 [0.000]	58.57 [0.000]	56.23 [0.000]
Pseudo R <sup>2</sup>	0.14	0.10	0.17	0.19
N	636	661	595	476

Note: Clustered standard errors in parentheses. \*  $p < 0.1$ . \*\*  $p < 0.05$ . \*\*\*  $p < 0.01$ .