

# A Political-Economic Analysis of the Antidumping Procedure in the European Union

Christophe Crombez<sup>†</sup>

Pieterjan Vangerven<sup>‡</sup>

*Preliminary Draft – August 2014*

## Abstract

In this paper we present spatial, complete and incomplete information models of the EU antidumping procedure. We identify the key players and study interest groups', member states' and institutions' optimal strategies. We find that in the complete information model the Commission sets the duty it prefers most from among the duties a simple majority of member states prefer to the status quo. In the incomplete information model the industry affected by dumping has private information. It lobbies the Commission at the proposal stage and the pivotal member state at the vote stage. Furthermore, we analyze a scenario in which the European Parliament (EP) becomes involved as a veto player. We find that giving the EP such a role only affects the outcome if the EP is more reluctant to impose antidumping duties than is the pivotal member state. Subsequently, we present an empirical analysis and use Bayesian item response models to compare the positions of the Council and the EP on trade issues between December 2009 and June 2014. We find that the EP is indeed less protectionist than the Council. This suggests that the member states may be reluctant to give the EP more power on antidumping issues, because it would veto duties as high as those the Council currently imposes.

---

<sup>†</sup> Christophe Crombez is Professor at the University of Leuven, Belgium, and Consulting Professor at the Freeman Spogli Institute for International Studies at Stanford University, U.S.A.

<sup>‡</sup> Pieterjan Vangerven is Doctoral Candidate at the University of Leuven, Belgium, and Research Fellow at the Research Foundation Flanders (FWO), Belgium.

## 1. Introduction

Trade policy plays a major role in current-day economies. An important tool in trade policy is antidumping policy. The European Union (EU) is responsible for trade, and thus antidumping policy in the member states. A number of scholars have presented theoretical models of the legislative procedures in the EU and their impact on policies. Tsebelis (1994), Steunenberg (1994) and Crombez (1996, 1997, 2000) are well-known examples. Crombez and Vangerven (2014) provide an overview of the literature. Steunenberg and Dimitrova (2003) were among the first to study the choice of procedure. However, up to now there is no formal political-economic analysis of the EU antidumping procedure, let alone of the reform thereof and possible empowerment of the European Parliament (EP) therein.

Nonetheless antidumping is a growing problem in international trade, according to Prusa (2001, 2005). He finds evidence that antidumping has a strong negative effect on trade. Brenton (2001) showed this to be true for the EU. Blonigen and Prusa (2001) present an overview of the literature on the effects of antidumping. Since the main welfare effects are negative, we can ask ourselves the question why countries pursue antidumping policies and impose antidumping duties. To address this question, we will do an in-depth analysis of the procedure and the key players in it.

Most scholars agree that EU antidumping policy is driven by protectionism rather than concern for 'fair' trade (Davis 2009). Antidumping duties are imposed most often in industries where European firms suffer from globalization and international competition from Chinese or South-American firms, for example. A firm or a group of firms can file a complaint against non-European firms and have antidumping duties imposed, if the following conditions are fulfilled: (1) imports are dumped, that is, sold below their normal value; (2) a European industry suffers injury; (3) the injury is caused by the dumping; and (4) antidumping duties may not be harmful to the EU.

If a firm is accused of dumping in the EU, the Commission can start an investigation, and if the company is found guilty, an antidumping duty can be imposed by the member states in the Council. Once an investigation has been initiated there is a large chance that it will result in definitive measures or duties (Davis 2009). We will present a formal game-theoretical model to determine who the key players in the procedure are, study under what conditions antidumping duties are imposed and explain the level of duties.

Before the Treaty of Lisbon the EU attempted unsuccessfully to change the antidumping procedure. De Bièvre and Eckhardt (2011) and Nielsen and Svendsen (2012) assigned the failure of the attempted reform to the fact that the political institutions of the EU are the agents of principals with opposing preferences, interest groups pro and contra trade liberalization. In this paper we come up with game-theoretical models to get a clear understanding of the current and proposed antidumping procedures. What are the main differences between those procedures, and as a consequence the main drivers of support for and opposition to the reform? Why did member states not want to reform the current antidumping procedure during the negotiations of the Treaty of Lisbon?

It seems reasonable to believe that not all member states are in favor of a stringent trade policy in particular sectors. Member states that import steel and do not have a steel industry, for example, suffer from antidumping duties in that industry, whereas member states with a steel industry benefit from such duties, if the gains in producer surplus exceed the losses in consumer surplus. Our hypothesis is that most member states endorse the current antidumping procedure compared to the proposed, reformed procedure due to the protection they get in sectors that are important to them, even if they suffer from antidumping duties in other sectors. Insofar as they expect that the empowerment of the EP will change this, they will oppose reform.

Another goal of this paper is to study which procedure results in a more open trade policy. Antidumping measures in the EU are the result of protectionism in response to the lobbying of European firms or industries. We will study in which situations the empowering of the EP will reduce the influence of lobbying firms or industries.

Dumping and the accompanying antidumping measures are not new. With the signing of the first General Agreement on Tariffs and Trade (GATT) in 1947, a legal framework to undertake action against dumping practices came into force. The current Antidumping Agreement saw the light after the termination of the Uruguay Round in 1994.<sup>1</sup> Article 6 of the GATT provides for exceptions to the Most Favoured Nations principle (MFN) and the principles of binding a tariff. However, some conditions need to be fulfilled for antidumping measures to be introduced. The responsible government agency has to show that dumping is effectively happening, provide proof that it is causing injury to a domestic sector or that it threatens to do so and come up with calculations that indicate the extent of dumping. On the other hand, legal experts argue that the World Trade Organization (WTO) regulations are too

vague, which leads to national antidumping duties that are purportedly consistent with international rules while in fact they are not (Vermulst 1990).

Dumping is defined as follows: a foreign company is dumping its products in a particular market if the price in that market is lower than the normal value of the product. This normal value is the domestic price or, in case the product is not being sold domestically, the cost of production. A large share of the complaints at the WTO level is launched against WTO member states that have antidumping laws themselves (Prusa 2001). This finding is in line with the work of Finger (1993), who developed the conjecture theory: member states take on antidumping legislation to protect their exports. So besides dealing with dumping on their domestic markets, member state antidumping policies also signal that they are willing to take action if another member state imposes duties on their exports. Imposing antidumping duties can then be considered as part of a tit-for-tat strategy (Prusa 2001).

In the next section we illustrate the importance of antidumping by giving an overview of EU antidumping policy in the past decade. In the third section we present spatial models of the antidumping procedure and derive the equilibria. The fourth section introduces our data and the fifth section contains our empirical results. We formulate conclusions in the sixth section.

## **2. The Past Decade of EU Antidumping**

Antidumping duties are an important tool for industries and governments to protect domestic firms from harmful unfair competition by foreign firms. As mentioned above trade policy and antidumping duties are the responsibility of the EU rather than the member states. To illustrate our theoretical model we present an overview of antidumping in the EU during the period 2003-13. How many of the complaints resulted in provisional or definitive duties? Which countries were subjects of the investigations? And, which companies or industry groups filed the complaints?

-----Table 1 about here-----

There were a total of 186 antidumping cases in the EU during the 2003-13 period, about seventeen per year.<sup>2</sup> We consider the year of the initiation of the investigation. Most complaints are filed by industry advocacy groups. These groups defend the interests of an industry and the companies that belong to it. The European Chemical Industry Council (26) and the Steel Industry Defence Committees (25) were the most active interest groups, closely followed by other metal en industry component interest groups. Individual companies can also file complaints, but this is only the case in a minority (22%) of the investigations.

Defending an industry against harmful, unfair competition, is one of the main reasons why companies set up industry organisations. These organisations seek to align the interests of the industry's companies throughout Europe, and thus have a good idea of the extent of the injuries that result from the unfair competition. Most of the filings concern intermediate products, such as chemicals, steel, metals, industrial component, etc. The industries that produce them could be referred to as 'old'. Only a minority of the investigations focusses on finished products, about eight percent. The old industries suffer from high wage costs, emission rights, and other forms of environmental regulation in the EU. In general EU companies have to meet more and higher standards than their foreign counterparts. This may partially explain why a lot of the complaints of these industries result in antidumping duties. The EU companies that ask for antidumping duties come from all over the EU, but the large and more industrial member states tend to be more active in antidumping matters. This can be seen in table 2.

-----**Table 2 about here**-----

A quick look at the antidumping cases in the past decade, as presented in table 3, shows that China is the target country of a plurality of the complaints (74), followed by Taiwan (10), India (9), Russia and Thailand (8).

-----**Table 3 about here**-----

In 91 of the 186 cases the Commission imposed preliminary measures. In 103 investigations the Council approved definitive measures. This could be a first indication that the Commission is less protectionist than are the member states, but we will need a more in depth study to confirm. Even more interesting is a look into the imposition rate of antidumping duties in different sectors. Agricultural products, for example, get definitive duties imposed in four out of every five investigations. This may reflect the large influence of the well-organized European agricultural interest groups. Definitive duties are imposed for a period of five years. A party involved can ask for a review within this period, or a so-called ‘sunset’ review or evaluation afterwards.

In a regression with dummies for the countries accused of dumping we find that China and Russia both have a significant positive effect on the duties imposed by the Council. Of course, this could be based on more specific, underlying reasons such as wage costs, government subsidies, etc. We also looked for a possible positive effect on the adoption of antidumping measures of the number of European member states involved, but we do not find a significant effect.<sup>3</sup> One could expect that the more member states have companies that are active in a specific sector, the higher the chance is that the Council approves definitive measures. However, we do not find evidence for such an effect.

### **3. The Model**

Lobbying in the EU’s antidumping procedure can target a number of key players: the Commission and the member states. Although antidumping decisions are taken at the European level, a distinction between national and European lobbying is appropriate. Woll (2009) sees trade lobbying in the EU as a multi-level game. She finds that efforts to influence national governments in addition to EU level lobbying increase the prospects for obtaining protection. Based on a review of cases she concludes that protection-seeking lobbying efforts are successful only if they are also undertaken in the different member states. We present a model that considers lobbying at the European as well as national levels. As campaign contributions and financial transfers are not allowed in the EU, the model by Grossman and Helpman (1994), cannot serve as a starting point for our analysis. An information transmission model is better suited in this context.

We present a spatial model of EU antidumping policy.<sup>4</sup> The EU antidumping procedures determine duties to be imposed on the dumped goods and lead to levels  $l \in \mathbb{R}$  of protection for EU industries affected by the dumping. Alternative levels of protection are represented by points in a one-dimensional policy space. Policymaking can then be thought of as choosing a point in the policy space. The protection level  $l$  enjoyed by an industry depends on the duties  $d \in \mathbb{R}^+$  that are imposed and the injury  $y \in \mathbb{R}^+$  the industry suffers from the dumping. In particular, the protection level  $l = d - y$ .

The policy makers are the member member states, as represented in the Council of Ministers, and the Commission.<sup>5</sup> I assume that the member states have Euclidean preferences over the protection level  $l$ . That is, each member state  $k$  has an ideal protection level  $l_k$  and prefers policies that are closer to, rather than farther away from, its ideal protection level. The member states' ideal protection levels reflect their general attitudes towards free trade, the governing parties' stands on economic policies and the interests they have in the industries affected by the dumping. The Commissioners are also assumed to have Euclidean preferences over EU policies. Their ideal protection levels reflect their own ideologies and their incentives to protect the EU industries.<sup>6</sup>

The Commission can be represented as a unitary actor. The median Commissioner and all Commissioners who prefer less (more) protection prefer the median Commissioner's ideal protection level to any higher (lower) protection level. Under simple majority rule the median Commissioner's ideal protection level thus defeats any other protection level in a pairwise comparison.<sup>7</sup> In general the protection level that is closer to the median Commissioner's ideal protection level wins pairwise comparisons. Since the Commission uses majority rule and has no restrictions on amendments, it acts as a unitary actor with ideal protection level equal to the median Commissioner's ideal protection level.<sup>8</sup>

The Council can be represented as a unitary actor in this procedure, because we only consider rightward moves. This means that the pivotal player is the player with the decisive vote, this pivotal player might differ for simple majority, qualified majority or unanimity voting rule, but does not influence our analysis. In matters of antidumping it has been using majority rule since 1995. It can thus be represented as a unitary actor with ideal policy equal to the median member state  $u$ 's ideal protection level  $l_u$ . Prior to 1995 it used qualified majority rule.<sup>9</sup> An antidumping procedure starts with a complaint by an EU industry. An EU industry which considers itself affected by dumping can file a complaint. The complaint is addressed to the

Commission. It contains information on the extent of the injury. The Commission can then initiate an investigation and impose provisional duties. The purpose of the investigation consists of determining the existence, degree and effect of the dumping. The provisional duties are in effect for a limited time only. At the end of that time period the Commission can propose definitive duties. This proposal is then voted on in the Council. A majority is required for the imposition of definitive duties.

The duties reflect the injury to the EU industry. The Commission investigation seeks to determine the injury. At the beginning of the investigation the Commission faces uncertainty with regard to the effects of the dumping. The affected industries have more information on these effects. The investigation period provides the affected industries with opportunities to transmit that information. They have incentives to misrepresent their information, however, as their preferences are different from the Commission. Industries that compete with the alleged violators of the antidumping rules have incentives to overstate the effects of the dumping. Industries that use the alleged violators' products as inputs, by contrast, have incentives to represent the effects as insignificant. Since the Commission is aware of these incentives, industries can only imperfectly transmit their information. The transmission of information during the investigation can be modeled as a signaling model. In the model we focus on the transmission of information by a single industry.

The time sequence of the model is shown in Figure 1.<sup>10</sup> First, nature chooses the extent of the injury  $y$  and reveals this value to the industry  $i$ . The Commission  $c$  and the member states do not observe the value of  $y$ . They only know its distribution. We assume for simplicity that the parameter  $y$  is uniformly distributed over the unit-interval  $[0,1]$ . Subsequently, the industry decides whether to file a complaint and send a message  $m_i^c$  to the Commission. The message provides information on the injury  $y$ . It is of the form  $m_i^c = I \subseteq [0,1]$ .<sup>11</sup> That is, the message says that the injury  $y$  belongs to the subset  $I$  of the unit-interval. Next, the Commission launches an investigation and proposes a provisional duty  $d_c^p \in \mathfrak{R}^+$ . At the end of the process the Commission can propose definitive duties  $d_c^d \in \mathfrak{R}^+$ . These duties are subject to an up-or-down vote in the Council: member state  $k$ 's vote  $v_k \in \{0,1\}$ . Vote  $v_k = 0$  then stands for a no vote,  $v_k = 1$  for a yes. A majority is required for approval. Prior to this vote the industry can send a signal  $s_i^u \in \{0,1\}$  to member state  $u$ .<sup>12</sup> Signal  $s_i^u = 0$  advises member state  $u$  to vote no, whereas message  $s_i^u = 1$  advises it to vote yes.<sup>13</sup>



-----Figure 1 about here-----

We first analyze a simplified, complete information version of the model. In this version of the model the value of the parameter  $y$  is known to all players, i.e., the Commission, the member states and the industry. Subsequently, we study the model as described above. The players know each other's preferences and the sequential structure of the model. One can interpret a complete information model as a model in which we assume the Commission and its experts find out the true value of the injury  $y$ , and the member states know that the Commission knows the true value

An equilibrium consists of a strategy for each player. Strategies tell the players what actions to choose in the relevant stages of the procedure, given their beliefs about what happened in prior stages of the process. The Commission's beliefs  $g(m_i^c)$  when it proposes duties are a function of the message it received from the industry. Member state  $u$ 's beliefs  $h_u(d_c^p, d_c^d, s_i^u)$  at the vote stage are a function of the provisional and definitive duties the Commission proposes and the signal member state  $u$  receives from the industry.

The equilibrium concept is sequential. In a sequential equilibrium, no player can achieve a higher utility by choosing another strategy, given his or her beliefs about what happened in prior stages and given the other players' strategies. Moreover, the players' beliefs should be consistent with the players' actions in prior stages.

We look for most influential equilibria. Lobbying is informative if it changes the beliefs of the receiver of the message or signal. It is influential if the receiver's subsequent actions differ depending on the message or signal received. A lobbying strategy is at least as influential as another lobbying strategy if it elicits at least as many different actions. In a most influential equilibrium the lobbying strategies are at least as influential as any other lobbying strategies.

The optimal strategies of the Commission, the industry and the member states depend on the ideal protection levels and on the information they have. In particular, the industry's optimal investigation stage lobbying strategy  $m_i^c * (l_i, l_c, l_u; y)$  is a function of the ideal protection levels of the industry, the Commission and member state  $u$ , and the injury  $y$ . The Commission's optimal provisional duty strategy  $d_c^p * (m_i^c; l_c)$  is a function of the industry's

investigation stage message and the Commission's ideal protection level  $l_c$ . The Commission's optimal definitive duty strategy  $d_c^d * (m_i^c; l_i, l_c, l_u)$  is a function of the industry's investigation stage message and the ideal protection levels of the industry, the Commission and member state  $u$ . The industry's optimal vote stage lobbying strategy  $s_i^u * (d_c^d; l_i, l_u; y)$  is a function of the definitive duties proposed by the Commission, the ideal protection levels of the industry and member state  $u$ , and the injury  $y$ . Member state  $u$ 's optimal voting strategy  $v_u * (d_c^d, s_i^u; l_i, l_u)$  is a function of the definitive duty the Commission proposed, the signal the member state received from the industry and the ideal protection levels of the industry and member state  $u$ .

### 3.1 Complete Information

If the extent of the injury  $y$  is known to the Commission and the member states, the industry cannot provide extra-information and the policy-makers can ignore the industry. At the vote stage member state  $u$  then votes in favor of the proposed definitive duty, if the resulting level of protection is closer to its ideal protection level than is the reversion level, i.e., no duty. That is, member state  $u$  votes in favor if  $(d_c^d - y - l_u)^2 \leq (-y - l_u)^2 \Leftrightarrow d_c^d \leq 2(l_u + y)$ . As member state  $u$  is pivotal for approval of a duty, the proposed definitive duty is then approved.

Let the set  $Q$  be the Council's acceptance set, that is, the set of duties a majority prefers to no duty. The set  $Q$  is then equal to the set  $[0, 2(l_u + y)]$ , as illustrated in Figure 2.<sup>14</sup> The duty  $2(l_u + y)$  is the duty that makes member state  $u$  indifferent to no duty.<sup>15</sup>

-----Figure 2 about here-----

At the investigation stage the Commission proposes a definitive duty  $d_c^d$ . It does not necessarily propose the duty  $l_c + y$  that results in its ideal protection level  $l_c$ , however. It realizes that the duty needs the approval of a majority in the Council. Therefore, it proposes the duty that brings the protection level closest to its ideal protection level and belongs to the set  $Q$ . So, it proposes the duty  $l_c + y$ , if  $l_c + y \in [0, 2(l_u + y)]$ . Otherwise it proposes the duty

$2(l_u + y)$  that makes member state  $u$  indifferent to no duty. In Figure 2 the Commission proposes the duty  $d_c^d = l_c + y$  that results in its ideal protection level. If the Commission's ideal protection level were the level  $l_c$ , however, it could not propose the duty  $l_c + y$  that would result in its ideal protection level, because member state  $u$  would prefer no duty. Instead, the Commission would propose the duty  $d_c^{d'} = 2(l_u + y)$  that makes member state  $u$  indifferent to no duty.

Provisional duties need not be accepted by the Council. The Commission thus imposes the duty  $l_c + y$  that results in its ideal protection level as the provisional duty. In Figure 2 the provisional duty is thus equal to the definitive duty, i.e.,  $d_c^p = d_c^d$ . If the Commission's ideal protection level were  $l_c$ , however, the provisional duty would be higher than the definitive duty, because the provisional duty does not need the approval of a majority in the Council. In general, definitive duties are either equal to the provisional duties or lower.

### 3.2 Incomplete Information

Under incomplete information the policy-makers do not observe the extent of the injury. They know that the injury  $y$  is uniformly distributed over the unit-interval, and may receive more information from the industry.

#### 3.2.1 Vote Stage

At the vote stage member state  $u$  compares the proposed definitive duty  $d_c^d$  to no duty. It makes this comparison based on its beliefs about the extent of the injury. Member state  $u$  votes in favor of the proposal if its induced utility  $V_u(d_c^d)$  under the proposed duty is higher than its induced utility  $V_u(0)$  under no duty. Its induced utility under the proposal is equal to its expected utility  $E[U_u(d_c^d - y) | \cdot] = -(l_u - d_c^d + E(y | \cdot))^2 - \text{var}(y | \cdot)$ . Similarly, its induced utility under no duty is equal to its expected utility  $E[U_u(-y) | \cdot] = -(l_u + E(y | \cdot))^2 - \text{var}(y | \cdot)$ .

Member state  $u$  thus votes in favor, if the expected protection level  $d_c^d - E(y | \cdot)$  resulting from the proposed duty is closer to its ideal protection level than is the expected protection level  $- E(y | \cdot)$  of no duty, i.e., if

$$(l_u - d_c^d + E(y | \cdot))^2 \leq (l_u + E(y | \cdot))^2$$

$$\Leftrightarrow d_c^d \leq 2(l_u + E(y | \cdot)).$$

This is illustrated in Figure 3. In the Figure member state  $u$  believes that the injury  $y$  is uniformly distributed over the unit interval. Its ideal protection level  $l_u$  is closer to the expected protection level of the duty than to the expected protection level of no duty. So, member state  $u$  votes in favor.

-----Figure 3 about here-----

### 3.2.2 Vote Stage Lobbying

Suppose that in the absence of vote stage lobbying member state  $u$  believes that the injury  $y$  is uniformly distributed over the interval  $[\underline{y}, \bar{y}]$ . If the industry prefers the proposed duty  $d_c^d$  to no duty for the smallest injury  $y = \underline{y}$ , it prefers the duty  $d_c^d$  for all  $y \in [\underline{y}, \bar{y}]$ . Thus, it can only engage in informative vote stage lobbying, if it prefers no duty for  $y = \underline{y}$ , i.e., if  $d_c^d > 2(l_i + \underline{y})$ . Similarly, it can only engage in informative vote stage lobbying, if it prefers the duty for  $y = \bar{y}$ . The industry thus engages in informative vote stage lobbying only if  $2(l_i + \underline{y}) < d_c^d \leq 2(l_i + \bar{y})$ .

In Figure 3 the industry can engage in informative vote stage lobbying, because it prefers no duty for small injuries  $y \in \left[0, \frac{d_c^d - 2l_i}{2}\right]$ , but prefers the duty for larger injuries. The industry sends the signal “vote against” for small  $y$ , “vote in favor” for large  $y$ .

Informative lobbying does not imply influential lobbying, however. For informative lobbying to be influential, it needs to be in member state  $u$ 's interest to follow the industry's advice. Suppose member state  $u$  receives the signal “vote against.” The industry sends this signal in

interval  $[\underline{y}, \frac{d_c^d - 2l_i}{2}]$ . The expected value of  $y$  is then  $\frac{2\underline{y} + d_c^d - 2l_i}{4}$ . Having received the signal “vote against” member state  $u$  then votes against if  $d_c^d > 4l_u + 2\underline{y} - 2l_i$ . A similar condition holds for voting in favor. Vote stage lobbying is thus influential in interval  $[\underline{y}, \bar{y}]$  if  $4l_u + 2\underline{y} - 2l_i < d_c^d \leq 4l_u + 2\bar{y} - 2l_i$ .

Influential vote stage lobbying thus requires that member state  $u$  and the industry be (1) not too extreme and (2) close enough to each other. Influential lobbying leads to the duty’s defeat for small values of  $y$ , whereas it leads to its approval for large values.

In Figure 3 informative vote stage lobbying is influential. Suppose the parameter  $y$  is in the lower interval, i.e.,  $y \in \left[0, \frac{d_c^d - 2l_i}{2}\right]$ . In this interval the industry prefers no duty and advises to vote against. As member state  $u$ 's ideal protection level is lower than the industry's ideal protection level, it prefers no duty as well and votes against. Suppose the parameter  $y$  is in the upper interval. In this interval the industry prefers the duty and advises to vote in favor. Member state  $u$  votes in favor, because it expects a higher utility from the duty. In fact, it expects a higher utility from the duty, if it believes that the parameter  $y$  is uniformly distributed over the entire interval, as shown in the previous subsection. A fortiori it expects a higher utility from the duty if it believes the parameter  $y$  is uniformly distributed over the upper subinterval.

### 3.2.3 Agenda Setting

At the definitive duty stage the Commission proposes the duty that maximizes its expected utility given its beliefs with regard to the value of  $y$ . Its beliefs need to be consistent with the industry's investigation stage lobbying strategy. Its expected utility depends on whether the industry engages in influential vote stage lobbying and whether a qualified majority in the Council approves the duty.

Suppose that the Commission believes that  $y \in [\underline{y}, \bar{y}]$  and that it proposes the duty that maximizes its expected utility without vote stage lobbying. The Commission then proposes

the duty  $l_c + \left( \frac{\underline{y} + \bar{y}}{2} \right)$  that sets the expected protection level equal to its ideal protection level,

if (1) member state  $u$  expects a lower utility from no duty, and (2a) the industry prefers the duty for  $y = \underline{y}$ , or (2b) member state  $u$  votes in favor when it receives the signal “vote against” from the industry. Condition (1) assures that a qualified majority approves the duty. Condition (2a) makes sure that the industry cannot engage in informative vote stage lobbying, whereas condition (2b) states that it cannot engage in influential vote stage lobbying.

Otherwise the Commission proposes the duty  $2 \left( l_u + \left( \frac{\underline{y} + \bar{y}}{2} \right) \right)$  that makes member state  $u$

indifferent to no duty in interval  $[\underline{y}, \bar{y}]$ , the duty  $2(l_i + \underline{y})$  that makes the industry indifferent to no duty for  $y = \underline{y}$ , or the duty  $4l_u + 2\bar{y} - 2l_i$  that makes member state  $u$  indifferent to no duty when it receives the signal “vote against”.

The Commission's maximization problem with vote stage lobbying is illustrated by an example in the next section. Between the two optimal duties, with and without vote stage lobbying, the Commission chooses the one that maximizes its expected utility. It weighs the closeness of the expected protection levels and the degrees of uncertainty.

### 3.2.4 Investigation Stage Lobbying

At the proposal stage the industry sends a message  $m_i = M \subseteq [0,1]$  to the Commission. If the industry's preferences are identical to the Commission's, it truthfully reveals the value of  $y$ . As the industry's preferences become more different from the Commission's, the industry has an incentive to behave strategically. As a result it can transmit less information to the Commission. It can only truthfully report intervals for the value of  $y$ . As the industry's preferences diverge from the Commission's, the number of intervals it can report is reduced and the intervals get larger. If the industry is too far from the Commission, it cannot credibly transmit any information at the investigation stage.

Crawford and Sobel (1982) calculate the size of the largest equilibrium partition, i.e., the largest number of subintervals in equilibrium. They find that it is equal to the largest integer

smaller than  $\frac{1}{2} + \left(\frac{1}{2}\right)\left(1 + \frac{2}{l_i - l_c}\right)^{0.5}$  for  $l_i \geq l_c$ . That is also true in this model.<sup>16</sup> For  $l_i < l_c$  it is equal to the largest integer smaller than  $1 + \frac{1}{4(l_c - l_i)}$ .

In equilibrium the industry does not have an incentive to misrepresent the value of  $y$ . This implies that it is indifferent between the Commission's two proposals at the separating point between two intervals. The duty  $d^1$  proposed in the lower interval is lower than the duty  $d^2$  proposed in the higher interval. If the duty  $d^2$  were lower, the industry would have an incentive to misrepresent the value of  $y$ .

Suppose one of the two duties is voted down at the relevant separating point. If it were the higher one, this would imply that the duty proposed in the lower interval were negative. Since duties are positive, in equilibrium the proposed definitive duty may be voted down in the lowest interval only, and vote stage lobbying may occur in that interval only.

At the provisional duty stage the Commission imposes the provisional duty  $d_c^p = l_c + \frac{1}{2}$  that sets the expected protection level equal to its ideal protection level.

### 3.3 Examples

This section studies two specific configurations of ideal protection levels. In the first example the lobbying industry, referred to as a protectionist industry, is the plaintiff and wants a high duty. It is closer to the Commission than to member state  $u$ . The Commission is sympathetic to the industry's demands, because it is eager to protect EU industries. The pivotal member state is less sympathetic, because the industry is important in only a few member states. In the second example the industry, referred to as a free-trade industry, wants a low duty, for example because it consumes the dumped product.

#### 3.3.1 A Protectionist Industry

In this example the ideal protection levels of the players are as follows:  $l_i = 0.3$ ,  $l_c = 0.2$ ,  $l_u = 0$ . The number of subintervals in the most influential equilibrium depends on the distance  $l_i - l_c = 0.1$  between the industry and the Commission. In particular, the upper bound on the number of subintervals is equal to  $\frac{1}{2} + \left(\frac{1}{2}\right)\left(1 + \frac{2}{0.1}\right)^{0.5} = 2.8$ . So, in the most influential equilibrium there are at most two subintervals.

At the separating value  $\hat{y}$  the industry is indifferent between sending either message. That is,  $l_i - d^1 + \hat{y} = d^2 - \hat{y} - l_i$ . The Commission could try to propose the duties,  $d^1 = l_c + \frac{\hat{y}}{2}$  and  $d^2 = l_c + \frac{\hat{y} + 1}{2}$ , that set the protection levels equal to its ideal protection level. Then we obtain that  $\hat{y} = 0.3$ ,  $d^1 = 0.35$  and  $d^2 = 0.85$ . This is not an equilibrium, however, because member state  $u$  then prefers no duty in the lower interval: the expected protection level of no duty,  $-0.15$ , is closer to member state  $u$  than is the expected protection level of the proposal,  $0.2$ . So, the Commission proposes the duty that makes member state  $u$  indifferent to no duty in the lower interval, i.e.,  $d^1 = 2(l_u + \frac{\hat{y}}{2})$ . We then get that  $d^1 = \hat{y} = 0.2$  and  $d^2 = 0.8$ . This equilibrium is illustrated in Figure 4.

-----Figure 4 about here-----

The duties are approved at the vote stage, because member state  $u$  prefers them to no duty. The expected protection levels of the duties are equal to  $0.1$  and  $0.2$ , whereas the expected protection levels of no duty are equal to  $-0.1$  and  $-0.6$ . The industry does not engage in vote stage lobbying, because it prefers the protection levels of the duties to the protection levels of no duty for all values of  $y$ .

The Commission has no incentive to propose another duty in either subinterval. In the first subinterval it cannot successfully propose a higher duty, because member state  $u$  would reject it. It cannot propose a duty that leads to vote stage lobbying, because this requires that the industry prefer no duty for  $y=0$ . This implies a duty  $d^1 > 0.6$ , but member state  $u$  prefers no



duty to that duty or any higher duty for all values of  $y$  in the subinterval. Vote stage lobbying would thus not be influential. In the second interval the Commission obtains its ideal protection level in expectation. Vote stage lobbying requires a duty  $d^2 > 1$ . Such policies reduce the Commission's expected utility, however.

The industry, finally, has no incentives to send other messages to the Commission. Suppose it sends the message  $m_c^i = [0,1]$  regardless of the value of  $y$ . If the Commission then proposes the duty  $d_c^d = 0.7$  that sets the expected protection level equal to its ideal protection level, the industry successfully engages in vote stage lobbying and advises member state  $u$  to vote against the proposal in the interval  $[0,0.05]$ . The Commission then has an incentive to propose a higher duty. The expected utility of the industry remains lower than its expected utility in the most influential equilibrium without vote stage lobbying, however, because she gets no duty in the lower interval, whereas she gets the duty  $d^1 = 0.2$  in the most influential equilibrium's lower interval.

The industry cannot engage in influential vote stage lobbying, if it sends one of two messages,  $m_c^i = [0, \hat{y}]$  and  $m_c^i = [\hat{y}, 1]$  at the investigation stage. The industry can credibly send the signal “vote against” only if the proposed duty  $d^1 > 0.6$  in the lower interval. For member state  $u$  to accept the proposal, the lower interval needs to be at least  $[0,0.6]$  or larger. Only then does member state  $u$  prefer the proposal to no duty when it receives the signal “vote in favor.” In the upper interval the Commission then obtains its ideal duty in equilibrium. Its proposed duty  $l_c + \left(\frac{\hat{y} + 1}{2}\right) = 0.7 + \frac{\hat{y}}{2}$  in the upper interval is then insufficiently high to make the industry indifferent at the separating point, however.

### 3.3.2 A Free-Trade Industry

In this example the ideal protection levels are the same except for the industry's ideal protection level. It is equal to zero. The upper bound on the number of subintervals is equal to  $1 + \frac{1}{4(0.2)} = 2.25$ . The industry thus sends at most two messages at the duty stage. It engages in vote stage lobbying, unless the Commission proposes no duty, because the industry and member state  $u$  prefer no duty to any upward move for small enough values of  $y$ .

In the lower interval the Commission solves the maximization problem under vote stage lobbying. In particular, it proposes the duty  $d^1 = 0.27 + 1.33 \hat{y} - 0.13(4 + 10 \hat{y} + 25 \hat{y}^2)^{0.5}$ . In equilibrium  $\hat{y} = 0.96$ ,  $d^1 = 0.74$ ,  $d^2 = 1.18$ , and the duty  $d^1$  is voted down for  $y < 0.37$ . This equilibrium is illustrated in Figure 5.

-----Figure 5 about here-----

### 3.4 A procedure with EP Involvement

The current antidumping procedure involves only one of the two EU legislative chambers, the Council, in addition to the Commission. The consent of the EP is not needed. Moreover, no supermajority is required in the Council. As a result antidumping duties can be approved more easily than most other decisions, which require support from a qualified majority or unanimity. Even if only a minority of the member states suffers from an injury, it is easier to convince a simple than a qualified majority to support duties.

A procedure in which the consent of the EP is needed in addition to majority support in the Council can result in a much more stringent procedure depending on the position of the EP compared to the position of the pivotal member state. One could argue that in current-day EU politics the EP is one of the defenders of consumer interests, and could as a consequence be more reluctant to impose antidumping duties. Our empirical analysis will show that this is indeed the case. As a consequence it becomes more difficult to get antidumping duties approved, and duties could be lower than without the empowerment of the EP.

We extend the model to consider a potential future procedure in which the consent of the EP, with ideal protection level  $l_p$ , is needed. The only change compared to the current antidumping procedure is at the vote stage. The pivotal player can be either the pivotal member state  $u$  or the EP, depending on which of these two players is closer to the status quo. A lobbyist then lobbies the pivotal player, whether it be the pivotal member state or the EP. As a consequence the equilibrium at this stage does not differ much from the equilibrium in

the current procedure. Duties get approved if  $\frac{d^d}{2} + E(y/. ) \leq \min (l_u, l_p )$ .

-----Figure 6 about here-----

Proposal stage lobbying is as under the current antidumping procedure. An industry is more influential at the vote stage than under the current procedure if the EP is closer to the status quo and industry than is the pivotal member state.

The empowerment can result in more gridlock. If for example  $l_p = 0$  and  $l_u > l_p$  where  $u$  is the pivotal member state and  $p$  represents the EP. Under complete information this would result in lower duties. The same is true in the incomplete information model. This may be one of the reasons why the EP has not yet been empowered for approving antidumping duties. Member states may worry that trade protection for their respective vulnerable industries, become more difficult to obtain than under the current antidumping procedure.

In the next sections we analyze whether there are indeed indications that the EP is less protectionist than the Council. Therefore, we use a Bayesian item response model to determine the positions of the EP and the Council on trade issues. Our conclusions indicate that the EP is indeed less protectionist than the Council.

#### **4. Data and Method**

In this section we present the data we use to locate the different political actors based on their preferences on trade policy. We use roll-call votes cast on trade issues from December 2009, when the Treaty of Lisbon came into force, until June 2014. These votes are on tariffs, free-trade agreements, and general rules on antidumping policy but also, for example, on trade-related financial aid for third countries. The data were obtained from votewatch.eu. We focused on the policy area ‘International Trade’. Votewatch.eu contains information to identify when the EP and the Council vote on the same issue and text.

We use standard Bayesian item response models (Clinton, Jackman and Rivers 2004; Jackman 2014) for both one- and a two-dimensional policy spaces. For a comparison between Bayesian item response models and NOMINATE we refer to Hagemann (2007). The model assumes that an actor votes ‘yea’ on an act if the proposal increases his utility compared to the

status quo. In total we consider 862 Members of the European Parliament (MEPs) and 123 roll-call votes. There are 47 corresponding Council votes and 28 member states.

## 5. Empirical Results

First, we scale the MEPs independently from the Member States in one- and two-dimensional policy spaces. Overall, in a one-dimensional policy space 88.32 per cent of the votes are predicted correctly, whereas in a two-dimensional policy space 92.17 per cent are. We use the percentage of yea votes (76.18%) as the threshold to classify predicted yea votes. The rather small difference in predictive power between the one- and two-dimensional scaling indicates that the first dimension, which we identify as the protectionism - free trade dimension and almost completely corresponds to the classic left-right dimension, already explains most of the variation in voting behavior. The second dimension, which can be considered as a centrist-extremist dimension or a pro-contra EU dimension, does not explain that much additional variability.

The Progressive Alliance of Socialists and Democrats (S&D – in purple in Figures 7-10) is rather protectionist, to the left in Figure 7, the European People’s Party (EPP - in green) less so, and the Alliance of Liberals and Democrats for Europe (ALDE – in red) is in between the other two. The other political groups are the European Conservatives and Reformists (ECR - in orange), Europe of Freedom and Direct Democracy (EFD – in blue), the European United Left – Nordic Green Left) (GUE-NGL – in turquoise), and the Greens (in light blue).

**-Insert figure 7 about here-**

In the two-dimensional policy space, however, we find that the centrist political groups, the EPP, S&D and ALDE, tend to be low on dimension 2, the anti-EU groups higher.

**-Insert figure 8 about here-**

Next, we scale the member states. To scale the member states in a common policy space with the MEPs, we treat them as if they are MEPs that only voted on a subset of EP decisions.

Where there were no corresponding votes, we coded the votes as missing. Due to the limited number of Council votes we cannot estimate differences in member state positions due to changing governments. This section therefore should be seen as an illustration rather than a true empirical analysis. The model makes abstraction of strategic voting. Compared to wnominate, Bayesian item response models have the advantage that the results are more stable when the number of votes is limited (Clinton and Jackman 2009, Carroll et al. 2009, and Hagemann, 2007).

For the scaling of both MEPs and member states, we use the percentage of yea votes (76.57) as the threshold to evaluate the predictive power of the model. The one dimensional model, shown in Figure 9, predicts 87.37 per cent of the votes correctly, whereas the two-dimensional model, in Figure 10, predicts 91.81 per cent correctly. The interpretation of the dimensions is the same as for the scaling of the MEPs only. However, the pro-anti EU dimension is turned around. Centrist groups are up, anti EU groups down in the Figure. The member states are located close together, in the circles in Figures 9 and 10. The ideal points range from -0.49 for the United Kingdom to -0.26 for Austria.

**-Insert figure 9 about here-**

**-Insert figure 10 about here-**

When we look into the predictive capabilities of the two models, as we do in Tables 4 and 5, and focus on the member states, we find that the two-dimensional model does not add much predictive power. For a lot of the member states the one-dimensional model is even more predictive than the two-dimensional model. This might be due to the limited number of observations and the even smaller number of no votes, and the simulation of the missing votes. In both versions of the model, the percentage of correctly predicted votes of the member states is about 74%.

**-Insert table 4 about here-**

**-Insert table 5 about here-**

For the large political groups the story is somewhat different. The votes of the MEPs of the EPP are slightly better predicted in a one-dimensional policy space (95.57 per cent versus 94.63), whereas the vote predictions of ALDE, S&D and ECR clearly benefit from an additional dimension: the percentages of correctly predicted votes increase from 90.06 to 92.10, from 87.16 to 95.58 and from 86.92 to 94.65% for these three groups, respectively.

Overall it looks like the two-dimensional model better represents reality, especially for the political groups.

Our theoretical model predicts that the empowerment of the EP in the antidumping procedure only has an impact on policies if the EP is less protectionist than the Council. In the one-dimensional policy space the Council median is at -0.335, as shown in Table 6, whereas the median MEP is at 0.035, which indeed shows that the EP is less protectionist than the Council. In this scenario the empowerment of the EP can have an impact on the outcome of the antidumping procedure. All member states are more protectionist than the median MEP. As a consequence a change of the antidumping procedure that gives the EP veto powers will not be approved

**-Insert table 6 about here-**

## **6. Discussion**

In essence the EU antidumping procedure is a straightforward procedure. The Commission proposes a duty, or none, and then the Council approves or rejects it by simple majority. However, there is likely to be imperfect information about the extent of the injury that results from dumping. Both actors, the Commission and the Council, have beliefs about the extent of the injury, that are partially based on information they get from the affected industry. In the incomplete information model, we distinguish two different stages, the proposal and vote stages, in which a different kind of lobbying can occur.

We find that in the complete information model the Commission sets the duty it prefers most from among the duties a simple majority of member states prefer to the status quo. In the

incomplete information model the industry affected by dumping has private information. It lobbies the Commission at the proposal stage and the pivotal member state at the vote stage.

Furthermore, we study a model that adds the EP as a veto player in the vote stage. We find that adding this veto player only has an effect on the imposition of duties and the extent of the duties, if the EP is more reluctant to impose duties than is the pivotal member state. This may be a reason for the non-empowerment of the EP by the member states in antidumping policy.

We use Bayesian item response models to scale both the EP and the Council, and find evidence that the EP is indeed less protectionist than is the Council. The empowerment of the EP in antidumping could thus cause multiple member states to be worse off. Future research will need to explain why the role of the EP was extended in other aspects of trade decision-making.

## References

- Austen-Smith D (1993) Information and influence: Lobbying for agendas and votes. *American Political Science Review* 37(3):799-833.
- Baron, D (2000) *Business and Its Environment*. Upper Saddle River: Prentice Hall.
- Black, D (1958) *The Theory of Committees and Elections*. London: Cambridge University Press.
- Blonigen BA and Prusa TJ (2001) Antidumping. *NBER Working Paper* No. 8398.
- Brenton P (2001) Anti-dumping policies in the EU and trade diversion. *European Journal of Political Economy* 17(3): 593-607.
- Crawford, V and Sobel J (1982) Strategic information transmission. *Econometrica* 50(6):1431-51.
- Crombez C (1996) Legislative procedures in the European Community. *British Journal of Political Science* 26(2): 199-228.
- Crombez C (1997) The Codecision Procedure in the European Union. *Legislative Studies Quarterly* 22(1): 97-119.
- Crombez C (2000) The Treaty of Amsterdam and the codecision procedure. In *The Rules of Integration: the Institutionalist Approach to European Studies*. ed. Gerald Schneider and Mark Aspinwall. Manchester: Manchester University Press.
- Crombez C (2002) Information, lobbying and the legislative process in the European Union. *European Union Politics* 3(1): 7-32.
- Crombez C and Vangerven P (2014) Procedural Models of European Union politics: Contributions and suggestions for improvement. *European Union Politics* 15(2): 289-308.
- Davis L (2009) Ten years of anti-dumping investigation in the EU: how does it work? economic and political targeting. *ECIPE Working Paper* No. 04/2009.



- De Bièvre D and Eckhardt J (2011) Interest groups and EU anti-dumping policy. *Journal of European Public Policy* 18(3):339-360.
- Finger JM (1993) *Antidumping: how it works and who gets hurt*. Ann Arbor, Michigan: University of Michigan Press.
- Gilligan, T and Krehbiel K (1987) Collective decision making and standing committees: An informational rationale for restrictive amendment procedures. *Journal of Law, Economics and Organization* 3(2):145-93.
- Grossman GM and Helpman E (1994) Protection for sale. *The American Economic Review*. 84(4): 833-850.
- Hagemann S (2007) Applying ideal point estimation methods to the Council of Ministers. *European Union Politics*. 8(2): 279-296.
- Jackman S (2014). pscl: Classes and Methods for R Developed in the Political Science Computational Laboratory, Stanford University. Department of Political Science, Stanford University. Stanford, California. R package version 1.4.6. URL <http://pscl.stanford.edu/>
- Nielsen JUM and Svendsen GT (2012) EU lobbying and anti-dumping policy. *Journal of World Trade* 46(1): 187-212.
- Nugent N (1999) *The Government and Politics of the European Union*. London: Macmillan.
- Prusa TJ (2001) On the spread and impact of antidumping. *Canadian Journal of Economics* 34(3): 591-611.
- Prusa TJ (2005) Anti-dumping: A growing problem in international trade. *World Economy* 28(5):683-700.
- Steunenberg B (1994) Decision making under different institutional arrangements: Legislation by the European Community. *Journal of Institutional and Theoretical Economics* 150(4): 642-669.

- Steunenberg B and A Dimitrova A (2003): *Interests, Legitimacy, and Constitutional Choice: The Extension of the Codecision Procedure in Amsterdam*, Working Paper, University of Twente.
- Tsebelis G (1994) The power of the European Parliament as a conditional agenda setter. *American Political Science Review* 88(1): 128-142.
- Vermulst EA (1990) The antidumping systems of Australia, Canada, the EEC and the USA: Have antidumping laws become a problem in International Trade? In: Jackson JH and Vermulst EA eds 1990. *Antidumping law and practice: A comparative study*. University of Michigan Press, 461.
- Woll C (2009) Trade policy lobbying in the EU: Who captures whom?. In: Coen D and Richardson J eds. 2009. *Lobbying the European Union: institutions, actors and issues*. Oxford, UK: Oxford University Press, pp. 282-285.

## APPENDIX A: The Model

### *The Model of the Antidumping Procedure*

- The policy space  $L \subseteq \mathfrak{R}$  consist of one dimension, the level of trade protection in a specific market.
- The political actors are: the member states in the Council; a lobbying industry; and the Commissioners. In an additional version of the model we add the European Parliament (EP).
- They have Euclidean preferences over a protection level  $l \in L$ . That is, actor  $j$  has the following utility function:  $U_j(l) = -(l_j - l)^2$ , where  $l_j \in L$  is actor  $j$ 's ideal level of protection.
- The protection level  $l = d - y$ , where  $d \in \mathbb{R}^+$  represents the duties imposed and  $y \in \mathbb{R}^+$  stands for the injury the industry suffers from.
- For simplicity we assume that  $y$  is uniformly distributed over the unit interval  $[0,1]$
- Under perfect and complete information, the level of the injury is revealed to all actors involved.
- Under imperfect information, this information on the injury is only revealed to the industry.
- Within the procedure we consider two different stages: the proposal stage and the vote stage.
- The EP and the Commission use simple majority rule and can thus be represented as unitary actors in the legislative process with respective ideal policies  $l_p$  and  $l_c$  equal to the ideal level of protection of the median MEP on that dimension,  $\forall i$ . See Black (1958). In contrast to the normal legislative procedures in the EU, consultation and codecision, the Council also uses majority instead of qualified majority. As a consequence the Council is also a unitary actor and can also be represented by its median, pivotal, member state  $u$  with ideal level of protection  $l_u$ .
- We assume for simplicity and without loss of generality that in status quo  $d_0 = 0$  or  $q = y$ . So, in status quo there are no antidumping duties.. Furthermore, we assume that there is no majority in favor of a move to the left ( $l_j \geq 0$ ). So, we consider rightward moves only.
- The structure of the institutional process is as follows.
  - An industry  $i$  can apply for antidumping measures and send a message to the Commission  $m_i^c = I \subseteq [0,1]$ , the Commission starts an investigation and can impose provisional duties  $d_c^p \in \mathbb{R}^+$ .
  - Once the investigation is finished the Commission can propose definitive measures  $d_c^d \in \mathbb{R}^+$ . A majority in the Council is required to approve this measures, otherwise the status quo prevails. Member state  $j$  can vote yes (=1) or no (=0):  $v_j \in \{0,1\}$ . The industry can send a signal  $s_i^j \in \{0,1\}$  to member state  $c$ . Where  $s_i^j = 0$  advises to vote no, and  $s_i^j = 1$  advises to vote yes.

- The equilibrium concept is subgame perfection under complete information and sequential equilibrium under imperfect or incomplete information.
- If there is imperfect information then actors have beliefs about parameters they do not know, in this case  $y$ . The Commission's has beliefs  $g(m_i^c)$  in proposal stage.
- Member state  $j$  has beliefs  $h_j(d_c^p, d_c^d, s_i^j)$  at vote stage.
- Optimal strategies depend on the ideal levels of protection of the Commission, the industry and the member states and on the information they have and are as follows
  - $m_i^{c*}(l_i, l_c, l_j; y)$
  - $d_c^{p*}(m_i^c; l_c)$
  - $d_c^{d*}(m_i^c; l_i, l_u, l_c)$
  - $s_i^{j*}(d_c^d; l_i, l_j; y)$
  - $v_j^*(d_c^d, s_i^j; l_j, l_i)$

With  $u$  being the pivotal member state.

### *The Equilibrium with Complete Information*

- The industry can be ignored under complete information and the game can be solved by backward induction.
- At the vote stage member state  $u$  votes in favor of antidumping duties if this is better for itself than the status quo, so if:  $(d_c^d - y - l_u)^2 \leq (-y - l_u)^2 \Leftrightarrow d_c^d \leq 2(l_u + y)$ . Since  $u$  is the pivotal member state, so the member state with the 173th vote out of 345 votes, the definitive duty is accepted. The preferred duty for member state  $u$  is that sets  $d_c^d - y = l_u \Leftrightarrow d_c^d = l_u + y$ , so the duty that makes  $u$  indifferent between approving antidumping duties or retaining the status quo is  $2(l_u + y)$ . The acceptance set for the Commission is then  $[0, 2(l_u + y)]$ .
- In the investigation stage, the Commission sets  $d_c^d = l_c + y$  if  $(l_c + y) \in [0, 2(l_u + y)]$ , otherwise it sets the policy equal to  $2(l_u + y)$ . For the provisional duty the Commission does not have to take into account so it always set  $d_c^p = l_c + y$ .

### *The Equilibrium with Incomplete Information*

- In vote stage the member state  $j$  compares the expected utility of the proposed definitive measure  $E[U_j(d_c^d - y) | \cdot] = -(l_j - d_c^d + E(y | \cdot))^2 - \text{var}(y | \cdot)$ , to the expected utility without duties  $E[U_j(-y) | \cdot] = -(l_j + E(y | \cdot))^2 - \text{var}(y | \cdot)$ . So it votes in favor if:  $(l_j - d_c^d + E(y | \cdot))^2 \leq (l_j + E(y | \cdot))^2 \Leftrightarrow d_c^d \leq 2(l_j + E(y | \cdot))$ . (1)
- In absence of vote stage lobbying, member states  $j$  and  $u$  think  $y \sim U[\underline{y}, \bar{y}]$  (for clarity:  $\underline{y} = 0$  and  $\bar{y} = 1$ ). If for industry  $i$ :  $d_c^d \leq 2(l_i + \underline{y}) \Rightarrow \forall y \in [\underline{y}, \bar{y}]: d_c^d \leq 2(l_i + y)$ .
- Industry  $i$  engages in vote stage lobbying  $\Leftrightarrow d_c^d > 2(l_i + \underline{y})$ .
- Industry  $i$  engages in vote stage lobbying  $\Leftrightarrow d_c^d \leq 2(l_i + \bar{y})$ .

- $2(l_i + \underline{y}) < d_c^d \leq 2(l_i + \bar{y}) \Leftrightarrow$  Industry engages in vote stage lobbying. Or in other words industry  $i$  prefers no duty for  $y \in \left[0, \frac{d_c^d - 2l_i}{2}\right]$ , otherwise it prefers a duty.
- Vote stage lobbying is influential depending on pivotal member state  $u$ 
  - Suppose  $s_i^u = 0$  if  $y \in \left[\underline{y}, \frac{d_c^d - 2l_i}{2}\right]$  and  $E(y) = \frac{2y + d_c^d - 2l_i}{4}$ .
- Pivotal member state  $u$  then votes against if  $d_c^d > 4l_u + 2\underline{y} - 2l_i$  based on equation (1).
  - Suppose  $s_i^u = 1$  if  $y \in \left[\frac{d_c^d - 2l_i}{2}, \bar{y}\right]$  and  $E(y) = \frac{2\bar{y} + d_c^d - 2l_i}{4}$
- Pivotal member state  $u$  then votes against if  $d_c^d \leq 4l_u + 2\bar{y} - 2l_i$  based on equation (1).
- In the agenda setting stage the Commission maximize its expected utility:  $\text{argmax}_d E(U_c(d_c^d | g(m_i^c)))$
- Suppose the Commission has beliefs,  $y \sim U[\underline{y}, \bar{y}]$  and  $y \in [\underline{y}, \bar{y}]$ , and that it maximizes its expected utility without vote stage lobbying  $\Rightarrow d_c^d = l_c + \left(\frac{y + \bar{y}}{2}\right)$ , if:
  - $E(U_u(d_c^d)) \geq E(U_u(0))$ , and
  - $U_i(d_c^d | y = \underline{y}) \geq U_i(0 | y = \underline{y})$ ,
  - or  $v_u = 1$  if  $s_i^u = 0$ .
- Otherwise it sets respectively
  - $d_c^d = l_u + \left(\frac{y + \bar{y}}{2}\right)$ ,
  - $d_c^d = 2(l_i + \underline{y})$  or
  - $d_c^d = 4l_u + 2\bar{y} - 2l_i$ .
- Lobbying in investigation stage: the industry  $i$  sends a message  $m_i^c = M \subseteq [0,1]$  to the Commission. If  $l_c = l_i \Rightarrow m_i^c = y$ , otherwise in equilibrium  $M$  is a subinterval and in equilibrium there are maximum the largest integer smaller than  $\frac{1}{2} + \left(\frac{1}{2}\right) \left(1 + \frac{2}{l_i - l_c}\right)^{0.5}$  for  $l_i \geq l_c$  (Crawford and Sobel 1982) intervals. For  $l_i < l_c$  its equal to the largest integer smaller than  $1 + \frac{1}{4(l_c - l_i)}$ .
- In equilibrium for messages ...  $[a, b], [b, c] \dots \subseteq [0,1]$ :  $U_i(d^1 | b = b^*) \geq U_i(d^2 | b = b^*)$  and  $d^1 < d^2$  with  $d^1$  being the duty proposed in the lower interval, and  $d^2$  being the duty proposed in the higher interval.
- In the provisional duty stage  $d_c^p = l_c + \frac{y + \bar{y}}{2}$ .

### *The Model and Equilibrium with EP involvement*

- The structure of the institutional process changes a little and is as follows.
  - An industry  $i$  can apply for antidumping measures and send a message to the Commission  $m_i^c = I \subseteq [0,1]$ , the Commission starts an investigation and can impose provisional duties  $d_c^p \in \mathbb{R}^+$ .
  - Once the investigation is finished the Commission can propose definitive measures  $d_c^d \in \mathbb{R}^+$ . A majority in the Council **and the EP** is required to approve this

measures, otherwise the status quo prevails. Member state  $j$  can vote yes (=1) or no (=0):  $v_j \in \{0,1\}$ . The EP  $p$  can also vote yes (=1) or no (=0):  $v_p \in \{0,1\}$ . The industry can send a signal  $s_i^j \in \{0,1\}$  to member state  $j$  and a signal  $s_i^p \in \{0,1\}$  to the EP,  $p$ . Where  $s_i^j, s_i^p = 0$  advises to vote no, and  $s_i^j, s_i^p = 1$  advises to vote yes.

- The equilibrium concept is sequential equilibrium because of the incomplete information.
- If there is imperfect information then actors have beliefs about parameters they do not know, in this case  $y$ . The Commission's has beliefs  $g(m_i^c)$  in proposal stage.
- Member state  $j$  has beliefs  $h_j(d_c^p, d_c^d, s_i^j)$  at vote stage.
- The EP has beliefs  $h_p(d_c^p, d_c^d, s_i^p)$
- Optimal strategies depend on the ideal levels of protection of the Commission, the EP, the industry and the member states and on the information they have and are as follows
  - $m_i^{c*}(l_i, l_c, l_j, l_p; y)$
  - $d_c^{p*}(m_i^c; l_c)$
  - $d_c^{d*}(m_i^c; l_i, l_u, l_c, l_p)$
  - $s_i^{j*}(d_c^d; l_i, l_j; y)$
  - $s_i^{p*}(d_c^d; l_i, l_p; y)$
  - $v_j^*(d_c^d, s_i^j; l_j, l_i)$
  - $v_p^*(d_c^d, s_i^p; l_p, l_i)$

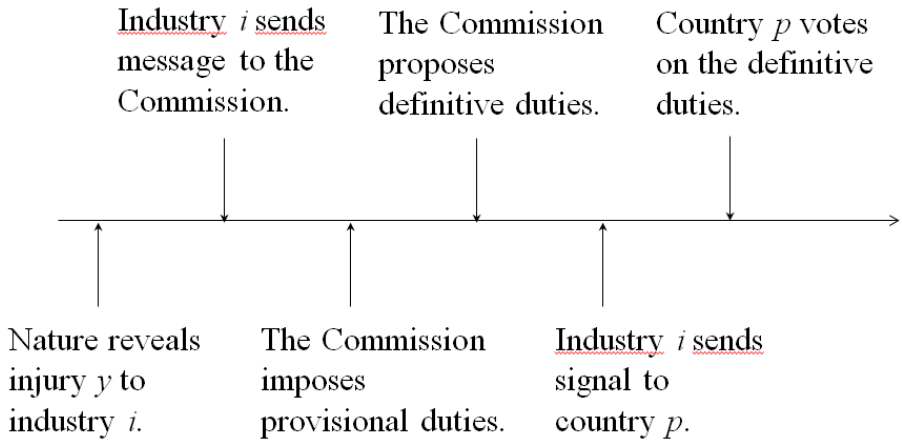
With  $u$  being the pivotal member state.

#### *The equilibrium with EP Empowerment*

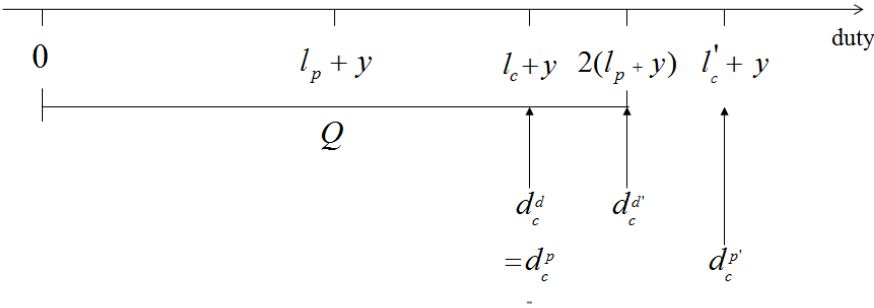
The only things that change when compared to the actual antidumping procedure are the following:

- In vote stage duties will get approved if:  $\frac{d_c^d}{2} + E(y|.) \leq \min(l_u, l_p)$
- In proposal stage the Commission  $c$  is lobbied by the industry  $i$ , because it has monopoly proposal power.

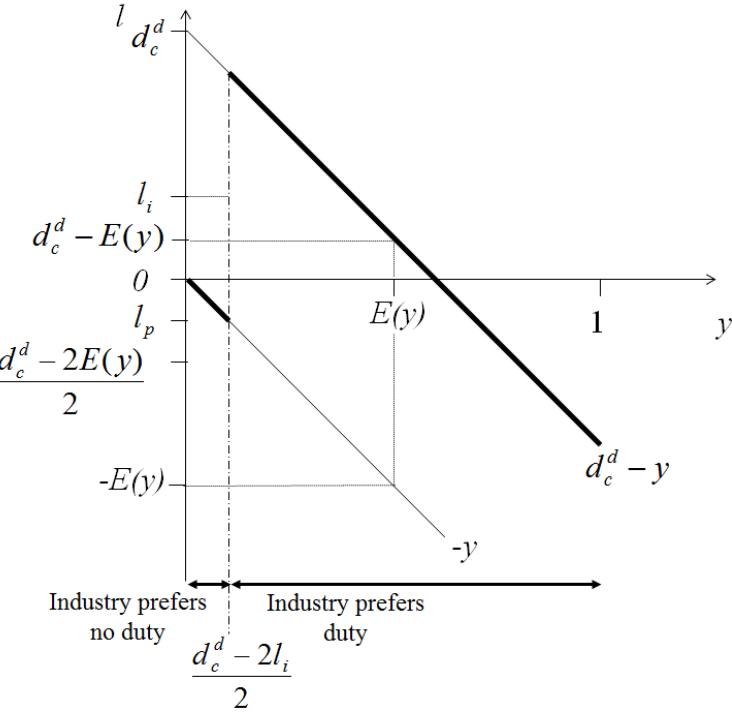
**Figure 1: The order of events in the antidumping procedure.**



**Figure 2: The equilibrium under complete information.**

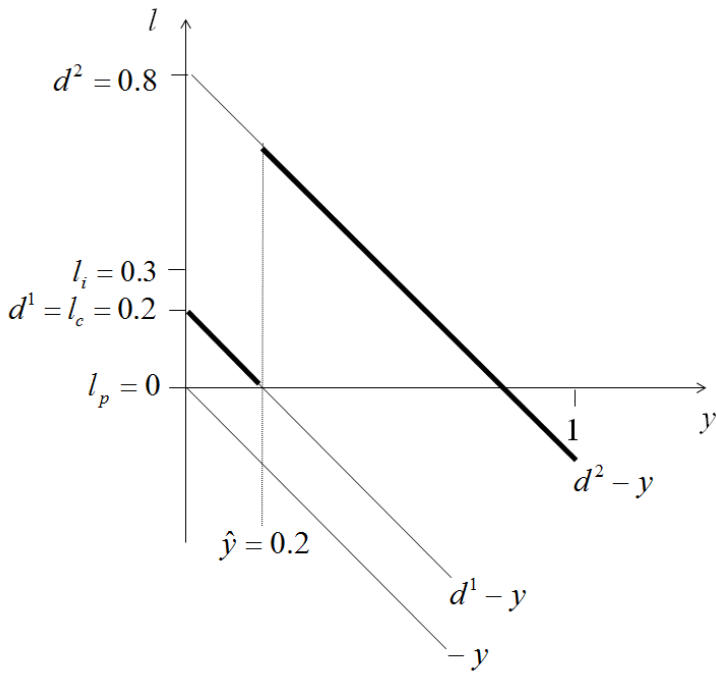


**Figure 3: Equilibrium under incomplete information**

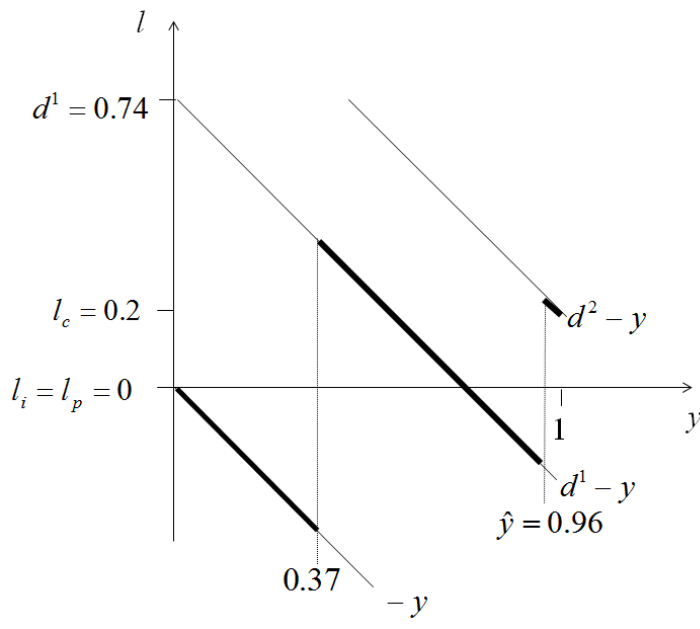




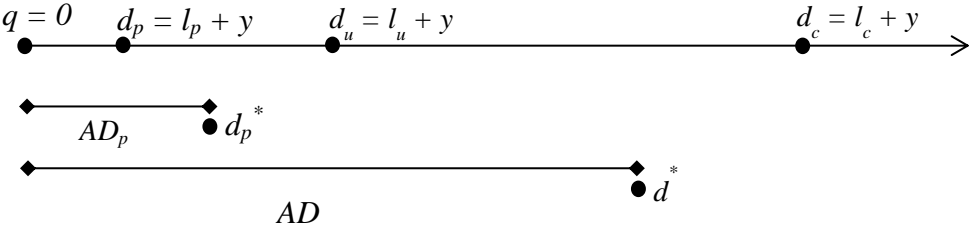
**Figure 4: Equilibrium for a protectionist industry**



**Figure 5: Equilibrium for a free-trade industry**



**Figure 6: The Procedure with EP involvement**



$q$ : Status Quo  
 $l_p$ : Ideal protection level of the EP  
 $l_u$ : Ideal protection level of the pivotal member state  
 $l_c$ : Ideal protection level of the Commission  
 $AD$ : Set of antidumping duties, that can be approved by a majority in the Council  
 $AD_p$ : Set of antidumping duties, that can be approved by a majority in the Council and by the EP  
 $d^*$ : The duties imposed in equilibrium, i.e. the policy in the set  $AD$  closest to the Commission

**Figure 7: MEPs' positions | 1 dimension**

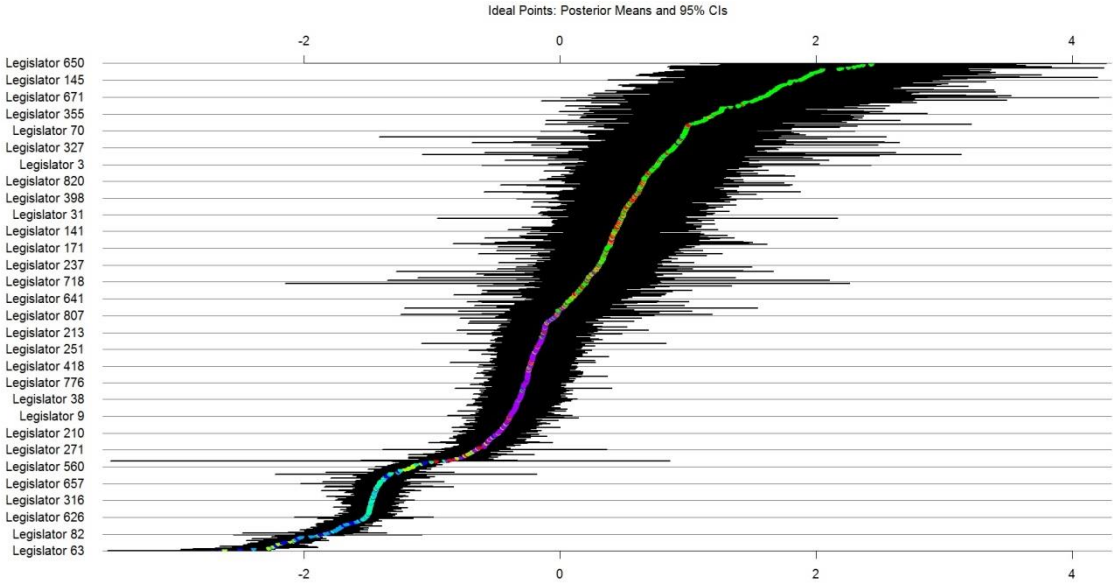
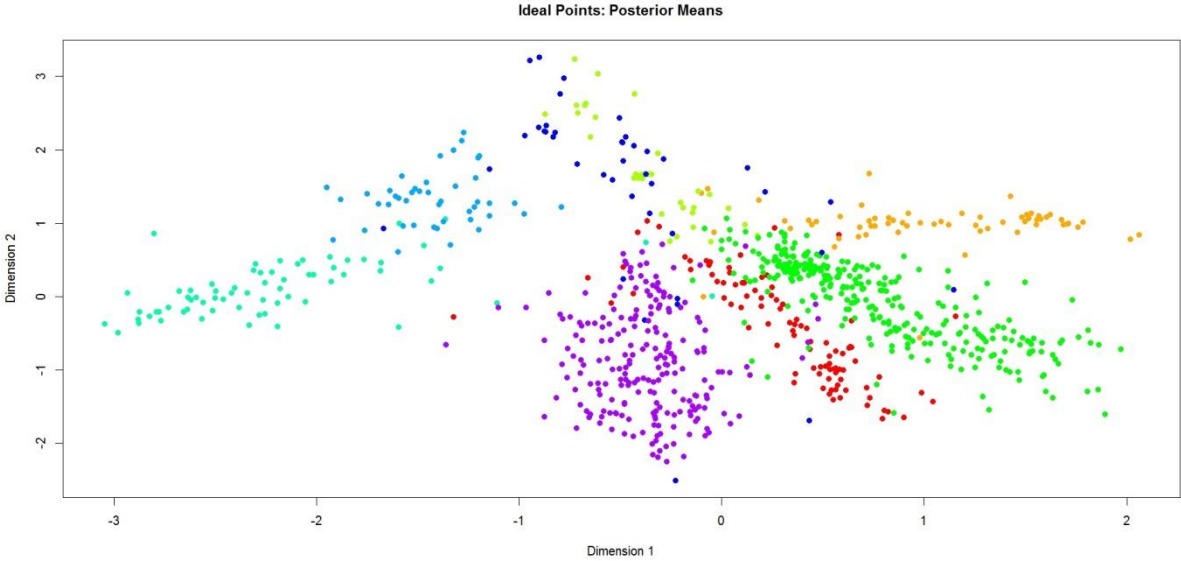
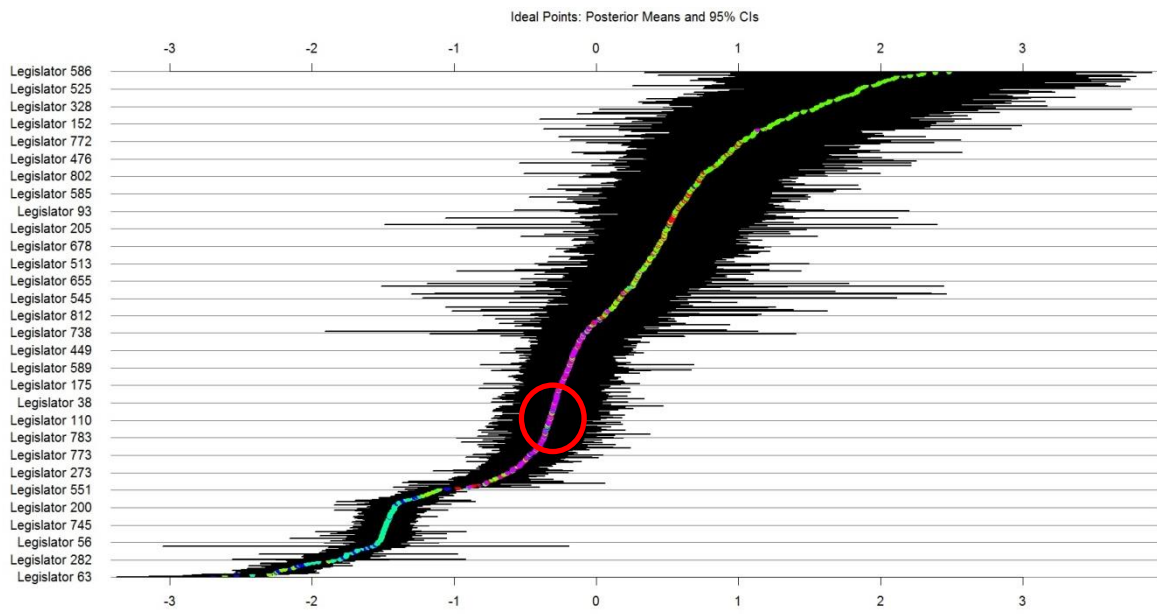


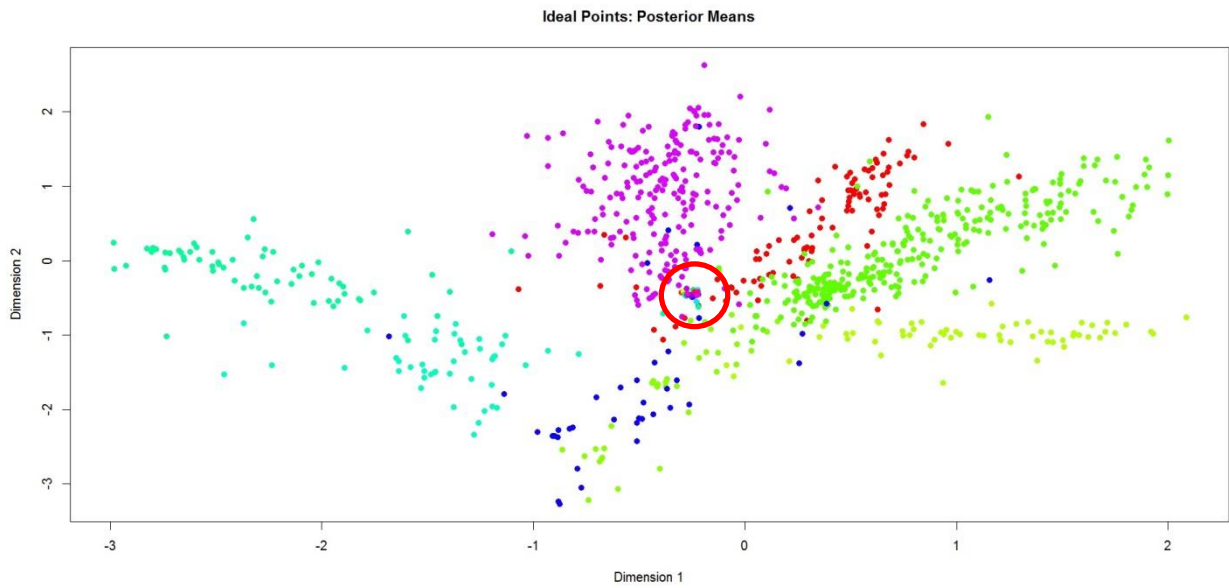
Figure 8: MEPs' positions | 2 dimensions



**Figure 9: Member States' and MEPs' positions | 1 dimension**



**Figure 10: Member States' and MEPs' positions | 2 dimensions**



<b>Year of initiation</b>	<b>Number of cases</b>
2003	7
2004	29
2005	24
2006	35
2007	9
2008	18
2009	15
2010	15
2011	17
2012	13
2013	4
<b>Total</b>	<b>186</b>

Table 1: Annual number of antidumping investigations, 2003-13.

Source: Own calculations based on data from the European Commission and Bown (2012).

<b>Country</b>	<b>Number of cases</b>
Germany	88
Spain	83
Italy	79
France	70
UK	34
Poland	33
Sweden	17
Lithuania	8
Bulgaria	9
Luxembourg	3

Table 2: Top 10 of member states based on the number of antidumping investigations they have been involved in (via companies, subsidiaries, etc.).

Source: own calculations based on data from the European Commission, Bown (2012) and the World Bank.

Note: because of missing data, we made use of a reduced sample of 164 cases. For the average of overall manufacturing value we used the period 2003-2012. These data were not available for each year for each country.

<b>Country</b>	<b>Number of cases</b>
China	74
Taiwan	10
India	9
Russian Federation	8
Thailand	8
US	8
Malaysia	7
Republic of Korea	7
Ukraine	6
Indonesia	5

Table 3: Most frequently targeted countries.

Source: own calculations based on data from the European Commission and Bown (2012).

<b>ALDE</b>	<b>At</b>	<b>Bel</b>	<b>Bul</b>	<b>Cro</b>	<b>Cyp</b>
90.06	76.6	68.09	74.47	74.47	76.60
<b>Cze</b>	<b>Den</b>	<b>ECR</b>	<b>EFD</b>	<b>EPP</b>	<b>Est</b>
74.47	72.34	86.92	69.95	95.57	74.47
<b>Fin</b>	<b>Fra</b>	<b>Ger</b>	<b>Gre</b>	<b>Greens/EFA</b>	<b>GUE-NGL</b>
74.47	72.34	72.34	72.34	NaN	74.29
<b>Hun</b>	<b>Irl</b>	<b>Ita</b>	<b>Lat</b>	<b>Lit</b>	<b>Lux</b>
74.47	70.21	72.34	72.34	74.47	72.34
<b>Mal</b>	<b>NL</b>	<b>NI</b>	<b>Pol</b>	<b>Por</b>	<b>Rom</b>
70.21	73.82	72.34	76.60	72.34	74.47
<b>S&amp;D</b>	<b>Slo</b>	<b>Spa</b>	<b>Svk</b>	<b>Swe</b>	<b>UK</b>
87.16	74.47	74.47	74.47	70.21	63.83

Table 4: One-dimensional model: Predictive capabilities in per cent.

<b>ALDE</b>	<b>At</b>	<b>Bel</b>	<b>Bul</b>	<b>Cro</b>	<b>Cyp</b>
92.10	72.34	74.47	72.34	72.34	72.34
<b>Cze</b>	<b>Den</b>	<b>ECR</b>	<b>EFD</b>	<b>EPP</b>	<b>Est</b>
72.34	72.34	94.65	70.40	94.63	72.34
<b>Fin</b>	<b>Fra</b>	<b>Ger</b>	<b>Gre</b>	<b>Greens/EFA</b>	<b>GUE-NGL</b>
72.34	72.34	74.47	72.34	NaN	84.13
<b>Hun</b>	<b>Irl</b>	<b>Ita</b>	<b>Lat</b>	<b>Lit</b>	<b>Lux</b>
74.47	70.21	72.34	72.34	70.21	72.34
<b>Mal</b>	<b>NL</b>	<b>NI</b>	<b>Pol</b>	<b>Por</b>	<b>Rom</b>
72.34	77.11	70.21	70.21	72.34	72.34
<b>S&amp;D</b>	<b>Slo</b>	<b>Spa</b>	<b>Svk</b>	<b>Swe</b>	<b>UK</b>
95.58	72.34	72.34	72.34	74.47	55.32

Table 5: Two-dimensional model: Predictive capabilities in per cent.

UK	-0.49
Belgium	-0.41
Malta	-0.39
Ireland	-0.37
Sweden	-0.37
France	-0.36
Latvia	-0.36
Denmark	-0.34
Germany	-0.34
Greece	-0.34
Italy	-0.34
Luxembourg	-0.34
Netherlands	-0.34
Portugal	-0.34
Estonia	-0.33
Bulgaria	-0.32
Czech Republic	-0.32
Lithuania	-0.32
Romania	-0.32
Slovenia	-0.32
Spain	-0.31
Croatia	-0.31
Hungary	-0.30
Slovakia	-0.30
Finland	-0.30
Cyprus	-0.29
Poland	-0.28
Austria	-0.26

Table 6: EU member states and their respective positions.

---

<sup>1</sup> The Anti-Dumping Agreement is officially known as ‘The Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade 1994’.

<sup>2</sup> When a complaint concerns multiple countries, the complaint counts for multiple cases.

<sup>3</sup> Member States involved are those with companies or branches of companies that produce the product on which the investigation focuses.

<sup>4</sup> See Crombez (1996, 1997, 2000) for spatial models of the EU’s principal legislative procedures.

<sup>5</sup> The Council is an intergovernmental body. It consists of one government minister for each of the fifteen member countries. The Commission is a supranational institution. It consists of twenty Commissioners. The Commissioners are appointed by the Council and the Parliament. See Nugent (1999) for a more detailed description of EU institutions.

<sup>6</sup> See Baron (2000) for a political and economic analysis of international trade and business-government relations.

<sup>7</sup> In what follows I refer to ‘simple majority rule’ as ‘majority rule.’

<sup>8</sup> In other words Black’s median-voter theorem applies (Black 1958).

<sup>9</sup> The move towards majority rule coincided with the most recent enlargement of the EU.

<sup>10</sup> Crombez (2002) presents a more general model of lobbying and the EU legislative process. His model builds on work by Crawford and Sobel (1982), Gilligan and Krehbiel (1987) and Austen-Smith (1993).

<sup>11</sup> Other messages can be considered as equivalent. The industry may send no message or an uninformative message. Such messages can be considered as equivalent to the message  $m_i^c = [0,1]$ .

<sup>12</sup> As country  $u$  is pivotal, we can focus on signals sent to country  $u$  and on country  $u$ ’s vote.

<sup>13</sup> Other possible signals can be considered as equivalent.

<sup>14</sup> For  $l_u < -y$ , the set  $Q$  is equal to the singleton  $\{0\}$ .

<sup>15</sup> Prior to the 1995 enlargement of the EU qualified majority was required for the imposition of definitive duties, as pointed out above. Under qualified majority rule the then twelve countries had a total of 76 votes. A qualified majority required 54 votes. If the largest countries favored duties, the votes could be obtained with as few as seven countries. If some of the largest countries opposed duties, the support of as many as ten countries could be required. Under the current system the support of eight countries is needed. Whether the enlargement and the procedural change have thus enlarged the Council’s acceptance set depends on the size of the countries supporting the duties.

<sup>16</sup> The proofs are somewhat more complicated than in Crawford and Sobel (1982), because the Commission does not necessarily obtain its ideal protection level in expectation.