Bargaining Power in the European Union

An Evaluation of Competing Game-Theoretic Models

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Keywords:
European Union; Legislative Decision-Making; Council of Ministers; Spatial Models; Voting Power Indices; Nash Bargaining Solution; Prediction.

Authors´ note: Research support by the Deutsche Forschungsgemeinschaft, the European Commission under the Marie Curie Fellowship Programme and the Nederlandse Organisatie voor Wetenschappelijke Onderzoek is gratefully acknowledged. We received valuable assistance throughout the research process from Stefanie Börst, Helen Callaghan, Han Dorussen, Dietrich Drüner, James D. Fearon, Nikolaus Hautsch, Stefan Klotz, Andrew Moravcsik, and Nadine Warmuth. We would also like to thank our colleagues within the Decision Making in the European Union (DEU) research group, especially Chris Achen, Ad van Deemen, Madeleine Hösli, Thomas König, Torsten Selck, Bernard Steunenberg, Robert Thomson and Mika Widgrén. The accompanying GAUSS routines, a technical appendix and an illustrative case study are available at http://www.uni-konstanz.de/FuF/Verwiss/GSchneider/downloads/daten.htm.

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Abstract

This paper evaluates, by drawing on Barry's distinction between 'power' and 'luck', the predictive accuracy of competing bargaining models. We explore whether models that take various facets of political power into account predict legislative outcomes more precisely than purely preference-based models like the Nash Bargaining solution (NBS). Our empirical examination compares how well different formal models predict the outcome of 66 legislative decisions made within the European Union (EU). A model that considers the saliency actors attach to a contested issue performs best among all the models under examination. Although resource-based models provide less accurate forecasts at the average, they offer relatively precise point predictions. The analysis also shows that domestic constraints are not a particularly important bargaining resource in legislative decision making.

Introduction

As every veteran politician knows, decision making offers its ups and downs. In the European Union, the governments of both large and small member states regularly live through frustration and triumph in their attempts to move the final decision making outcome into the direction they prefer. Even as tiny a country as Luxembourg can experience these concomitant sensations. While the Grand Duchy was largely able to block wide-ranging attempts to harmonize capital taxation across the EU member states until now, it could not prevent the encroaching co-ordination in the domain of indirect taxes (Genschel, 2002).

The sharp divergences that these two cases offer raise a theoretically important question: why can a member state more or less single-handedly stall a key decision in one domain, but is incapable from keeping the gate closed in other highly sensitive matters such as VAT? Models of EU decision making do not yet offer firm guidance as to whether bargaining power, the saliency of an issue or rather luck explain such divergences. It is of little comfort that this analytical problem is not limited to integration studies. There is for instance no consensus in the international relations literature on how bargaining power affects the division of the spoils among contending negotiators sight. As Zartman and Rubin (2000, p. 4) write, the dispute would be settled "if popular discussions did not leave them surrounded by misleading commonplaces and folk wisdom and if the various disciplinary attempts to provide answers were not incomplete and contradictory."

Although the decision making processes within the European Union (EU) have received increased scholarly attention within the past few years, we are still far away from possessing a convincing set of systematic and empirically-grounded

explanations (Thomson et al., 2006). Admittedly, bargaining approaches have been successfully applied to explain negotiations within the European Union. Yet, most of these studies only address the intergovernmental meetings of the European Council (e.g. Schneider and Cederman, 1994; Schneider, 1994; Hug and König, 2002; König and Finke 2007). We are particularly far away from understanding what kind of bargaining resource will matter in decision making processes within the Council of Ministers, which is arguably the most important legislative actor of the organization (Bailer, 2004, 2006). Some studies have tried to figure out what kind of model explains bargaining in the European legislative process most accurately (e.g. Bueno de Mesquita and Stokman, 1994; Thomson et al., 2006). Yet, these comparative model evaluations do not explicitly address the question of whether or not bargaining power makes a difference in EU legislation. Procedural models dominate the attempts to explain legislative decision making. Their proponents try to assess whether agenda setting, veto or gate keeping rights empower an institutional actor. The models that have been developed so far still disagree, however, over the power that the various institutional reforms attributed to the European Parliament and other actors (Selck and Steunenberg, 2004; Steunenberg and Selck, 2006). Procedural models are, moreover, not the best choice to evaluate the role of power because they predict outcomes less accurately than bargaining models. The empirical record is equally dismal for voting power analyses that include information on the preferences of the actors (Thomson and Stokman, 2006).

This article therefore limits its model evaluation to bargaining approaches. It systematically compares multilateral negotiation models that take different facets of power into account. Our analysis resorts to the canonical bargaining model, the

multi-actor Nash Bargaining Solution (NBS), to explain which causal mechanism is most useful in explaining and predicting the legislative processes of the European Union. Note that our analysis compares the predictive accuracy of competing bargaining models across different decision making cases; one of us has also analysed extensively the relative bargaining success of individual actors, showing for instance that small member states gain disproportionately in agricultural policy making (Bailer, 2004, 2006).

Our empirical assessment relies on the Decision Making in the European Union (DEU) data set that includes detailed information on 66 legislative proposals of the European Union (Thomson and Stokman, 2006; Stokman and Thomson, 2004). DEU relies on expert interviews and gives information on the positions of the actors on a specific issue and the time preference they have with regard to the resolution of a contentious question. We have developed GAUSS routines to calculate the model predictions.

Power, Luck and the Analysis of European Union Decision Making

Bargaining Power: Power is, in the Weberian tradition to which we subscribe in this article, seen as the ability to overcome the resistance of others. This abstract definition begs the question what kind of power an actor has to possess to move the outcome of a collective decision making process towards her favourite position. In an influential article, Barry (1980, p. 338) argued that both decisiveness and luck are crucial in this respect. However, the former factor does not necessarily result from diverging capabilities of the negotiators. Already von Clausewitz had warned in the 1830s that a power asymmetry does not necessarily translate into a bargaining

advantage for the more resourceful actor. To regard the superiority in numbers 'as a necessary condition of victory would be a complete misconception…' (quoted in Leonard 1967, p. 114).

Von Clausewitz's implicit qualification that the relationship between power and bargaining success is possibly not linear has been lost for many decades. Throughout the 20th century international relations scholars discussed in an either-or-fashion whether a preponderance of power or rather resource symmetry favours an actor at the bargaining table. Hirschman (1980 [1945]), Knorr (1977) and Knight (1994), to name a few authors, advanced the argument that bargaining success is attributed to an asymmetry in resources. As Hirschman wrote (1980 [1945], p. 45), "superior bargaining power enables one monopolist … to increase his gain at the expense of that of his partner". Referring to the debate on "economic interdependence", Wagner (1988, p. 462) conversely showed that asymmetries do not easily translate into bargaining advantages: "…asymmetrical economic interdependence does not imply that one bargainer will be able to exercise political influence over another."

Schelling (1960) and Putnam (1988) have gone a step further and shown that the supposedly weak negotiator also possesses a bargaining advantage in some situations. The so-called Schelling conjecture, which paved the way for the two level game-metaphoric Putnam (1988) introduced two decades later, boils down to the expectation that constrained (and therefore 'weak') negotiators can make more credible claims than unconstrained ('strong') negotiators. This thesis has found considerable support in analyses of intergovernmental negotiation processes within the EU (e.g. (Schneider and Cederman, 1994, Hug and König, 2002). Yet, several studies have qualified the Schelling conjecture and shown that not even asymmetric

information necessarily helps a constrained negotiator (e.g. Iida, 1993; Schneider and Cederman, 1994, Schneider, 1994; see also Milner, 1997; Pahre, 2006).

Nash models: The controversy over the empirical importance of the Schelling conjecture demonstrates that the focus on different facets of power might explain the disagreement between the two competing schools of thought (e.g. Bailer and Schneider, 2006, Milner, 1997). Although formal bargaining theory has not solved this debate completely, it has at least helped to uncover the different mechanisms that link power to bargaining success.

We use the classic contribution of John Nash (1950) to bargaining theory, the Nash Bargaining Solution (NBS), as a starting point in our attempt to evaluate different power-based negotiation models. This axiomatic model allows us to study negotiations in which actors make offers simultaneously. It calculates unique equilibrium predictions simply based on information about the preferences of the actors and their minimum expectations, the so-called disagreement points. At this benchmark, negotiations break down and no actor receives a surplus. One attractive feature of the NBS is that it can be more easily extended to multilateral bargaining than other bargaining solutions (Roth, 1979; Thomson and Lensberg, 1989).

Obviously, preference-based explanations beg Barry's (1980a;b) query of whether or not luck rather than power accounts for the different bargaining success of the actors. Within the literature on EU decision making, this problem especially begets the procedural model as they typically do not consider the number of votes a member state can muster in the Council of Ministers (e.g. Selck and Steunenberg, 2004). Although applications of this approach might predict tiny member states like

Malta or Luxembourg to be pivotal in a particular situation, these actors might just be lucky to be situated in the decisive position. In Barry's view, these actors are only powerful if they can move the outcome as a result of *both* preferences and capabilities.

The other extreme modelling approach stems from the voting power tradition which tries to assess since the 1970s the impact that different vote shares of the member states have on the negotiations within the Council of Ministers (e.g. Johnston, 1977). A myriad of voting power indices show that the relationship between votes and the ability to influence a decision making process is not linear. In some cases, a gain in the number of votes translates into a loss of influence, as already Johnston (1977) has shown.

Ex ante measures of power like the Shapley-Shubik or the Banzhaf indices provide useful information about the effects of constitutional changes on the internal power distribution of an organisation. They are, however, less well-suited to deal with policy decisions because actors are likely to have at least some tacit knowledge on the issues and the preference profiles. In a series of articles, Garrett and Tsebelis (e.g. 1996) recalled Axelrod's (1970) insight that votes cannot be the only determinant of power. In order to influence a decision making process, an actor has to take a pivotal position. This is only possible if its preference is not too extreme. Standard voting power indices do, however, not consider how preferences interact with the number of votes in determining the outcome of decision making processes; they consider every coalition to be equally likely.[1] Pajala and Widgrén (2004) and Napel and Widgrén (2004) have as a reaction to this limitation recently tried to develop preference-based voting power indices. Braham and Holler (2005) reject

these attempts, claiming that the analysis of power and preferences may not be confounded. They even go as far as proposing a 'theorem of the measurement of power' according to which a valid power measure must exclude references to the preferences of the actors.

If we take this objection seriously, it would be impossible to analyse the impact of power in a bargaining situation which is characterized by conflicting preferences of the actors about the division of the spoils. We believe against this agnostic backdrop that the comparative study of structurally similar negotiations allows us to attribute the difference between the final outcome and the bargaining position at least to some extent to the power of the agents. The measurement problem would, in other words, only persist if we were measuring the strategic position of the actors. We rather attempt to show whether or not the addition of power variables improves the predictive accuracy of the models that use the sincere negotiation position as baseline information.

The analytical problem that Barry (1980a; b) raised and that Braham and Holler (2005) formalized in the context of a debate on EU decision making is at any rate not that grave in the present application. It is for instance highly unlikely that the luck of an actor persists across a large set of decision making situations as examined in this article. Furthermore, most models that we test are, in line with Barry´s original recommendation, based on combinations of capabilities and preferences.

As indicated, the Nash Bargaining Solution (NBS) just relies on preference information in its simplest form. Technically speaking, this baseline model predicts that the players will collectively choose the unique solution in the non-empty

bargaining space Θ that maximizes the product of the individual utility differences between the actors´ disagreement values Q and an outcome O. This amounts to the following multilateral maximization problem:

$$\max_{O \in \Theta} \prod_{a=1}^{n} \left(u_a(O) - u_a(Q)\right) \quad (1)$$

where the subscript *a* stands for actors.

Although the NBS has been criticized throughout the past decades, Binmore (1998) defends it forcefully. One especially attractive feature of the NBS is that it coincides with the other groundbreaking approach to negotiation theory, the Ståhl-Rubinstein sequential bargaining model, when the time span between the different bargaining rounds approaches zero (Binmore et al., 1986). Unlike the NBS, the Ståhl-Rubinstein model allows one to understand bargaining processes in which actors alternate in making offers and counteroffers (Rubinstein, 1982). The bargaining continues in this model until one side accepts the offer from the other one.

We will use variations of the NBS model to analyse legislative decision making in the European Union. Note that the philosophy of the bargaining models is partly in contrast to real life negotiations within the European Union. To start with, decisions that are made under qualified majority voting can lead to losses of an actor. Yet, Nash (and, to some extent, Ståhl-Rubinstein) have conceived bargaining as a process that prohibits such pareto-inefficient outcomes; the models we examine are thus ideally suited to address the notion that a "consensus norm" and thus the avoidance of majoritarian decisions dominates interactions in the Council of Ministers (Heisenberg 2005, but see also Schneider, 2008).

The classical bargaining problem boils down to the question of how actors divide a joint gain. However, legislative actors frequently compare the utility of an outcome to the reference point and not only to their disagreement point. It is theoretically also possible to include information about this point in the calculation of the NBS, as we have done in (Bailer and Schneider, 2005). Yet, to keep our models in spirit with the original NBS model, we have opted for another modeling strategy in this article.[2] The disagreement point accordingly measures the utility an actor could reach by chance, assuming that each actor has the same likelihood to be lucky. This minimizes the possibility that an actor loses rather than gains as a consequence of a bargaining process (Schneiter et al. 2007). [3]

In his path-breaking original study, Nash (1950) did not address the question of how a bargaining outcome might change as a consequence of possible power asymmetries among the actors. He was, however, concerned about how power might affect negotiations; the "threat game" (Nash, 1953) can be seen as an attempt to reconcile his cooperative bargaining model with the theory of non-cooperative games that he developed in the meantime (Nash, 1951). Yet, Schelling (1960, p. 125, italics in original; see also Binmore, 1998) rejects this form of threat because it leaves the party issuing a threat always in the better position, rendering the commitment unconditional and leaving it open why a threat should be issued at all. 'The "threat" tactic of J.F. Nash… differs from the threat discussed here, in that the threatener does not demand, on pain of mutual damage, a *particular* outcome but only *some* outcome in the efficient range; that is, he shifts the zero point corresponding to "no agreement".'

As the remark of Nash on the importance of bargaining skills suggests, power considerations can, however, enter the analysis if we assume that the skills of the actors diverge. In the NBS model, power can influence the division of the spoils in three forms: through the manipulation of the disagreement point of the actors, through different resource endowments, and through the saliency actors attach to the issues under consideration. All of these concepts stand for different strands in the bargaining literature. We believe that the disagreement over whether or not different resource allocation influence the location of the bargaining outcome are largely due to a confusion over which of the three causal mechanisms is at work in a bargaining situation.[4]

Constraints: As already mentioned, Schelling (1960) and Putnam (1988) have put forward the idea that a credible commitment to a bargaining constraint helps a negotiator. Key testing grounds for the Schelling conjecture have been the bargaining processes within the European Union. An intimate interrelationship between international and domestic concerns characterizes these negotiations. This makes it highly likely that governments play, to use Putnam's (1988) wording, a 'two-level game' and try to exploit domestic opposition against an international treaty strategically.

Schneider and Cederman (1994), Schneider (1994), Bräuninger et al. (2001), Hug and König (2002) and Slapin (2006) examine along this line how real or feigned constraints affect the negotiation outcome in the purely intergovernmental context of European Council deliberations. The threat of the constrained government typically boils down to the hint that a principal back home, be it the electorate, the parliament

or the party of the chief negotiator, would refuse to ratify an agreement that is too far away from its own ideal point. The empirical evidence collected so far supports the hypothesis that negotiators with limited discretion due to domestic opposition are more successful than governments that do not face the resistance from their ratifying principal (e.g. Hug and König, 2002, König and Finke, 2007).[5]

We assume that the domestic constraints which a government has to face can be operationalised with the position of parliamentary actors. The literature on EU legislative decision making disagrees over the extent to which legislatures are able to influence the bargaining behavior of their governments at this level. Martin (2000, p. 168) distinguishes three mechanisms through which the commitment to a particular bargaining position becomes more credible. In her view, the early involvement of the legislature in the negotiations, a high degree of accountability for the government in European affairs, and transparent decision making make a state more powerful in the deliberations within the Council of Ministers.

However, her analysis might exaggerate the importance of constraints. In Europe, the preferences of the parliament and the government often coincide because the executive will mostly form out of the majority of parliament members. We agree with Pahre (1997, p. 148) that domestic constraints *may* only matter if the scrutinizing committee also includes members of the opposition parties. Our examination accordingly explores whether governments that face a powerful EU affairs committee back home are more successful than unconstrained governments. The literature on the Schelling conjecture and the two-level games metaphor suggest that bargaining models that take this form of power into account should provide better forecasts than models without such constraints. In the context of the NBS,

such a commitment coincides with a dislocation of the disagreement point (Bailer and Schneider, 2006). In a bilateral situation, a small difference in the constraints is sufficient to turn the own ideal point into the outcome of the bargaining process. This is, however, no longer the case in a multilateral situation where the distribution of preferences and constraints lead to windfall profits for some actors.

Capabilities: The capabilities explanation according to which a preponderance of power translates into bargaining success arguably enjoys the richest tradition in the study of negotiations. Although we know far less than the prominence of this explanatory tradition promises, it would equally not be fair to say that we are completely agnostic. The formal literature in International Relations has for instance convincingly established that capabilities are a pre-condition for any successful attempt by a defender to deter an attacker (e.g. Zagare and Kilgour, 2000). Yet, the credibility of a threat does not grow linearly with the size of the power resources (Schneider, 2005).

We will integrate the importance of capabilities into the bargaining model by evaluating the accuracy of the asymmetric Nash Bargaining Solution (Nash, 1953). The capability stock of the EU is denoted C, and the capabilities of an individual actor amount to c_a. The asymmetric version of the NBS weighs the negotiators´ utility difference between the outcome O and the disagreement value Q with the exponent c_a which transforms the collective maximisation problem into the following expression:

$$\max_{O \in \Theta} \prod_{a=1}^{n} \left(u_a(O) - u_a(Q)\right)^{c_a} \qquad (2)$$

where $\sum_{a=i}^{n} c_a = C$. To account for the influence of capabilities on bargaining is similar to measuring the impact of different attitudes towards risk on bargaining (Kihlstrom, Roth and Schmeidler, 1981). We thus expect that powerful actors can allow themselves to be risk-taking, while marginal negotiators will be rather risk-averse.

Saliency: International relations scholars and applied bargaining theorists contend that the saliency that an actor attaches to a negotiation is an important bargaining resource. Keohane and Nye (1977) in their classic treatise on economic interdependence contend that countries that are highly interested in a negotiation topic are forced to make larger concessions. In an application of this model, Moravcsik and Vachudova (2003, p. 49) see a similar logic behind EU membership negotiations. In their view, applicant states conceded to most of the demands from the EU "because the basic benefit offered to them is of such great value". This hypothesis is similar to the standard interpretation of the Ståhl-Rubinstein model. Rubinstein and Osborne (1990, p. 52) write in this vein "when a player becomes less patient, his negotiated share of the pie decreases". In addition, if negotiators bargain over various issues simultaneously, varying salience attributed to the negotiation topics allows actors to link the issues. Coleman's (1966 a, b) used this intuition to build a social welfare function that extends the logic of the NBS through the inclusion of the intensity with which actors want a deal on a topic.

The saliency model that we test also considers salience to be a weighting factor; it largely builds on one of the extensions of the Ståhl-Rubinstein model to a multi-actor setting. Chae and Yang (1994) conceive of multilateral negotiations as a

succession of bilateral bargains that players exit if they are satisfied with their share. The authors prove that in equilibrium the 'first proposer' i receives n-times as much of the cake as the single player j, where δ is each player's individual discount factor:

$$n_{ij} = \frac{(1-\delta_j)}{(1-\delta_i)\delta_j} \quad (3)$$

Knowing the first-proposer advantage calculated by formula (3) and each actor's likelihood of becoming the first-proposer, we can determine the share each actor obtains from the 'cake' S_a[6]. Subsequently, we assume that the likelihood of becoming the first proposer corresponds to its voting power. The major difference between the idea of a "cake" on the one hand and legislative bargaining models on the other hand is the fact that the latter can include elements of a zero-sum game: Moving the outcome one unit in one direction means benefits to some players, while it means losses to others. We operationalised S_i therefore as a factor that enables actors to make deals across issues.

$$\max_{O \in \Theta} \prod_{a=1}^{n} s_i\left(u_a(O) - u_a(Q)\right) \quad (4)$$

In practice S_i manipulates the distribution of the collective gains while it leaves the zero-sum character of the game untouched. Similar to the exchange model described by Arregui et al. (2006, pp. 134f.) it enables for logrolling across multiple issues or proposals.[7]

We will evaluate in the reminder of the article which one of the models predicts EU decision making processes most accurately. This 'contest' will allow us to see whether bargaining power makes a difference in the legislative process and

which facet of power is the most important one. The comparison refers to the symmetric NBS, its asymmetric version, the saliency off-shot of the model and a two-level game that takes into account how the national parliaments constrain the governments in the negotiations of the Council of Ministers.

Research Design

In this section we outline how we operationalized the key variables and how we implemented the multilateral permutations of the NBS and the adapted Ståhl-Rubinstein model. Our primary source of information is the DEU data set, which is fully described in Thomson and Stokman (2006). The DEU data set includes detailed information on 66 legislative proposals by the European Commission. In order to be considered for inclusion, a legislative project needed to raise at least a minimum level of controversy in order to avoid very technical issues that were of only minor political importance (Thomson et al., 2006). The selection criterion was whether *Agence Europe*, a daily comprehensive news service reporting about European Union activities, mentioned a proposal and whether an EU expert confirmed that the proposal raised a minimum level of controversy. In this way we could avoid legislative proposals in which no EU government took a position and which just included technical amendments and updates. The temporal domain of our study is limited insofar as the Council had to discuss a proposal between January 1999 and December 2000, the period during which the initial interviews were conducted. This decision had the advantage that the experts could still remember the negotiations well enough to report them. Further, no final decision had been made in the ideal case by the time of the interview so that the experts could not rationalize ex-post the

positions of the actors. The final outcomes were gathered if necessary in a follow-up interview. The legislative proposals that were selected were either subject to the consultation or the co-decision procedure; both procedures can require unanimity or qualified majority as voting threshold in the Council of Ministers.

DEU researchers interviewed more than 150 experts; the average length of an interview session was 100 minutes. Interviews were only conducted with experts who had a chance to witness the whole bargaining process between and within the diverse legislative bodies of the EU. Experts were typically officials from the European Commission, the Council of Ministers or the permanent representations (embassies) of the Member States in Brussels.[8] The experts provided the interviewing Ph. D. students with detailed information based on their memory or notes. The first task in the interviews was that an expert identified the controversial issues within a proposal. Based on this, they had to indicate the position the decisive actors (member states, the Commission, and the European Parliament) held shortly before the common position was adopted in the Council. Our experts had to locate the two opposite extreme EU actors on the two end points, 0 and 100 to represent the range of opinions stakeholders took on an issue.

Especially in the cases where qualitative and not numerical issues were negotiated, we relied on our interviewees' expertise to identify the political distances of the negotiating parties. The majority of issues (109 out of 162) reflect a ranked ordering of policy positions. 33 of the issues are dichotomous so that the EU actors only hold extreme positions, and in 20 cases the preferences are represented on an interval scale. Financial transfers to a certain EU programme are an example of a

legislative project in which all realized or potential positions between 0 and the most extreme proposition are feasible options.

We also asked for the position of the reference point which describes the point prevailing if the negotiators do not find an agreement, as well as the location of the final outcome. The outcome of the negotiations and the predictions are also located on the preference scale. Other questions pertained to the salience attributed to the contested issues. We used this measure, which is again based on a scale with a range from 0 to 100, for our evaluation of the saliency model.

Predicted outcomes are located on the preference scale. Our evaluation compares the forecasts across 162 issues. To optimize our function and to constrain our result to the bargaining space between 0 and 100, we relied on the library constrained optimization of GAUSS. Following Thomson et al. (2006) we imputed the positions of actors whose positions are missing in the data set half way between the reference point and the position of the Commission.[9] This indicates that these delegates simply did not care whether the status quo or the Commission proposal would result from the negotiation. We rely on static models and exclude any agenda setter considerations.[10]

The two-level game version of the NBS uses the domestic constraints of an actor as a potential bargaining resource. We use a multiplicative indicator, which takes the formal power of an EU affairs committee and domestic preference divergence into account, to measure to which extent domestic actors limit the leeway of their governments in the Council of Ministers. To assess the power of the EU affairs committees, we quantify the four categories Bergman (1997) used in his comparative evaluation of these parliamentary institutions. The first component of

this indicator measures whether the EU affairs committee is limited to members of the national parliament or includes members of the European Parliament (MEP): We believe that the broader recruitment basis and the consequent gain in EU expertise provided by MEPs empower a committee. The second criterion that we consider is whether or not the EU affairs committee is involved in pillar I, II, III decisions of the Maastricht Treaty. To take part in a larger array of EU decisions is, in our view, a direct indicator of committee influence. All national committees have a say in the Common Market Pillar, whereas only half of them have the possibility to give opinions on Justice and Home Affairs and the Common Foreign and Security Policy. The third benchmark is whether the EU committee can make proposals for a plenary debate. A fourth consideration is the extent to which the opinions of the committee are binding for the government. According to Bergman (1997), a committee has little impact if it is only able to exchange information with its government. Moderate forms of influence exist when the government follows the opinion of the committee in most cases. A committee is highly influential if it is able to make binding recommendations.

We measured the different subcategories on ordinal and dummy scales and created an additive index of these powers. We multiply this index of formal power with a measure of preference divergence between the government and the EU affairs committee. Relying on Benoit and Laver (2006), we identified the ideological position of the cabinet and committee members on a left-right scale (1= extreme left and 20=extreme right) and on an EU-Authority scale (1= favours increasing the range of areas in which the EU can set policy and 20= favours reducing the range of areas in which the EU can set policy) by subtracting the mean of the party positions of the

members in the national cabinet from the mean of the party positions of the members in the EU committee.

We obtained the final variable by multiplying the absolute value of these distances with the ideological constraint and by reducing the variance to three categories: no constraint (range of values 0 to 1.9), average constraint (2.0-3.9), large constraint (4.0-7.5). If a member state fell into the last category, we weighted its expected utility by factor 3; a factor 2 was used in case of an average constraint, and no changes were made if there was no constraint. Finally, we standardized the index on an interval between 0 and 1.

The Asymmetric NBS has been calculated by using the Shapley Shubik (SSI) scores as a capability measure, which differs according to the decision making procedure used (Napel and Widgrén, 2004). We include information for the Commission and, in co-decision cases, the European Parliament.[11] To measure capabilities differently, (Bailer, 2004, 2006) has also conducted expert interviews independently of the interviews on the proposals. The "objective" and "subjective" power measures correlate highly with each other. The first-proposer likelihood that we use for the calculation of the saliency model has been operationalized through the SSI scores.

Table 1 summarizes the models, the parameters used and the operationalizations.

(Table 1 about here)

The Predictive Accuracy of Four Bargaining Models

We evaluate in this section the predictive accuracy of the competing bargaining models quantitatively; an accompanying case study that illustrates our model evaluation is available on the webpage of the first author. We use different criteria to assess how well the different models predict the outcome. The bargaining models that we evaluate are built on the assumption that they constitute, in Morton's (1999) terminology, a 'complete data generating process'; that is, the models are supposed to be identical with the data and they should lead to point predictions. Because our models are deterministic, we cannot rely on a probabilistic statistical specification to evaluate the predictive accuracy of the competing models. As Achen (2006) notes, the assumptions that we introduce about the error structure would have to be consistent with the mechanism that created the original data. Yet, discrepancies between prediction and observed outcomes do not imply that we have to discard the models immediately. Morton (1999, p. 111) offers some guidelines on how we can proceed pragmatically in the evaluation of deterministic models: 'The number of errant observations (and the distance they may be from our predictions) give us crucial guidance in empirically evaluating this type of model, but they are not reasons to reject the model unequivocally'.

The first benchmark on which we rely is the mean absolute error (MAE). Bueno de Mesquita (2004, p. 134, italics in original) correctly states that this straightforward measure is not innocuous: 'Whenever the observed outcome is in the interior of the issue continuum, the MAE *understates* the predictive error of a model, at least to the extent that the maximum feasible error is a relevant consideration'.

We can also relatedly expect that the MAE correlates negatively with the number of alternatives from which a decision making body can choose. If only two extreme positions (0 and 100) are occupied and, the prediction falls onto one of them, the error can amount to 100 per cent. If we have three positions (0, 50, 100) and the prediction is at 50, while the outcome is placed at 100, the error will only be 50 per cent.

Table 2 reports the MAEs for the different models that we compare in our evaluation. We use the median as a null model. Table 2 also offers detailed information on how well the models predicted in different institutional contexts.

(Table 2 about here)

The results reported in Table 2 reveal that especially two models, the symmetric NBS and the saliency model, fare better than the null model. Especially the inclusion of information on the intensity of the actors' preference improves the predictive accuracy of the models. Note that the predictive accuracy of our saliency model is better than the one of the exchange model of Arregui, Stokman and Thomson (2006). Our analysis contradicts their assumption that the more salient an issue is for an actor, the more powerful she is. Our analysis shows that the contrary is the case Interestingly, the asymmetric NBS scores worse than the symmetric NBS, and it is only marginally better than the median model. This means substantially that the more resourceful member states do at the average not perform better than the less resourceful ones. Domestic constraints are also not necessarily a bargaining advantage in the legislative bargaining processes of the EU. This might also be

interpreted as a confirmation of Barry's (1980, p. 338) concept of success as the sum of decisiveness and luck, since we could not integrate the factor of luckiness.

The average predictive accuracy varies considerably across policy areas. In the 40 issues pertaining to agricultural policy making, the symmetric NBS has the lowest MAE (21.86), followed by the saliency model (22.14). Table 3 shows the reversed order for internal market decisions (34 issues) where the saliency approach has an MAE of 34.24 and the symmetric NBS of 25.93. In the other policy areas (88 issues), the time preference model is particularly accurate with an MAE of 16.84.

Because we are evaluating point predictions, a second criterion is how often a model provided an accurate point prediction. Table 3, which provides two levels of tolerance to assess the results in this fashion, provides these results.

(Table 3 about here)

As Table 3 demonstrates, our evaluation of the competing bargaining models changes considerably if we use the number of correct point predictions as an assessment criterion. The asymmetric NBS, which accounts for the influence of votes on the decision making outcome, performs best with more than one third perfect predictions. Its number of correct predictions is almost twice as large as for the saliency model. The median position - and thus ultimately an a-theoretical model in this context - also seems quite useful in predicting outcomes. Yet the median has insofar an advantage as it necessarily coincides with one of the positions that the actors take. If we are more tolerant in evaluating the predictions and allow a 'margin of error' of up to 10 per cent, the median loses consequently much of its predictive bite.

At the 10%-level of error, the number of accurate predictions of the saliency model is almost as large as the one of the asymmetric NBS. As Table 2 suggests, the latter model would quickly beat the former model if we enlarge the allowed divergence further. The discrepancy in the performance of the asymmetric NBS means that this model provides very accurate and very bad predictions simultaneously, leading to a higher MAE than the corresponding figures of competing models. Although votes do not play a role at the average, they were consequently important in many of the decision making situations that we examine here.

The similarities between the predictions are despite these differences considerable. The lowest Pearson correlation amounts to 0.75, measuring the association between predictions of the two-level NBS and the forecasts derived from the asymmetric NBS. The predictions of the symmetric NBS and the ones of the saliency model are very close with a coefficient of 0.93. Yet, the number of "ties" in the predictions of these two models is relatively small.

The large number of ties between the symmetric NBS and the two-level game implies that the different domestic constraints cancel each other out with regard to the collective outcome. This confirms that domestic constraints are rarely important in EU legislative decision making (see also Bailer and Schneider, 2006).

To explain the ambiguous role of capabilities, we conducted logistic regression analyses. We particularly examined the role that the polarization of the preferences and the distance of the outcome for the median have on the relative accuracy of the asymmetric NBS. The dependent variable is 1 if the asymmetric NBS is accurate in comparison to a competing model. We used the Herfindahl-Hirschman index of concentration to account for the impact of polarization. The Herfindahl-Hirschman

(HH) index of concentration equals the sum of the squares of each position's percentage share. The larger this index, the higher the concentration of positions. All logistic regressions show that a growing polarization makes it less likely that the asymmetric NBS offers accurate point predictions. The predictive leverage of this model also suffers when the distance between the median and the final outcome grows. Capabilities are thus decisive in situations in which the preferences of the actors are uniformly or normally rather than bimodally distributed. On highly divisive issues, the outcome can go two ways. This automatically increases the accuracy of the models that favor compromise solutions. The saliency model we implemented and the symmetric NBS belong to this category of models, the asymmetric NBS conversely not.

Conclusion

This article has explored whether power affects outcomes within EU bargaining processes. To this end we compared the predictive accuracy of competing bargaining models. Our analysis demonstrated that models that account for the saliency attributed to an issue are on average the most accurate theoretical frameworks. Models that take the voting power of the actors into account offer by contrast, the largest number of correct point predictions among the non-trivial explanatory mechanisms.

This ambiguous double result has important implications for the study of decision making in the European Union. It shows that we should not underestimate the importance of votes, as one camp in the controversy over the role of voting power indices largely suggests (e.g. Garrett and Tsebelis, 2001). Yet, as voting

power indices that take preferences into account have both shaky theoretical foundations (Albert, 2003; 2004) and a limited empirical relevance (Thomson et al., 2006), we need to develop alternative resource-based models. As our analysis suggests, resource based bargaining models are an attractive option which might be further explored. Future applications of bargaining models might want to move beyond the framework developed by Nash and try to consider alternatives like the Kalai-Smorodinsky bargaining solution.

Another important feature of bargaining within the European Union is the role of saliency. In our view, this concept is a close proxy to time preference which leading bargaining theorists consider being an utmost resource at the negotiation table (Rubinstein, 1982; Rubinstein and Osborne, 1990). Because saliency allows for vote trading, we need to study in the future more closely how decisions on different issues within one proposal as well as different proposal within the same policy area relate to each other. We believe with a large literature that vote trading occurs frequently in the European Union, but we do not yet know when this bargaining device is successful. By focusing on the importance of salience our analysis builds a first step to uncover the dynamics of vote trading within EU decision making.

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TABLES

Table 1: Models, parameters and operationalizations

Model	***Variables***	***Operationalizations***
Symmetric NBS	Preferences	DEU preference scale
Two-Level NBS	Preferences; power and preferences of EU affairs committees	DEU preference scale; Committee power; preference divergence
Asymmetric NBS	Preferences; capabilities	DEU preference scale; Shapley-Shubik index
Saliency NBS	Preferences; salience	DEU preference scale, DEU salience scale ; Shapley-Shubik index

Note: The mean served as a starting vector for all calculations. The opimatization method is Newton and the GAUSS procedure that we used is constrained optimization (library co.scr)

Table 2: The mean average error of the model predictions

Sample specification / *Model*	*All issues (n=162)*	*CNS QMV (n= 55)*	*CNS Unanimity (n=39)*	*COD QMV (n=56)*	*COD Unanimity (n=12)*
Median	27.21	30.55	17.83	30.38	27.58
Symmetric NBS	20.96	21.29	16.31	23.66	22.00
Two-Level NBS	22.85	23.94	16.07	26.30	24.11
Asymmetric NBS	25.53	28.76	17.27	27.67	27.58
Saliency NBS	19.49	21.57	14.54	21.35	17.41

Note: The median with imputed data was calculated. The MAEs for the median without data imputation amount to 28.04 (all issues), 30.62 (CNS QMV), 21.03 (CNS unanimity), 29.90 (COD QMV), 31.75 (COD Unanimity). CNS=Consultation, COD=Codecision, QMV=Qualified majority threshold.

Table 3: The number of accurate point predictions

Tolerance Model	Divergence of less than 0.1%	Divergence of less than 10%
Median	54 (33.3%)	63 (38.8%)
Symmetric NBS	33 (20.4%)	70 (43.2%)
Two-Level NBS	29 (17.9%)	63 (38.9%)
Asymmetric NBS	58 (35.8%)	74(45.7%)
Saliency NBS	31 (19.1%)	73(45.1%)

Notes:

[1] A further problem of the approach is its limited usefulness for empirical research. Albert (2003; 2004) maintains that voting power indices are an exercise in probability theory without an empirical referent while Felsenthal et al. (2003) object to this qualification.

[2] The predictive accuracy of the models with and without information on the status quo does not differ greatly. Other applications of the NBS that include information on the reference point are König (1997) and the Milner/Rosendorff-model (Milner, 1997; for critical reactions see Dai, 2002; Butler; 2004).

[3] The details of our calculations are outlined in the webappendix.

[4] Our classification of power mechanisms is not complete. Muthoo (1999; 2000) differentiates insightfully between inside and outside options and analyzes the role of asymmetric information. See also Schneider (2005).

[5] However, these findings are bound to the constraint that the final outcome has to be inside the winset of the status quo (ibid.).

[6] This result considers that the overall share s_a that a particular player a will receive in equilibrium has to be $s_a = 1 - \left(\sum_{j=1}^{n-1} s_j + \pi_{ki} s_i \right)$, where j ≠ a, j ≠ i and i ≠ a. In other words, the player (a) receives what other players (j) and the first-proposer (i) have left from the cake.

[7] Arregui et al. (2006) build on the research tradition inaugurated by Coleman (1966 a, b) and develop an exchange model in which they, due to differences in the positions and the saliences, partly change their negotiation positions.

[8] Because most experts took part in the relevant negotiations in the Council, our estimations most likely stress the importance of the member states represented in this intergovernmental body at the expense of the Parliament and the Commission. The advantage of this bias is, however, that we obtained relevant information on the negotiations within the overly secretive Council which is still able to limit public access to the protocols of its meetings Zimmer, Schneider, Dobbins (2005).

[9] This imputation method has been suggested by the DEU research group to minimize possible distortions of the model predictions (Thomson and Stokman 2006, p. 52). However, missingness occurs in roughly 7% of the issues and less than 15% of the proposals. For a critical discussion of the imputation method and possible alternatives see König et al. (2005).

[10] We did not include the position of the European Parliament for the consultation cases, because the parliament has only consultative and no legislative power in this legislative procedure.

[11] Thomson and Stokman (2006, pp. 50f) detail the way in which the SSI scores were coded in light of the different decision making procedures and voting rules.