Does Implicit Voting Matter? Coalitional Bargaining in EU the Legislative Process

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Abstract

This paper theorises how decision-makers in the EU legislative process reach consensual decisions and in which policy direction through a mechanism of "implicit voting". I introduce spatial model coalitional bargaining using a utility function that incorporates decision-maker considerations of the policy gains they expect to obtain for an outcome and the policy concessions they will need to give to other decision-makers so as to have this outcome accepted. The model predicts the formation of a *compact coalition* where the differences among the distances between each decision-maker position and the coalitional position are less pronounced than in competing alternative coalitions. This coalition will be able to implement this policy position as the outcome of the legislative process. The empirical evaluation of the model with DEU for 44 proposals and 111 issues of EU legislative process shows that the compact coalition offers a good prediction of how consensus in arrived at in the EU, suggesting that implicit voting explains well how EU decisional actor make decisions and the direction that this consensus takes.

Introduction

In the legislative process of the European Union, member governments and supranational institutions regularly negotiate the passage of new legislation involving policy change. Inductive accounts of the legislative process show that decision makers of the EU commonly take decisions through "implicit voting" (Hayes-Renshaw et al., 2006; Golub, 1999; 2007; Novak, 2010). Implicit voting refers to the mechanism by which decision makers participating in the process estimate the existence of an effective qualified majority coalition in negotiations preceding the final agreement, so that an actual vote may not take place and decisions are officially adopted "by consensus". The testimony of Dutch national representative Leendert Bal is illustrative in this regard:

> If an observer were to attend Council Meetings he or she would notice next to no evidence of a qualified-majority voting. It is unusual for presidencies to ask delegations to vote. The official explanation is that presidencies will seek consensus around the table and will thus avoid isolating colleagues. The expression of *noblesse oblige* is, of course, very welcome but it is only part of the explanation. Qualified-majority voting is like the sword of Damocles hanging above the negotiation table. It is in the mind of everyone. The Presidency, the Commission and delegations assess the state of the negotiation – almost permanently and automatically – in terms of whether there is a qualified majority or a blocking minority (Bal, 2004: 129).

In spite of the attested occurrence of implicit voting in the EU, there is very little research on how the mechanism operates (Naurin and Wallace, 2008: 5). Theoretical models dealing with negotiations in the EU have commonly focused on unanimous consent (Thompson et al., 2006; Schneider et al., 2010), leaving open the question of whether the "shadow of the vote" has any influence on the consensus building. This article delineates a new model of coalition formation explaining how decision makers reach legislative decisions under the implicit application of a qualified majority rule, and empirically evaluates the implications of the model across a large number of negotiations in the EU legislative process.

The model is a spatial voting game in which coalitions of decision makers with spatial policy preferences simultaneously offer proposals for a policy compromise to a sufficient number of voters who will implicitly be necessary to complete the qualified majority that constitutes a winning coalition. The model crucially assumes that the decision maker incentives to choose a policy compromise strictly depend on the balance between the *policy gains* they obtain from the coalitional compromise and the *policy concessions* they need to give to other members of the coalition in order to see this compromise accepted. If a qualified majority coalition offers a compromise for which no decision maker inside the coalition has incentives to renege on in favour of another alternative, such a compromise will be selected as the final policy to be implemented as common legislation.

Decision makers have three characteristics by which they can influence policy outcomes: their position in the policy space, their voting power, and the salience they attach to issues. The composition of a winning coalition and the content of its compromise proposal are then consequent upon a bargain reflecting the relative positions, power and salience of decision makers. According to the behavioural rationale stating that both considerations of policy gains and policy concessions intervene in the configuration of compromises, each decision maker payoff for accepting a coalitional compromise depends on a combination of these two components. A decision maker who is to make a compromise with other actors in a given coalition may consider the opportunity to switch to an alternative coalition offering a compromise closer to her ideal preference. However, if the concessions she has to make to the members of this second coalition outweigh the policy gains she obtains, in comparison to the previous coalition, the decision maker will not have incentives to switch and will accept the original compromise. The model predicts that decision makers will select the policy compromise offered by the more *compact coalition:* the winning coalition in which the differences among each of the decision makers' policy position and the coalitional compromise is less pronounced.

Analytically, the formation of compact coalitions implies that legislative outcomes will have the imprint of the ideological choice preferred by a majority of decision makers. The empirical estimation of this implication relies on a comparison between the compact coalition model and a model of unanimous bargaining for 44 proposals and 111 issues requiring qualified majority voting (QMV), obtained from Decision Making in the European Union (DEU) dataset (Thomson et al., 2006).

The article is organised as follows. In the first part, I discuss the literature on modelling EU decision making and the implications of implicit voting. Subsequently, the model is presented and a case of an EU legislative negotiation under co-decision is introduced to illustrate the reasoning of the model. The second part addresses the quantitative evaluation of the model.

Modelling decision making in the cooperative environment of the EU

Efforts to model how decisions in the EU are reached constitute now an extensive literature. The pioneering contributions on the subject conceived the decisional process as binary agenda non-cooperative games and focused on the effect that formal procedures have on decision-making outcomes (Tsebelis, 1994; Combrez, 2000; Tsebelis and Garrett, 2001; Steunenberg and Selck, 2006; Author Last Name, 2009). Procedural models introduce important insights in regard to inter-institutional dynamics and the general reform capacity of the EU. However, their non-cooperative assumptions, positing a strategic advantage of decision makers preferring the status quo, have proved ill-equipped to explain the tendency of EU decision makers to frequently reach consensual compromises (Achen, 2006b; König and Junge, 2009; Mattila and Lane, 2001; Selck, 2005). In this respect, cooperative models, allowing informal interactions among decision makers, offer a more plausible explanation of decision-making outcomes in the cooperative environment of the EU, and have provided more accurate forecasts (Thomson et al., 2006). The vast majority of cooperative models applied to the EU are bargaining models which emphasize different factors influencing consensus building, such as issue logrolling (Arregui et al. 2006), domestic constraints (Bailer and Schneider, 2006), salience (Schneider et al. 2010) or interest accommodation (Achen, 2006a; Van den Bos, 1991). In bargaining models, the formal rule of qualified majority voting does not condition the behaviour of decision makers, so that decisions are taken by unanimity. Thus, the decision-making process appears as universally inclusive, representing the interests of all decision makers.

Such a perspective crucially changes if the effect of the decision rule is integrated in informal negotiations. Implicit voting restricts the opportunities decision makers have under unanimity principles to stubbornly claim a major representation of their particular interests. Instead, decision makers have incentives to form a majority coalition with policy-minded legislators. As a consequence, implicit voting is likely to generate compromises that reflect a more ideological direction towards one side of the political spectrum than unanimous consent. The informal process by which decision makers take a decision by applying majority voting procedures had been extensively studied by spatial models of coalition formation in the tradition of cooperative game theory (Bräuninger, 2007; Grofman, 1982; Mckelvey et al., 1978; Owen, 1995; Schofield, 1995, 2008; Sened, 1996). In context of the EU legislative process, however, there has been very little theoretical research on how the mechanism operates. To date, the coalition formation perspective has an isolated representative in the cooperative approach of Boekhoorn et al. (2006). Building on Axelrod's conflict of interest theory (Axelrod, 1970), this work assumes that players have incentives to form a winning coalition with minimal conflict. Upon this behavioural assumption for collective utility, their models predict stable outcomes implemented by coalitions that have less internal conflict.

The coalition model introduced here differs from the work of Boekhoorn et al. in that it introduces a behavioral assumption directly on the individual utility of players, so that no player will to join a winning coalition if there is another winning coalition providing more individual policy rewards. The focus on the individual rationality provides solid microfoundations for explaining incentives of decision makers to cooperate in order to obtain majority policies closer to their own preference and posits a coalitional rationale distinct from the tendency of seeking "equitable" centripetal focal points (see Fiorina and Plott, 1978) or the willingness to avoid internal conflict within a coalition (Boekhoorn et al., 2006).

The model

Structure of the decision-making game

We set up a committee simple voting game (see Machover and Felshental, 1998; Mckelvey et al., 1978; Owen, 1995) in order to characterize how decision makers take decisions under the implicit application of a majority rule. Let N be the set of players, who are decision makers attempting to influence the outcome of legislative negotiations. Let $C \subseteq N$ the *coalitions* that players can form, and v a mapping that assigns *payoffs* to each coalition. In the simple game, only the *winning coalition, W,* gathering at least a qualified majority of the weighed votes of the committee can assure the acceptance of a final policy proposal and impose it to the whole assembly of the players, so that $W = \left\{ C \subseteq N \middle| |C| > \frac{3}{4} \right\}$, where $|C|$ denotes the number of weighted votes in a coalition C. The final outcome takes the form in which the winning coalition is assigned the total value of the game (that is, the total payoffs of the game which its members are to divide among themselves), while losing coalitions get nothing, so that the solution of the game is defined by the *characteristic function* that specifies that

$W = \{C|v(C) = 1\}$. The characteristic function thus states that any player can only secure a payoff from the game by being member of the winning coalition. Even if a player considers the status quo as a valuable outcome, the characteristic function tells us that the player can only secure this outcome if she obtains it through the formation of a winning coalition. Otherwise she will end up with no payoff, or equivalently, with a utility loss worse than the status quo, such as the damaging of institutional relationships[1]. Finally, we need to spell out that a simple game is *proper* if for every coalition C $\subseteq N$, exactly one C, $N - C$ is winning. That is, only one contemporary subset of players may form a winning coalition, so that there can be no ties.

We develop this scheme further by integrating empirically-oriented features of a legislative process. Suppose that conflict among decision-makers occurs over issue alternatives concerning how a policy is to be defined, as when they have to choose between adopting more or less stringent regulatory measures for environmental policy, or higher or lower harmonisation standards of safety in transport policy. We further note that most proposals submitted for legislation are multi-dimensional, so that decision-makers are to decide simultaneously on two or more issues to adopt the final policy. In particular, let us adopt a spatial representation. Let $M = \{1, 2, 3 \; ... \; m\}$ be the set of all

[1]Specifically, let u_i be the utility that any player can secure by acting alone, then $u_i \leq w_i$ for all $i \in C$ and $w \in v(C)$

issues represented in a m-dimensional Euclidean metric space R^m. Let *A* be the real number segment describing the set of alternative outcomes the players confront among the larger set *M*, so that $A \in R^m$ is the convex hull representing the Pareto set of the game. Let any player have an ideal position or *bliss point* in the space, denoted as x_i.

I define the utility function of a player as incorporating the *policy gains* the player is to obtain from an outcome and the *policy concessions* that the player will need to give other players in order to get this outcome accepted. In evaluating alternative outcomes, any player will choose the outcome for which the combination of policy gains and policy concessions will offer her a greater utility. To capture this behavioural rationale, I thus define the preference of a player for an outcome as the sum of the player's Euclidean metric distance between the ideal position of the player and the policy outcome *and* the distance between each of the other players' position and the outcome, divided by the number of partners integrating the assembly or group in which the player participates. Formally, let *U* be a utility function representing the preference profile of all players on *A*. Then, for any actor $i \in N$ and any outcome $\theta \in A$, there is a point $x_i \in R^m$ such that

$$U_i(\theta) = h\left(\frac{\sum_{j \in N} \left\| \theta - x_i \right\| + \left\| \theta - x_j \right\|}{\sum_{j \in N}} \right) \qquad (1)$$

where h is a decreasing function on the outcome and $i \neq j$. The first term in the numerator of the main expression equals the "policy gains" that player *i* estimates from the policy outcome, these gains being larger the less the Euclidian distance of the ideal position of the player to the outcome. The second term in the numerator equals the "policy concessions" that each of the other players, *j,* will claim in exchange for implementing this outcome. The assumption that a player will be willing to give policy concessions follows naturally, in the context of a voting game, from the fact that only players who are represented in the winning coalition get any payoff from the game. If a player does not give other players sufficient concessions, the derived increase of disutility for these other players will make them choose a different partner, and a fortiori, a different outcome. Players who are distant from the policy outcome will be more "expensive" to the rest of the players and will need to give more concessions. It is important to note that each player having a different position in the policy space, the policy concessions they will claim will also differ. A player thus considers the gains and costs for every other player separately and then aggregates these quantities to define her total utility from the coalition. Note also that when two players have the same position, this will also be reflected in the outcome. As a consequence, players with the same position are treated here as a single player, so that no concessions among them are required.

Finally, the division by the total number of partners in the group corrects for the effect that assemblies or groups of players with more members will automatically give less utility to the player, as the player will need to give more concessions, even if other players are close in the policy space.

Coalitional bargaining: the compact coalition solution

In the voting spatial game just defined, players have to select a policy outcome θ over all possible alternatives that will be supported by a winning coalition. How is this policy outcome to be found? Following Mckelvey et al. (1978) conception of competition among coalitions, I represent the selection of an outcome as a process in which potential coalitions compete in offering proposals for a policy compromise to individual players so as to gain the sufficient support to form a winning coalition that will enforce the policy.

In order to define these compromise proposals, we first need to know more about the players. Following standard assumptions of cooperative bargaining models (Achen, 2006a; Arregui et al., 2006; Bueno de Mesquita and Stokman, 1994; Van den Bos, 1991), I define a player *i* as holding three characteristics by which the player can exert influence over the content of a policy, and these characteristics are common knowledge, so that decision making occurs under complete information. First, as already noted, a player has a *policy position*, x_i, in a m-dimensional policy space.

Other things being equal, players can exert more influence in negotiations when their position is proximate to that of other players. Conversely, a player holding extreme preferences will be less influential. Secondly, a player holds a certain amount of *voting power* or *capabilities, c,* which makes the player more or less decisive in the adoption of a decision by the whole assembly. Finally, a player attaches a certain degree of *salience* to issues. Salience captures how much the policy space means to the player, and hence determines how much effort the player is willing to spend on negotiations. In this view, salience represents an actualisation of decisiveness (see Bueno de Mesquita, 1994). Thus, a player can be described by a vector of three values, (x_i, c_i, s_i), always in a Euclidian space with metric properties.[2]

When players form a coalition with other players, they will bargain the composition of the policy position that the coalition is to adopt as a collective entity. Given the characteristics of the players, the bargaining process will derive a *policy position of the coalition,* which is defined as the vector consisting of the weighed average of the positions of all players, where the weights are their voting power and saliency. The specific way in which the bargaining is conducted could, of course, be different. Any existing cooperative bargaining model could be used to obtain a policy

[2] In the set of issues $M = \{1, 2, 3 \ldots m\}$, where $m \geq 1$, a player's position on an issue, and the influence it can exert on the issue, may differ from that taken on another issue. Such variations will be reflected in the overall influence the player exerts on a given policy $\theta \in A$.

position of the coalition without modifying the logical consistency of the model. The weighted average of positions or "gravity centre" has, however, well-established support in the literature of coalition formation (see Boekhoorn et al., 2006; Grofman, 1982; Schofield, 1995, 2008). The specification of a bargaining process for defining coalition positions implies that any coalition position will be a feasible outcome, $\theta \in A$, and guarantees that the Pareto set A will be finite.

We can now define a *compromise proposal* as a policy position of a coalition which can gather the sufficient number of votes to be winning. More precisely:

Definition 1 *A compromise proposal* of $C \subseteq N$ is an ordered pair $(\theta; C)$ such that $\theta \in v(C)$ (Mckelvey et al. 1978: 606).

The question which arises is whether there is a compromise proposal that satisfies these conditions, so that it can be selected as the final policy. In principle, any policy point from the set of alternatives A that can be implemented by a winning coalition will be preferred by the players of this coalition and will constitute viable compromise proposal. As long as two players who are pivotal in winning coalitions have diverging preferences for the proposals of these coalitions, no policy will dominate the others and the social choice will be cyclical. It follows that a compromise proposal can be selected as a stable outcome only if it is *undominated* by any other policy, given the application of a decision rule. The set of undominated policies in the Pareto set A is known as *the core*.

Traditional theories of coalition formation commonly face the prediction problem of an empty core with more than one policy dimension (Mckelvey, 1976; Owen, 1995). Under a supermajority rule, the existence of a core can be guaranteed for two dimensions (Schofield et al., 1988). However, the size of the core may still be extremely large in these situations. I will show, however, that the behavioural assumption introducing motivations of policy gains and concessions into the preference profile of players induces a strict reduction of undominated points with any voting rule and, under conditions of asymmetry of player positions and weights, allows us to find unique policy choice. I start presenting these results by first introducing a general definitions derived from Mckelvey et al. (1978: 606) stating that only the players that are in the intersection of coalitions, "pivotal players", are relevant for the choice of a policy compromise:

Definition 2 For any two policy compromise proposals $(\theta;C)$ and $(\theta';C')$, $(\theta;C)$ is *undominated* by $(\theta';C')$ if it is the not case that $u(\theta') >_i u(\theta)$ for all $i \in C \cap C'$.

To see how this relation of dominance applies to the present model, we only need to compare the utility functions of players for the potential winning coalitions in a voting game. The player motivations for policy gains and policy concessions when joining a coalition reveal that undominated coalitions will be the coalitions in which the differences among each of the members' policy position and the coalitional compromise will be less pronounced than in any other coalitions. I will refer to these coalitions as *compact coalitions*[3]. The following result restates this finding:

Proposition 1 *For any two proposals* $(\theta;C)$ *and* $(\theta';C')$, $(\theta;C)$ *is undominated by* $(\theta';C')$ *if, given the preference profile U, it is not the case that* C' *is more compact than C, for all* $i \in C \cap C'$ (see proof in Appendix).

From this proposition it follows that the existence of a set of compact coalitions in a simple game guarantees stable outcomes. We now demonstrate that such a set always exists if a game is proper and finite.

In a proper voting game, such as the one concerning the EU legislative process, the odd number of votes allocated to players assures that only a contemporary subset of winning coalitions will form. Moreover, when the number of players is finite, and each coalition makes only one proposal, the set of feasible outcomes will be finite. Under these two conditions, the formation of a unique set of winning coalitions more compact

[3] The word "compact" is unrelated to and should not be confused with the notion of "compactness" and "compact set" which is used to refer to closed and bounded sets which contain an infinite number of choices.

than any other coalition outside this set is assured. It is also clear that there will always be an ordering of compact coalitions, so that it is impossible that compact coalitions "mutually dominate" each other. Therefore, all points in the set will be undominated and the set will not be empty.

Proposition 2 *In any finite and proper spatial voting game, there is always a set of compromise proposals offered by compact coalitions which dominate any other point outside the set, and which are undominated by any other point in the set.* Let $\kappa^{com} \subseteq A$ denote the set of compromise proposals offered by compact coalitions, then:

$$\kappa^{com} = \left\{ (\theta;C) \in A \middle| \text{for no } (\theta';C') \in A \text{ it is the case that } u(\theta') >_i u(\theta) \text{ for all } i \in v(C) \right\} \quad (2)$$

$$\kappa^{com} \neq \varnothing \quad (3)$$

The expression (2) is a standard definition of the core. It differs only in the nonstandard definition of winning compromise proposals, as induced by the utility functions of players based on combined policy gains and concessions. The expression (3) simply restates that the compact-coalition core is not empty.

The existence of a non-empty compact-coalition set constitutes the general solution of the game. As in other core related solutions, there is no insistence that the set κ^{com} contains only one element (see Owen, 1995). Alternatives in the set may be only weakly preferred to other alternatives in the set by all the pivotal actors. Yet, the cases where we find several stable outcomes are special cases in which there is perfect symmetry in the distribution of player positions and player weights in the policy space. Such conditions of symmetry are rare (Schofield, 2008; Sened, 1996). In most cases we will have only one element in the set. More precisely, under conditions of asymmetry in the player positions and strengths, a unique coalition more compact than the rest will be found.

Proposition 3 *In any finite and proper spatial voting game, under conditions of asymmetry in the distribution of player positions and player weights, the set of compromise proposals offered by compact coalitions contains a unique point which strictly dominates any other point outside the set* (see proof in Appendix).

The results just presented allow us to predict a set of stable policy outcomes that will be supported by a qualified majority of decision makers in committees such as the EU legislature. Based on the behavioural rationale that decision makers consider both policy gains and policy concessions in their choice for a common policy, decision makers will select a policy implemented by a coalition that is more compact than the rest. The compact coalition constitutes a stable outcome because the combination of gains and concessions in this coalition turns out to be more rewarding for any pivotal member in the coalition, as compared to other alternatives. While symmetric conditions produce several compact coalitions between which players are indifferent, asymmetric conditions bring together like-minded legislators in a unique compact coalition. A single compact coalition is thus expected to form in policy-making situations in which decision makers compete to bring about a policy change in a determined ideological direction.

Coalition formation in the EU legislative process

The model is illustrated for the case concerning the negotiation for the adoption of the EU directive 2002/7/EC by co-decision, relating to maximum authorised dimensions and weights for road vehicles circulating within the Community. The data for this case is part of a larger dataset of Decision Making in the European Union (DEU), which collects information about legislative proposals for the Europe of 15 countries. More details about the structure of these data are explained in the next section, dedicated to the quantitative evaluation of the model. The interest now is to show the reasoning of the coalitional model.

The first information we need to apply the model refers to the institutional structure of the voting game, that is, the quota of votes needed to form a winning coalition that can implement the decision. In order to represent the EU voting game under co-decision (Art.169 TEU, amended by the Art 294 of the Treaty of Lisbon as "ordinary legislative procedure"), I adopt the DEU modelling strategy for cooperative games. This strategy "endogenizes" the procedural power of EU institutions by always including them as members of the winning coalition (see Thomson and Stokman, 2006: 49-50). For the specific co-decision procedure, we only consider the members of the Council and the EP as decisive players. Although the European Commission introduces the legislative proposal in the co-decision procedure, its exclusion as a decisive actor is justified because the capacity of the Commission to strategically vary its proposal is limited to the first stages of the procedure[4].

These features are operationalized more precisely with the use of the normalised Banzhaf Power Index, which measures the relative capacity of decision makers to turn a coalition from winning to losing (see Felsenthal and Machover, 1998). In the rule structure of the voting game for the EU-15 regime, the governments in the Council need to gather 62 votes out of 87 to form a winning coalition, and, under co-decision, the EP is always required to complete the winning coalition. This is equivalent to saying that a winning coalition can form when the Council has gathered 0.69 of the total voting

[4] In the larger data set, I also consider proposals under the *consultation procedure*, where the Commission has the possibility to change its proposal at any stage, while the EP has only a consultative function. The form of the voting game remains as indicated. However, I reverse the roles of the Commission and the EP, so that in consultation procedure, it is the Commission which is a decisive player and has a voting power score of 0.31, while the EP is a dummy player.

power and the EP 0.31. Translating the voting power scores into a voting rule or quota, the voting game for the EU co-decision procedure then takes the following form[5]:

[62+25; 25, 10, 10, 10, 10, 8, 5, 5, 5, 5, 4, 4, 3, 3, 3, 2]

The data concerning the factors by which decision makers can influence the negotiation are their voting power, $c_{i,}$, the initial declaration of preferences for the issues under discussion, x_i, and the importance they attach to the issues, s_i. Table 1 presents the information about these values for the proposal on the directive 2000/7/EC. The voting power of each decision maker, $c_{i,}$, is calculated with the normalised Banzhaf Power Index. The voting power is proportional to the number of votes of each decision maker. Thus, big member states, with 10 votes, have voting power scores of 0.08, while a small state like Luxemburg has a 0.014 score. As noted, the EP always holds a voting power score of 0.31.

The two other values, x_i and s_i, are derived from empirical information, and are hence specific to the issues under negotiation. During the discussions of the proposal for

[5] When some member states are indifferent to issues under discussion and do not participate in the process of its resolution, the quota will be readjusted. The proposal illustrated here offers an example: Ireland, holding 3 votes, is indifferent regarding the first issue, so that the Council has 84 active votes. Then, a winning coalition will need 60 votes of the Council and 24 of the supranational institution.

the directive 2000/7/EC, decision makers declared discrepancies concerning two issues: the maximum length authorised to vehicles and whether the type of manoeuvrability of vehicles should correspond to the criteria laid down by the UN Economic Commission for Europe (UNECE) or by the EU directive 97/27/EC. The positions of decision makers and the importance they attach to these two issues are presented as a continuum for each issue of the proposal, representing the gradation between two extremes of a controversy, issue-by-issue. The SQ is located at the position 0, and the position 100 corresponds to the position of the decision maker favouring the most radical policy change in regard to the SQ.

It should be noted the location of the status quo is not relevant to deduce which coalition will form in the cooperative voting game, as players will determinately prefer the policy that affords them more rewards in terms of gains and concessions, no matter how close or far this policy is from the status quo. However, the reference to the SQ as the point "0" in the policy space allows us to infer the degree of policy change generated by the legislative process (see Achen, 2006b; Konig and Junge, 2009).

With this information we can distinguish three groups of decision makers which are to be involved in the process of coalition formation. The first group of member governments is formed by Germany, Greece, France, Italy, Austria and Portugal.

(Table 1 about here)

This group prefers to set a maximum of 12 meters for two-axle buses, and to apply the criteria of manoeuvrability set by the UNECE. Its position is at (100, 0). A second group, formed by Belgium, Spain, Luxemburg, Finland and Sweden also prefers the criteria of manoeuvrability set by the UNECE. However, on the first issue they hold a position for permitting a maximum length of buses of 13.5 meters, at point (50, 0). The third group consists of the EP, Denmark and the UK. The EP holds a position at (50, 100), preferring the 13.5 meters maximum of buses' length but also preferring to adopt the less stringent criteria of manoeuvrability specified in the EU directive of 1997. Denmark holds the same position as the EP. However, the position of the EP is specifically relevant for the process of coalition formation because the supranational institution is always needed to form a winning coalition. The UK adopts an intermediate position at (50, 70), preferring the 13.5 meters length maximum, but not agreeing to any of the proposed criteria of manoeuvrability. The position of the UK is closer to the EP than to the position of any other government, except Denmark. Finally, the Netherlands happens to be isolated in these legislative negotiations, its position situated at the SQ, at the point (0, 0).

In regard to the salience values, for this proposal, the differences among decision maker salience scores only appear to be determinant in the case of the EP. As the EP does not attach much salience to the second issue of manoeuvrability, its influence in the legislative bargaining will be directed towards the first issue.

The positions of decision makers are represented in the two-dimensional graph of Figure 1.[6] Since the Netherlands is not likely to lure other decision makers to form a winning coalition, the legislative bargaining is to be restricted to the triangle-shaped area of the figure. Two potential winning coalitions appear as candidates to enter a competition for proposals that would ultimately gather support for implementing a policy. A first coalition would be formed by governments of the two first groups mentioned. In particular, the group of Germany and other big states seems well positioned to offer a proposal in its favour, since this group gathers alone 44 votes. They would need to offer a bargaining compromise first to the EP and, secondly, to a number of governments of the second group sufficient enough so as to obtain the 18 votes needed to complete a winning coalition. The second competing coalition would be led by the EP, which is a decisive player and holds a distant position with respect to the members of the other groups. In this view, the EP may attempt to form a coalition that includes Denmark and the UK, as these two governments are much closer to its ideal point. As we will see, once the coalitional bargaining unfolds, it will be apparent that the EP has no incentives to form this coalition.

[6] For simplicity of exposition I have not represented the power and salience of decision makers in the graph. Note, however, that these weights are reflected in the two alternative outcomes.

(Figure 1 about here)

The model predicts that the *compact coalition* will be the first. This coalition offers the following compromise proposal: *(71.03, 24.60; Germany, Greece, France, Italy, Austria, Portugal, Belgium, Spain, Luxemburg, Finland, EP).* No pivotal decision maker in the coalition has incentives to renege on this compromise. As a consequence, the coalition is dominant.

Figure 1 represents the outcome of the compact coalition at point θ. To see why this point is dominant, recall that, according to the preference function of decision makers, the combination of policy gains they obtain for a compromise and the policy concessions they would need to offer to the members of the coalition is to provide a better deal for them than any other alternative. In this instance, we may naively presume that the representatives of the EP would be tempted to look for another more favourable deal. The EP, in reality, could offer a compromise proposal at *(65.43, 33. 66; EP, Denmark, UK, Germany France, Italy, Belgium, Spain, Luxemburg, Sweden*). This is point θ' in the figure, which is closer to the position of the EP. However, the pivotal members who would be needed in both coalitions would endure more utility losses in this second coalition by integrating Denmark and the UK. Indeed, Denmark and the UK are more isolated than any other government in the legislative bargaining, and drive the outcome farther away from the majority of governments. As a consequence, their inclusion in a coalition makes this coalition less compact, in comparison to the dominant coalition. For the EP this means that the majority of governments in the non-compact coalition will claim more policy concessions, and the EP will need to pay a substantial portion of them. In the comparison among alternative proposals, the combination of total gains and concessions of the compact coalition offers a maximising choice to the EP.

The exact measures are shown in Table 2. The EP's utility from the compact coalition is 3.86, while the alternative coalition gives a utility of 5.57 units of combined distance of gains and concessions[7].

(Table 2 about here)

Leaving the compact coalition will entail a utility loss for the EP, as it would require more expensive adjustments between policy gains and concessions. Therefore, the supranational institution has no incentives to change its choice for the compact coalition. Because this is also the case for all the pivotal decision makers in the compact coalition, this coalition will be dominant.

[7] Recall that the utility function is a decreasing function on the outcome. Smaller numbers mean smaller distances of policy gains and concessions combined, and hence, greater utility.

Empirical accuracy of the compact coalition model: the relevance of implicit voting for EU policy change

This section quantitatively evaluates the performance of the compact coalition model for 44 EU legislative proposals, containing 111 issues, which were decided under QMV. The objective of this evaluation is to assess whether implicit voting, and its coalitional dynamics, is a relevant mechanism by which decision makers reach consensual decisions in the EU.

The research design employed here consists of comparing the performance of the *compact coalition model* to that of the *compromise bargaining model*, which posits that preferences of all decision makers are integrated into the decision, so that consensus implies unanimous consent (Achen, 2006b; Thomson, 2011; Van den Bos, 1991). Attempts to falsify the impact of implicit voting from a simple comparison of the two models, however, involve certain difficulties. Part of the problem is that coalition formation and generalised bargaining may produce observational equivalence. It may be that the outcome selected by a qualified majority looks exactly the same as the outcome selected by the totality of actors in the whole assembly. To overcome this problem, I differentiate categories of outcomes that are expected to result from coalition formation. As conceived in the compact coalition model, coalition formation reflects a tendency of decision makers to seek reinforcement of like-minded partners in order to bring the outcome towards the ideological direction they prefer. In contrast, when decisions are taken by unanimous consent, we should expect that ideological factors play a minor role and that decision makers are willing to take into account the preferences of all legislators. In this view, I will tease out the influence of implicit voting on consensus building by addressing the extent to which coalitional predictions tend to correspond to observed outcomes reflecting a choice from one side of the ideological spectrum.

In the operationalization of the comparison between coalitional and unanimous mechanisms of consensus, the compromise model has been chosen among other possible bargaining models because it uses the same "parameters" as the compact coalition model. It also weights the positions of the players, where the weights are their voting power and salience, but it does so for *all* the players of the committee. Since the compromise model appeals to the same inputs as the compact coalition model, it allows us to obtain a direct comparison between implicit voting and unanimous consent.[8] In addition, the compromise model performs better than most of the alternative bargaining

[8] One difference between the two models, however, is the coding of indifferent actors. Proponents of the compromise model give indifferent actors a position halfway between the proposal of the Commission and the reference point. I have maintained their original coding in running their model here.

models (see Achen, 2006b), providing us with a strong test for the compact coalition model to satisfy.

Information on the legislative decisions has been obtained from the data set of the Decision-making in the European Union (DEU) research project (Thomson et al., 2006). Through expert interviews, the DEU program collects data on positions, salience and outcomes for 66 legislative proposals and 162 issues, decided by the co-decision and consultation procedures and introduced by the Commission between 1999 and 2000. Here only the 44 proposals decided under QMV are examined, as these are the only proposals where implicit voting is relevant. All proposals selected dealt with issues that presented controversy among the decision makers and which aroused public attention, so that very technical and routine proposals were excluded from the sample. Information about the actor positions and saliencies was collected after the proposals were issued by the Commission and before the adoption of the legislative act. Yet, the actual outcomes are also included in the dataset. As we saw in the case illustrating the model, this information is presented in issue continua where the SQ is located at the position 0, and the position 100 corresponds to the most distant position in regard to the SQ. In this manner, estimation about the degree of policy change is possible. The more distant outcomes are from the SQ, the more policy change the legislative process generates.

The evaluation of the models uses the standard testing procedure for deterministic models consisting of comparing the distance existing between the predicted outcomes and the observed outcomes (see Bueno de Mesquita and Stokman, 1994; Thomson, 2011; Thomson et al., 2006; Schneider et al., 2010). More precisely, the testing measure employed is the Mean Absolute Error (MAE), that is, the average size of the forecasting error. The accuracy of predictions is then estimated by the degree of the forecasting error they produce. As it is well known, deterministic models are not amenable to probabilistic statistical evaluation because they predict equilibrium points which are assumed to occur with certainty (see Achen, 2006b; Junge, 2010; Morton, 1999; Signorino, 1999). Alternative tests to estimate the quality of the model, such as normalised predictions (Bueno de Mesquita and Stokman, 1994) or hit rates (Achen, 2006b; Schneider et al. 2010), could have been used. However, given the structure of the data generation process of deterministic models, the discrepancies between observed and predicted outcomes provide a sensible measure of forecasting accuracy (Morton, 1999; Achen, 2006b) and serve well the purpose of comparing implicit voting and unanimous consent.

The first test I conduct evaluates the performance of the compact coalition model and the compromise model for all issues and by legislative procedure. We want here to obtain a general assessment of the success of the models. For this purpose, the median voter has been used as a null model. The median provides atheoretical predictions, and therefore, serves as a baseline to evaluate the quality of the two theoretical models. Table 3 reports the predictions of the models. Both models perform better than the median. The compromise model fares slightly better for all issues under QMV, with a MAE of 25.56 against the 26.19 of the compact coalition model. The differences, however, are not very big and for the most relevant procedure of the EU, the co-decision procedure, the compact coalition model performs better, with a MAE of 26.84 against the 27.28 of the compromise model. Overall, coalition formation and generalised bargaining tend to offer very similar results in this comprehensive test. We can confirm that consensus is generally preferred by EU decision makers but not whether a majority of decision makers will be enough to make a consensual decision.

(Table 3 about here)

Despite this similarity of predictions, the association between the forecasts of the two models in a linear transformation turns out to be lower than we may have presumed, with a Pearson correlation of 0.58. This indicates that the different causal mechanisms the two models posit have also a reflection on the data.

The second test performed seeks to evaluate more directly the impact of implicit voting by focusing on its causal mechanism. For this purpose, I differentiate outcomes reflecting ideological choices that are expected to result from coalition formation. Given the structure of our data, ideological choices are represented as outcomes pointing to more or less pronounced policy change. I thus perform a MAE test for different levels of policy change, ranging from minimum to pronounced policy change. I expect that, if ideological factors are influential, decision makers will tend to build majoritarian coalitions, which in turn will be reflected on outcomes that fall at a determined level of policy change. By contrast, I expect that if ideological factors have a minor effect, decision makers will prefer to form the grand coalition, and this will be reflected by a lesser impact of coalition formation on the level of policy change. Naturally, our evaluation of implicit voting in this design needs to be posited in relative terms. If the compact coalition model performs better for a determined level of policy change *relative to* the compromise bargaining model, then policy change will be driven *more* by implicit voting and *less* by unanimous consent. If, on the contrary, this is not the case, we should conclude that implicit voting has no influence on consensus building and that decision makers are inclined to adopt all-inclusive compromises by unanimity.

Table 4 shows the MAE for three levels of policy change. Observed outcomes are coded as promoting low, moderate or pronounced policy change according to their location in an issue continuum bounded between 0 and 100. We can see that the prediction of the compact coalition model is more uniformly distributed than the prediction of the compromise model, as estimated by the error the models yield for the three levels of policy change.

(Table 4 about here)

This result suggests that implicit voting does have an influence on the way consensus is taken, and, ultimately, on the ideological direction of this consensus. The fact that both minimal policy change and pronounced policy change are better predicted by the compact coalition model informs us that decision makers attempt to align themselves with other like-minded partners in order to influence the policy outcome they prefer, and that they are willing to make policy concessions to those partners so as to increase the chances that a policy close to this outcome will be selected by a majority.

Yet the compromise model fares remarkably better when decisions are moderate. Given our testing measure, the fact that the mean-oriented compromise model is favoured in situations of medium levels of policy change is not surprising (see Bueno de Mesquita, 2004). However, the differences in prediction are wide enough to prompt some informed conclusions. The “grand coalition” appears thus a superior mechanism when conditions for consensus reflect the existence of a centric voter. In this case, excluding any decision maker from the compromise appears to be either unsuitable or unnecessary. Decision makers prefer to disregard minor ideological divergences and take everyone on board in the final decision. The compact coalition model also predicts well in moderate decisions, but not as well as the compromise model. In this view, the final interpretation derived from the evidence is that when controversy is less acute, decision makers have a tendency to act unanimously. However, when issues are more ideologically polarised, implicit voting appears to be a more determinant mechanism in the configuration of consensual decisions.

Conclusion

Theoretical explanations and empirical assessments of how consensual agreements in the EU are reached have commonly focused on unanimous consent. However, the question of whether consensus may be reached under the "Damocles sword" of a qualified majority has received little rigorous theoretical treatment. The article addresses this shortcoming with a model of coalition formation positing that decision makers select a majoritarian compromise by pondering the policy gains they are to obtain from a compromise and the policy concessions they need to give in order to see this outcome supported by a qualified majority. The result of the legislative bargaining in which decision makers evaluate different choice alternatives is the formation of a compact coalition which is to implement the final policy.

At the theoretical level, the compact coalition model yields the finding of a stable solution for finite and proper spatial voting games which usually have an empty core. The proposed solution thus relates to other classic core solutions of well-established cooperative theories, and suggests a refinement to these solutions. While the article does not mean to suggest that the decision maker motivations for exchanging policy gains and concessions in order to reach an agreement with a like-minded majority exist for every political situation, it is natural enough to assume that they do exist in cooperative decision making environments where the penalisation for not reaching an agreement is high. The EU legislative process is commonly perceived as such a cooperative environment. At the empirical level, the quantitative evaluation of the model yields mixed results. The evidence suggests that in the EU legislative process ideological majorities vote implicitly in order to drive consensus towards minimum or pronounced levels of policy change. However, when majorities have moderate policy choices, they are inclined to take everybody on board and unanimous consent remains a powerful mechanism.

Appendix

Proposition 1. Proof. We begin by recalling the structure of the social choice game. Let $G = (N, v, U)$ be a finite spatial voting game and let $C \subseteq N$ be any coalition in *G*.

Let $A = \{\theta_1,...,\theta_n\}$ be subset of feasible outcomes in *G,* so that $v(C) = A$ if *C* is winning and $v(C) = 0$ if *C* is losing. Recall that *U* is the utility function specifying the preference profiles of players on *A*. From *U*, define the distance between the realisation of player *i'* preference, x_i, and a given outcome, $\theta \in A$, as follows:

$$d_\theta \equiv \left(\frac{\sum_{j \in N} \|\theta - x_i\| + \|\theta - x_j\|}{\sum_{j \in N}} \right) \tag{4}$$

where x_j denotes the preference of any player *j* in the a assembly, so that $j \neq i$.

Applying this definition to any two policy proposals in *G* implemented by potential winning coalitions, $(\theta; C)$ and $(\theta'; C')$, assume the following inequality among coalitional outcomes :

$$d_{\theta'} \leq d_\theta \tag{5}$$

Substituting, we obtain:

$$\left(\frac{\sum_{j \in C'} \|\theta' - x_i\| + \|\theta' - x_j\|}{\sum_{j \in C'}} \right) \leq \left(\frac{\sum_{j \in C} \|\theta - x_i\| + \|\theta - x_j\|}{\sum_{j \in C}} \right) \tag{6}$$

From the inequalities (5) and (6), it follows that the difference among the distances between each member in coalition C and the outcome of their coalition, θ, is less pronounced than the difference among the distances between the members of coalition C' and the outcome of their coalition, θ'. We say that C is more compact than C'. Since $d_{\theta'} \leq d_{\theta}$ implies $u(\theta) \geq_i u(\theta')$, it follows that C is undominated by C'.□

Proposition 2. Proof. Let *G=(N, v, U)* be finite and proper and let $\kappa^{com} \subseteq A$ be the set of ordered pairs offered by compact coalitions:

$$\kappa^{com} = \left\{ (\theta; C) \in A \middle| \text{for no } (\theta'; C') \in A \text{ it is the case that } u(\theta') >_i u(\theta) \text{ for all } i \in v(C) \right\} \quad (2)$$

Then, $\kappa^{com} \neq \varnothing$ iff the expression (2) holds true for any finite and proper simple game, that is, iff the points in the set κ^{com} are undominated in *G*. In order to prove that this is the case, we need to show that a weak preference profile U on κ^{com} is reflexive, complete and acyclic, for all $i \in v(C)$:

Reflexivity: For all $(\theta; C) \in \kappa^{com}$, since U is reflexive, then $u(\theta) \geq_i u(\theta)$.

Completeness: For all $(\theta;C)$ and $(\theta';C') \in \kappa^{com}$, since G is proper, $C \cap C' \neq \varnothing$. Let $i \in C \cap C'$. Since U is complete, then either $u(\theta) \geq_i u(\theta')$ or $u(\theta) \leq_i u(\theta')$.

Acyclicity: Let $(\theta'';C'')$, $(\theta';C')$, $(\theta;C) \in \kappa^{com}$. Then, for all $i \in C'' \cap C'$, $u(\theta'') \geq_i u(\theta')$, and for all $i \in C' \cap C$, $u(\theta') \geq_i u(\theta)$. By completeness we know that if $u(\theta'') \geq_i u(\theta')$, then $\neg(\theta'') \leq_i u(\theta')$, and hence, $u(\theta'') \geq_i u(\theta)$. Since G is proper, for all $i \in C'' \cap C \neq \varnothing$. Therefore, $u(\theta'') >_i u(\theta') \geq_i u(\theta)$, and hence, $d_{\theta''} \leq d_{\theta'} \leq d_{\theta}$. Otherwise (since U is complete) there exist $(\theta''';C''') \in \kappa^{com} \backslash \{ (\theta'';C''), (\theta';C'), (\theta;C) \}$ such that, for all $i \in C''' \cap C''$, $u(\theta''') \geq_i u(\theta'')$. By acyclicity it must be that $u(\theta''') \geq_i u(\theta')$ and $u(\theta''') \geq_i u(\theta)$ as well. Since G is proper, for all $i \in C''' \cap C' \neq \varnothing$ and for all $i \in C''' \cap C \neq \varnothing$ as well. Therefore, $u(\theta''') \geq_i u(\theta'') \geq_i u(\theta') \geq_i u(\theta)$, and hence, $d_{\theta'''} \leq d_{\theta''} \leq d_{\theta'} \leq d_{\theta}$. Because the number of outcomes in A is finite (and hence the number of outcomes in κ^{com} is also finite) we can continue this logic to conclude that there must exist an alternative weakly preferred to all other alternatives in κ^{com}. □

Proposition 3. Proof. The proof of the Proposition 3 on uniqueness of the compact coalition set is the same as the proof of Proposition 2 for a *strict preference profile U* on κ^{com}, for all $i \in v(C)$. □

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Tables and Figures

Table 1 Positions, saliencies and voting power in the proposal for the directive 2000/7/EC[a]

	x_i		s_i		$c_{i,}$
Decisionmarkers	issue 1	issue 2	issue 1	issue 2	
Commission	100	100	80	40	0
Belgium	50	0	40	50	0.037
Denmark	50	100	70	70	0.024
Germany	100	0	90	90	0.08
Greece	100	0	60	80	0.037
Spain	50	0	90	90	0.066
France	100	0	70	80	0.08
Ireland		0	50	50	0.024
Italy	100	0	70	80	0.08
Luxemburg	50	0	40	40	0.014
Netherlands	0	0	90	80	0.037
Austria	100	0	70	70	0.031
Portugal	100	0	70	70	0.037
Finland	50	0	90	80	0.024
Sweden	50	0	90	80	0.031
UK	50	70	50	70	0.08
EP	50	100	80	40	0.31

[a] *Issue 1.* Maximum length authorised to vehicles =15m (2 axles), 50=13.5m (2 axles), 100=12m (2 axles)
Issue 2. Type of manoeuvrability of vehicles: 0= UNECE criteria of manoeuvrability UNECE, 70=no agreement with any proposed criteria, 100= Directive 97/27/EC criteria of manoeuvrability.

Table 2 Competing coalitions for the adoption of directive 2000/7/EC[ab]

Coalitions	**Coalition Compromise**	**Members**	**Member's utility from each coalition partner (gains and concessions)**				**Sum of member's utility from each coalition partner**	**Member's utility from Coalition**
Compact Coalition			GER, GR FR, ITA AUS, POR	BEL, ESP LUX, FIN	EP			
	(71.03, 24.6)							
		GER	0.00	70.37	116.28		186.55	**4.34**
		GR	0.00	70.37	116.28		186.55	**4.34**
		FR	0.00	70.37	116.28		186.55	**4.34**
		ITA	0.00	70.37	116.28		186.55	**4.34**
		AUS	0.00	70.37	116.28		186.55	**4.34**
		POR	0.00	70.37	116.28		186.55	**4.34**
		BEL	70.37	0.00	110.65		181.02	**2.62**
		ESP	70.37	0.00	110.65		181.02	**2.62**
		LUX	70.37	0.00	110.65		181.02	**2.62**
		FIN	70.37	0.00	110.65		181.02	**2.62**
		EP	116.28	110.65	0.00		226.93	**3.86**
Non-compact Coalition			GER, FR ITA	BEL, ESP LUX, SWE	DK EP	UK		
	(65.43, 33.66)							
		GER	0.00	85.29	116.36	87.73	289.38	5.07
		FR	0.00	85.29	116.36	87.73	289.38	5.07
		ITA	0.00	85.29	116.36	87.73	289.38	5.07
		BEL	85.29	0.00	105.13	76.50	266.92	3.92
		ESP	85.29	0.00	105.13	76.50	266.92	3.92
		LUX	85.29	0.00	105.13	76.50	266.92	3.92
		SWE	85.29	0.00	105.13	76.50	266.92	3.92
		DK	116.36	105.13	0.00	107.58	329.08	5.57
		EP	116.36	105.13	0.00	107.58	329.08	5.57
		UK	87.73	76.50	107.58	0.00	271.81	3.53

[a] The member's *utility from the coalition* is the sum of utilities from joining each of the coalition partners divided by the total votes of the partners in the coalition.
[b] See Figure 1 for abbreviations.

Table 3 Mean Absolute Error of models for all decisions under Co-decision and Consultation Procedures of EU legislative process

Model	*COD QMV (n=56)*	*CNS QMV (n=55)*	*All issues QMV (n=111)*
Median voter model	30. 64	30.62	30.63
Compromise model	27.28	23.84	25.56
Compact coalition model	26.84	25.54	26.19

Table 4 Mean Absolute Error of Compact Coalition Model and Compromise Model for different levels of policy change of EU legislative output

Model	*Minimal policy change Outcome range: 0-30 (n=27)*	*Moderate policy change Outcome range: 30-60 (n=36)*	*Pronounced policy change Outcome range : 60-30 (n=48)*
compromise model	42.92	13.84	25.1
Compact coalition model	36.3	23.73	22.3

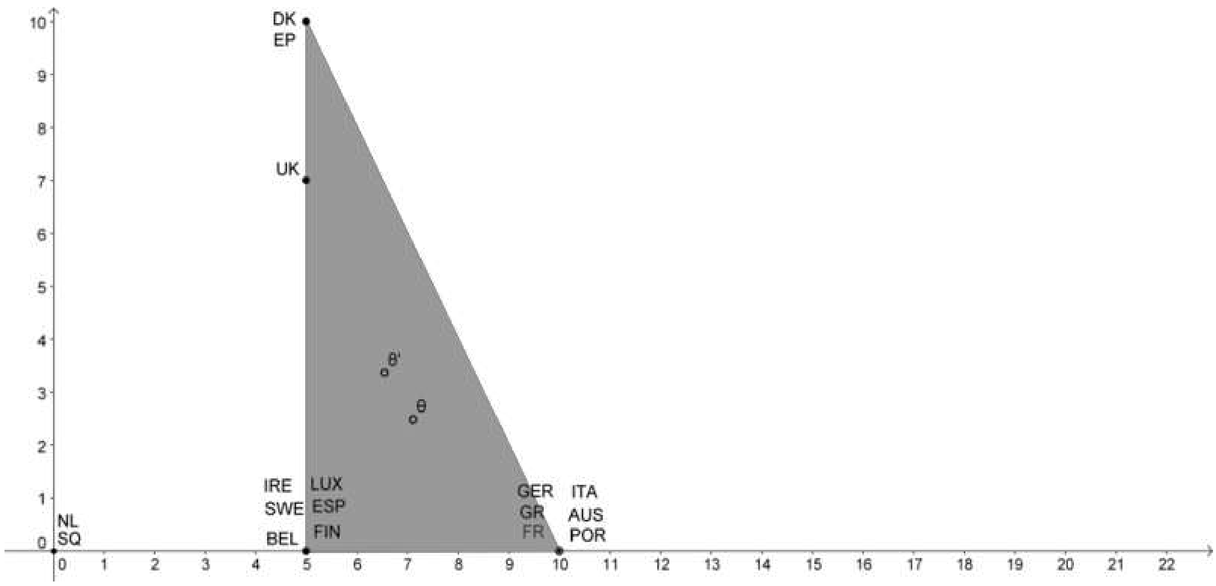

Figure 1 Spatial model of coalitional bargaining in the negotiations of the directive 2000/7/EC. The horizontal dimension represents the first issue of the negotiations, dealing with the maximum length authorised to vehicles. The vertical dimension concerns the second issue on the criteria to determine the type of manoeuvrability of vehicles (AUS: Austria, BEL: Belgium, DK: Denmark, EP: European Parliament, ESP: Spain, FIN: Finland, FR: France, GER: Germany, GR: Greece, IRE: Ireland, ITA: Italy, LUX: Luxemburg, NL: Netherlands, POR: Portugal, SWE: Sweden, UK: United Kingdom)