Bargaining under Uncertainty: An Empirical Analysis of Changes in Government Positions at the Nice Intergovernmental Conference[*]

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Abstract

When political leaders recognize the negative externalities of policies for other countries, they may declare their willingness for cooperation and start a bargaining process with summit meetings. However, once these leaders meet at the bargaining table, they have to identify key policies and find solutions for changing the status quo that overcomes such externalities. In this study, we argue that political leaders face uncertainty about the domestic support of those policies when they initially announce their willingness to cooperate. Once they start bargaining on key policies, they may pursue more restrictive solutions, which constrains international cooperation. Over time, however, they also learn about domestic implications and may change their initial policy positions, which may either further constrain or promote finding bargaining solutions. As some political leaders have stable policy positions, while others have non-stable ones, we test the empirical implications of our bargaining model under uncertainty with data on political leaders' policy positions in the bargaining process of the Nice Treaty. This treaty was supposed to prepare the European Union through institutional reform for the integration of twelve mostly Post-Communist applicant countries into the EU's common market, which raised fears about negative externalities among several member countries that had to support a change of the status quo. In contrast to their public declarations on the need for reform, we show that political leaders initially pursued very restrictive policy positions in spite of approaching Eastern enlargement. Although the final result could not satisfy the initial expectations, we show that the Nice Treaty was adopted because several political leaders modified their policy positions in accordance with the level of uncertainty at home. This finding suggests that the Nice Treaty is the outcome of a strategic function dependent on the existence of negative externalities and preference heterogeneity across EU member countries.

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1 The Formation of Policy Preferences on International Cooperation

International cooperation is a central theme in the literature on international relations (Schelling, 1960; Waltz, 1979; Axelrod, 1984; Keohane, 1984; Axelrod and Keohane, 1985; Lipson, 1984; Snidal, 1985; Oye, 1986; Stein, 1990; Milner, 1992; Moravcsik, 1998; Martin, 2000; Lake and Powell, 1999; Zartman and Touval, 2010; Glaser, 2010; Nye and Welch, 2012). Whether and why countries fail to cooperate due to problems of cheating and relative gains has attracted considerable scholarly attention (Olson and Zeckhauser, 1966; Jervis, 1976; Hardin, 1968; Snyder, 1984; Keohane, 1984; Snidal, 1985; Oye, 1986; Krasner, 1991; Fearon, 1995; Downs, Rocke, and Barsoom, 1996; Downs and Rocke, 1997; Powell, 1999; Grieco, Gelpi, and Warren, 2009; Glaser, 2010). One precondition for international cooperation is that political leaders mutually acknowledge the need for changing the status quo because externalities, such as the implications of climate change, trafficking, or flows of refugees and immigrants, negatively affect one or more countries. In such situations, political leaders can demonstrate their leadership competence and announce their willingness to address those externalities. However, although political leaders may commonly acknowledge the need for international cooperation, they still have to solve the bargaining problem behind international cooperation (Fearon, 1998). This means that they have to identify key policies and find solutions for coping with existing or future externalities. Despite universal agreement on the need for international cooperation, such negotiations can become a disappointing exercise when political leaders pursue more restrictive policy positions, which may ultimately threaten international cooperation. This is known as the status quo bias, which constrains international cooperation, even when knowledge about the need for taking action may have increased over time. However, when political leaders have declared a need to take action, the policy preferences of their voters, at least in democratic countries, may force political leaders to change their mind and overcome this status quo bias in favor of more international cooperation.

In this article, we model the policy preference formation of political leaders as a function of negative externalities and the distance to their domestic audiences. Our model of bargaining under uncertainty starts by distinguishing two groups of political leaders according to the size of negative externalities that they would experience from maintaining the status quo. When the status quo remains unchanged, one group of leaders suffers more from those negative externalities and, therefore, has a larger incentive for international cooperation. Before entering into bargains on the specific policies that may overcome those externalities,

political leaders must have a common understanding and declare their willingness to take action in summit negotiations. Once the specific policies are identified, political leaders pursue policy-specific positions and also seek to match the bargaining solutions with their belief about the true state of the world, which we conceptualize for democratic countries to be identical to the support of their domestic median voter that they need to hold office. To reflect learning during those negotiations, we distinguish between the beliefs of political leaders about the true state of the world at time $t = 0$, i.e., before the bargaining takes place, and at time $t = 1$, when they have to agree on policy solutions. While uncertain in the first place, the media coverage of such summits, for example, allows political leaders to (relatively cheaply) acquire information about the opinion of their domestic audiences and to update their policy position in *either* direction. Hence, our model does not simply attest to a status quo bias of international cooperation, but points to a learning process of political leaders from the opinion of the voters. Although we examine the empirical implications of our model to learning from the voters, our model also allows to examine the dynamics of this learning process of political leaders from other sources, such as experts, interest groups etc. which may play an important role in the leader's considerations. When these sources favor either maintaining or changing the status quo, political leaders may update their policy positions during the bargains.

Our model contributes to the literature on international cooperation by relaxing strong assumptions on bargaining among political leaders. Oftentimes, scholars assume that bargaining takes place under complete information (Moravcsik, 1998; Slapin, 2011) or that uncertainty rests primarily with ratification rules and the types of domestic audiences (Hug and König, 2002) as in classic incomplete information games (Harsanyi, 1995). Rather than being uncertain about *other* players' attributes, we suppose that political leaders suffer from uncertainty about their *own* benefit from successful bargaining (Iida, 1993).[1] This distinction is also important for understanding bargaining outcomes, because in such an environment, learning about the true distribution of cooperation payoffs provides us with an understanding of bargaining dynamics that can explain both "the stop and the go [processes]" (Schneider and Cederman, 1994, 634) in international cooperation. Based on the equilibrium conditions we simulate cooperation probabilities for various parameter values, with two key take-away messages: First, the simulations highlight that cooperation probabilities

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[1]Note that our model focuses on uncertainty about own payoffs as does Iida's (1993) "analytic uncertainty," but is more general in the sense that it allows for *ex post* different payoffs after uncertainty is resolved. See (Finus and Pintassilgo, 2013) for a recent discussion about different forms of uncertainty in economic models of international environmental agreements.

depend on (i) how much a country suffers from externalities under the status quo (externality dimension), and on (ii) the distance between the proposed summit solution and the policy preferences of the domestic audiences (size dimension). As this relationship may well be non-linear, we secondly identify a trade-off that can explain why political leaders fail to implement their declared support of international cooperation in spite of approaching externality implications. The simulation results exemplify that more information about the true state of the world, i.e., about the policy preferences of domestic audiences, may either undermine or support bargaining success. Whenever political leaders come to understand that their domestic voters favor more international cooperation on a policy than the leaders initially believed, they have *ceteris paribus* an incentive to change the status quo—which also refers to their initial announcement to take action. Following the analysis of (Schimmelfennig, 2001, 49) on "rhetorical action," our model predicts that even political leaders with low cooperation incentives on the externality dimension may move towards a preference for changing the status quo when this is favored by their domestic audiences over a less cooperative solution.

Evaluating the empirical implications of our model is a difficult endeavor because it requires data on political leaders' bargaining positions and their eventual change over time, as well as how these relate to their voters' opinions. Ideally, these data should be available for an event that political leaders commonly acknowledged would impose negative externalities which they declared could be overcome via international cooperation. Fortunately, we were able to gather these data for one of the most challenging tasks of international cooperation of this century, the integration of twelve mostly Post-communist countries into the European Union (EU), which ended the postwar division of Europe (Baldwin, Francois, and Portes, 1997). The twelve applicant countries would increase the population of the EU by around 30%, but its total GDP by only 4%, and this raised serious concerns about the functioning of an enlarged EU (Kandogan, 2000). According to the political leaders from Belgium, France, and Italy, strengthening the EU institutions was an "indispensable condition for the conclusion of the first accession negotiations." (European Union, 2007). Early on, the political leaders of the member countries (EU15) publicly declared that Eastern enlargement requires a reform of the existing treaties for two reasons: Enlarging the EU15 to twenty-five or more members was expected to gridlock EU decision making (Rodden, 2002; Moberg, 2002; König and Bräuninger, 2000, 2004; Tsebelis and Yataganas, 2002), and the political leaders, especially from those bordering the applicant countries, feared considerable negative externalities by immigrant workers from this accession

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round.[2] However, once the political leaders met at the bargaining table, the key reform policies divided the EU15 into a group of drivers advocating an early and firm commitment to Eastern enlargement and a group of brakeman who were "reticent and tried to pull off the decision" (Schimmelfennig, 2001, 49).

Following a report of high-level experts—led by the former Belgium Prime Minister Dehaene—the European Commission described the general goal of this reform in a document entitled "Adapting the institutions to make a success of enlargement" on January 2000, in which the key reform policies were outlined. After consultations with the European Commission and the European Parliament, whose opinions must be sought before an Intergovernmental Conference (IGC) can be convened, the EU15 opened the Nice IGC in February 2000 to negotiate key reform policies. Yet, after the bargaining had started, many political leaders of the EU15 failed to stand by their initial reform declarations and pursued more restrictive bargaining positions in spite of the rapidly approaching Eastern enlargement expected in 2004. Our study shows that many of the initial reform goals were not achieved by the Nice Treaty, and some important policies such as a change of the high voting rules, were even changed in the opposite direction during the summit bargains.[3] At the same time, our analysis also reveals that a breakdown of the summit negotiations was avoided because several political leaders changed their mind towards more cooperation when their domestic audiences favored this. This finding suggest that the policy preferences of the voters were decisive for finding bargaining solutions, although the Nice Treaty insufficiently reformed the institutional framework to prepare for Eastern enlargement, and the EU15 established the European Convention with the goal to overcome the complicated, technocratic, and "undemocratic" provisions of the Nice Treaty.

Certainly, Eastern enlargement imposed a historical challenge for European integration, and the Nice Treaty is perhaps a special case given that summit negotiations are not usually at risk of ending in disaster. However, the story of the Nice Treaty nicely illustrates a central puzzle of European integration that is of interest to a wider audience of scholars studying the dynamic nature of reform processes more generally at the international and domestic levels. Oftentimes, political leaders declare their willingness to cope with global challenges, such as financial crises, poverty and immigration, and commonly express their willing-

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[2]With the applicant countries providing lower labor standards and holding large primary sectors with unfavorable farming structures, many existing EU member countries were wary of the externalities of immigrant workers and distributional consequences for agricultural policy making, which accounted for more than half of EU spending already *prior* to Eastern enlargement.

[3]For example, the existing voting rule in the Council of Ministers prescribed two criteria which set the hurdle to a quota of 71.2% of the votes, while the new rules established three criteria with a quota of 73% of the votes.

ness to cooperate in order to change the status quo. Theoretically, these initial declarations, even though they are neither binding nor enforceable, function as commitment devices which can overcome the discrepancy between short- and long-term preferences (Svolik, 2006; Gaubatz, 1996). A common feature of those challenges is that they impose negative externalities to at least one country that finds recognition from other countries' leaders, because of its importance, membership status, long-term implications, or similar considerations. When these political leaders then meet at the bargaining table, they fail to follow-up on their initial promises even though they have the capabilities, resources, and powers to effect change. Examples like these testify to a status quo bias when collective action needs to be taken and are well-known in the international relations and political economy literatures (Fernandez and Rodrik, 1991; Cukierman and Tommasi, 1998; Bräuninger and König, 2000). Once the policies are on the bargaining table, political leaders refrain from taking action, even though information about these challenges and the need to change the status quo due to negative externalities remains the same or even increases, as it was the case in our example of approaching Eastern enlargement (Finke et al., 2012). Importantly though, our analysis demonstrates that domestic audiences can promote finding solutions when political leaders have initially declared to take action and care about the policy preferences of their voters. In the end of the Nice IGC, the political leaders avoided signalling "escalation" or "back down," because this signal would have affected their credibility vis-á-vis other leaders and domestic audiences (Fearon, 1994, 1997).

In the remainder, we present our bargaining model under uncertainty, characterize the equilibrium, and discuss and derive testable hypotheses. We first hypothesize that cooperation becomes more likely, the more a country suffers from negative externalities. In contrast to two level-game analysis, we secondly hypothesize that international cooperation becomes less likely, the more heterogenous the countries' domestic policy preferences are. Since this hypothesis is a measure of heterogeneity in preference across countries , we resonate our predictions by simulations showing why policy preference heterogeneity discourages international cooperation. Next, we introduce our research design and discuss our data on political leaders' bargaining positions of 15 EU member states on eight reform policies, which we were able to track over time, along with the median voters' positions. Our empirical analysis follows, before our findings are discussed in the conclusion.

2   A Formal Model of Cooperation with Learning

Over a period of 50 years, the EU has been created and shaped by a series of amendments to the treaties negotiated at IGC summits (Moravcsik, 1998), with the most prominent treaties being the founding Rome Treaties (1957), the Single European Act (1987), the Treaty of Maastricht (1993), the Treaty of Amsterdam (1999), the Treaty of Nice (2003), and the Lisbon Treaty (2009). A common thread of all these treaty amendments is that they required both agreement among political leaders at the European level and domestic ratification in each member state (König and Hug, 2000). With the Treaty of Amsterdam in 1997, the EU15 already agreed to the commitment that "at least one year before the membership of the European Union exceeds twenty, a conference shall be convened in order to carry out a comprehensive review of the provisions of the Treaties on the composition and functioning of the institutions" (European Union, 1997, Article 2). At the Cologne European Council in June 1999, the EU15 reconfirmed the need for institutional reform and the Helsinki European Council in December 1999 specified the mandate of an IGC that would have to look at the size and composition of the European Commission, voting weights in the Council, possibilities for extended use of qualified majority voting, and other institutional adjustments to the treaties. To understand cooperation problems in spite of these declarations and the history of treaty amendments, we explore the strategic link between bargaining, position change of political leaders, and domestic preferences in a simple formal bargaining model under uncertainty.

Our model distinguishes between two (groups of) countries with $i = A, B$, which can equally well be conceived of as political leaders from EU15 countries. Each leader sets a non-negative policy $q_i \geq 0$ and has incentives to match it with θ_i, that is, with what the leader thinks is the true state of the world. To entertain a narrative of electoral control (Barro, 1973; Ferejohn, 1986) that is imposed by domestic ratification, the true state of the world in our model can be understood as a leader's belief about which bargaining solution of a policy the own domestic electorate prefers the most. As these beliefs about domestic policy preferences are uncertain, at least initially, we model θ_i as a random variable that comes from a uniform distribution over the unit interval. Compared to incomplete information models, in which uncertainty about institutional rules or player types make an optimal policy choice difficult for a leader, uncertainty in our model results from insufficient knowledge about the policy preferences of the constituency in a political leader's *home* country (Bayer, 2014; Iida, 1993; Kolstad and Ulph, 2011); this precludes perfect *ex ante* matching of policy q_i with

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the true state of the world θ_i.

In setting policy, each political leader imposes negative externalities on the other country. If, for instance, a country introduces trade restrictions, emits toxic pollutants, engages in trafficking, or more generally, supports a policy under the status quo that does not prepare for future challenges, it may negatively affect other countries. To avoid such externalities, cooperation becomes necessary. At the same time, cooperation is however costly because it typically requires political leaders to support policies which are different from the ones they would have chosen otherwise. As documented below, this captures the fundamental trade-off that political leaders face when deciding whether to support cooperative or non-cooperative policies.

We specify each leader's utility with a linear absolute value function, given as

$$U_i = - \mid q_i - \theta_i \mid -m_i q_{-i} \quad \text{for } i = A, B. \tag{1}$$

This functional form has three characteristics: First, each political leader's utility decreases, the further away a policy, q_i, is from the domestic electorate's preferred policy, θ_i. Consistent with notions about democratic institutions and electoral control (Schofield, 2010; Poole, 2005), office-seeking leaders are thus accountable to their domestic audiences (Dai, 2005; Adserà, Boix, and Payne, 2003; Lake and Baum, 2001). From an institutional perspective this allows to inspect which type of democratic institution promotes a close relationship between leaders and voters.

Second, utility depends on domestic policy preferences, θ_i, which are *a priori* unknown to political leaders, but can be learned over time. Polls, surveys, protests, or (campaigns for) referenda may provide political leaders with valuable information about what their voters want, which allows them to update their beliefs. Because of learning, which is assumed to be costless for the sake of simplicity, θ_i can change as the game unfolds. This offers a longitudinal perspective on the evolution of leaders' policy positions through information transmission.

And third, utility is decreasing in the externality q_{-i}, imposed by the other country $-i$. Notably, this effect is stronger, the more vulnerable a country is to such negative externalities, which is captured by the sensitivity parameter $m_i \geq 0$. While low values of m_i denote resilient countries that suffer little from externalities, high values characterize susceptible countries, which incur substantial utility loss even from moderate exposure to externalities. This comparative perspective distinguishes between a country's cooper-

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ation incentives.

To show the implications of our model, we consider the simplest world possible. There are two periods, and in every period, both (groups of) leaders simultaneously decide whether to approve a cooperative or a non-cooperative outcome. In-between periods, Nature moves and reveals the realizations of the random variables θ_i and θ_{-i} to both (groups of) leaders. Thus, in the second period, there is no uncertainty about the true state of the world anymore, and leaders accurately know what domestic policy preferences look like. Throughout the entire game, parameters m_i and m_{-i} remain the same because a country's vulnerability to externalities changes, if at all, much more slowly than the policy preferences of a domestic audience— political life cycles are shorter than, e.g., a country's damages from externalities such as climate change or its economic attractiveness for immigrant workers. Additionally, m_i and m_{-i} are assumed to be common knowledge, which is reasonable in our setup as political leaders announced the need to reform EU institutions prior to the IGC summit. Hence, all players should have a sufficiently accurate understanding of who suffers how much from the negative externalities. It is this sensitivity which the m parameters capture.

Even though we conceive the cooperation problem as one that evolves over time because it allows for learning about domestic policy preferences, the equilibrium analysis does not require a more complicated dynamic solution concept. Since we do not assume an informational advantage to exist for any of the leaders throughout the entire sequence of play, we can separately analyze the two stages of the game, conditional on the specific informational scenario. Closely following Kolstad (2005), we compare equilibrium conditions under uncertainty in the first period with those under complete information in the second period. This approach offers easy extensions of the model—both to more than two periods and other distributions of domestic policy preferences—as the equilibrium condition remains structurally the same.

Equilibrium Analysis

With the two stage games being identical, save for each leader's information levels, we can characterize equilibrium conditions that apply similarly to the first and second period of the game. In each period, a political leader either decides on a cooperative or a non-cooperative outcome. The latter policy is one for which a leader maximizes *individual* utility, which implies that each leader ignores that implementing non-zero policies imposes costly and harmful externalities on the other country. For the linear utility function,

given in equation (1), it is straightforward to show that a non-cooperative policy q_i^N maximizes individual utility if it is exactly equal to the policy preferences of the domestic audience. This requires

$$q_i^N = \theta_i \quad \text{for } i = A, B \tag{2}$$

and illustrates that, indeed, the only difference in terms of optimal policies across stage games is whether θ_i denotes the expected value (first period) or the true realization of domestic policy preferences (second period).

For cooperative outcomes, political leaders maximize *collective* instead of individual utility. Maximizing collective utility, defined as the *sum* across both players' individual utilities, has been shown to provide public goods at optimal levels (Samuelson, 1954; Sandler, 2004), so that negative externalities from policy q_i are fully accounted for. Thus, maximizing collective utility fundamentally changes each leader's optimization rationale because any positive utility from increasing policy towards one's *own* θ_i is offset by the *other's* utility loss due to negative externalities. How strong this counteracting effect is depends on the other leader's sensitivity to negative externalities. In fact, we show in the mathematical appendix that for small enough m_{-i}, cooperative and non-cooperative outcomes are identical, while for $m_{-i} > 1$, the cooperative best response is to set

$$q_i^C = 0 \quad \text{for } i = A, B. \tag{3}$$

Intuitively, this finding is plausible for the following reason: If the other country incurs large losses from negative externalities, as is true for $m_{-i} > 1$, then any utility gain from an incremental policy increase is overcompensated by a necessarily larger utility loss due to the externality. For values above unity, the sensitivity parameter in the collective utility function essentially assigns more weight to avoiding the externality than to matching policies to domestic policy preferences, thereby driving down optimal policy to zero. Notwithstanding that $q_i^C = 0$ is a special case due to the linearity in the model, the finding that cooperative outcomes are decreasing in the other country's vulnerability to negative externalities holds more generally (Bayer, 2014).

In the following, we limit our analysis to cases for which m_i and m_{-i} are larger than one. Substantively, these cases are of most interest because they are the ones where large externalities exist and cooperation

is needed the most. Technically, we have to constrain sensitivity parameters in order to be able to assess *changes* in behavior in any meaningful way, because only under these conditions do changes in behavior translate into observably different policy levels under cooperation and non-cooperation. We now characterize a simple condition, for which mutual cooperation with q_i^C and q_{-i}^C is a self-enforcing equilibrium (Barrett, 1994). Such an equilibrium exists when *both* leaders are better off picking the cooperative instead of the non-cooperative outcome. Mathematically, we need to have

$$U_i(q_i^C; q_{-i}^C) > U_i(q_i^N; q_{-i}^N) \quad \text{for } i = A, B. \tag{4}$$

If this condition is met for both (groups of) leaders, cooperation prevails in equilibrium. This equilibrium is self-enforcing in the sense that no leader has an incentive to deviate from the outcome. Opting out from mutual cooperation and unilaterally choosing a non-cooperative outcome cannot be an equilibrium strategy because the remaining cooperator's best response in a repeated game would *not* be to continue cooperation in future rounds, but to set a non-cooperative outcome as well. Deviating from cooperative play is credible under these circumstances as a non-cooperative outcome yields strictly higher payoffs than a cooperative one, when confronted with another, non-cooperating player (Barrett, 2005, 1488ff.). This rationalizes the self-enforcing nature of the equilibrium and lends credibility as to why cooperation can be possible even in a world without perfect third-party enforcement and incomplete contracting.

The above optimal policies, in combination with the cooperation condition in equation (4), fully characterize all possible equilibrium outcomes. The two types of equilibria are formally summarized in the following proposition.

Proposition 1. *For $i = A, B$, let condition C be defined as $\frac{1}{m_{-i}} < \frac{\theta_i}{\theta_{-i}} < m_i$. Then, if C is satisfied, an equilibrium exists in which both leaders choose cooperative outcomes, $q_i^C = q_{-i}^C = 0$. Otherwise, a non-cooperative equilibrium exists, with policies $q_i^N = \theta_i$ and $q_{-i}^N = \theta_{-i}$.*

This proposition is helpful as it allows us to assess under which conditions cooperation is more likely to unfold. In the next section, we therefore discuss determinants of international cooperation and derive testable hypotheses that relate the sensitivity to externalities as well as domestic policy preferences to changes in equilibrium behavior.

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Discussion and Testable Hypotheses

First, we consider the effect of increased negative externalities on cooperation incentives. In reviewing Proposition 1, this effect is unambiguously positive, because as any of the two, or both countries' sensitivity parameters are increasing, the cooperation condition becomes less binding. Cooperation is thus more likely to be observed as an equilibrium outcome when countries are highly affected by a negative externality. In light of our model, it thus does not come as a surprise that border countries to Eastern enlargement favor more change to avert negative implications, while non-bordering countries slowed the reform process as they stood to lose little under the status quo (Schimmelfennig, 2001); due to the geographic distance, negative externalities were small, as was the willingness to promote cooperation.

These observable implications are consistent with what our model suggests. More vulnerable countries with high values in the m parameters incur severe utility loss from the externality, that is, when the cooperation problem remains unaddressed. However, when a cooperative solution is found, negative spillovers are reduced as cooperating countries account for them in their behavior. This rationalizes why political leaders strongly argue in favor of cooperative solutions whenever their home countries are very sensitive to negative externalities. Our first hypothesis therefore posits a positive relationship between a country's exposure to externalities and international cooperation as an equilibrium outcome.

Hypothesis 1. *International cooperation becomes more likely, the more a country suffers from negative externalities.*

Notably, sensitivity parameters in our model are fixed, which seems to be a reasonable assumption in the context of repeated bargaining. No matter if we consider consecutive rounds of WTO trade negotiations, annual climate talks under the auspices of the United Nations, or the past 50 years of European integration, the fundamental *structure* of the underlying cooperation problem rarely evolves over time, and if so, only at a slow pace. Countries, for example, that currently have a comparative advantage in labor intensive production are reluctant to push rapid enlargement of the EU and are likely to perceive the basic structure of the cooperation problem in much the same way, even a few years down the road. This justifies m_i and m_{-i} to be constant over time.

However, what can change fairly rapidly over time, even in the short run—and that brings us to our

second hypothesis—is each leader's belief about domestic policy preferences. Since our model allows for costless learning over a continuous distribution of such preferences, political leaders can realize in the second period of the game that their prior beliefs in the first round were either too high or too low. As changes to θ_i and θ_{-i} obviously alter the ratio of the two, identified as the main quantity of interest in Proposition 1, learning about these changes at the domestic level can trigger positional change in a leader's behavior at the European level. Depending on the "starting values" of θ_i and θ_{-i}, learning cuts both ways, which is easy to see when considering the following two cases: First, suppose cooperation was impossible in the first period; then learning may facilitate cooperation if it moves $\frac{\theta_i}{\theta_{-i}}$ inside the $(\frac{1}{m_{-i}}; m_i)$ interval. Second, assume that cooperation is feasible in period 1 but it may break down in the second round of the game if learning shifts the θ-ratio of domestic policy preferences outside the cooperation interval. All of this is to say that cooperation becomes more difficult, the more heterogeneous the voters' policy preferences in the two countries are. Our second hypothesis captures this negative relationship between heterogeneity in policy preferences across countries and international cooperation as an equilibrium outcome.

Hypothesis 2. *International cooperation becomes less likely, the more heterogenous the countries' domestic policy preferences are.*

To examine Hypothesis 2 in greater detail, we simulate cooperation probabilities for various levels of preference heterogeneity across two countries. Specifically, we set sensitivity parameters to $\frac{3}{2}$ for both countries, and arbitrarily fix country B's θ_B either at a low level of 0.3 (left panel) or a high level of 0.6 (right panel). As simply varying values of θ_A for the other country from low to high would only allow to produce deterministic predictions from the model, we instead let θ_A come from a truncated normal distribution over the unit interval and increase the distribution mean from zero to one, by increments of 0.1; standard deviations are also varied and can either be low with $\sigma = 0.1$ or high with $\sigma = 0.2$, as denoted by solid and dashed lines in the plots below. For generating cooperation probabilities, $1,000$ draws are taken for each mean and variance combination to calculate relative frequencies of how often the cooperation condition in Proposition 1 is satisfied. Simulation results are shown in Figure 1.

[Figure 1 about here.]

Both plots reveal an unambiguous bottom line: with growing levels of preference heterogeneity across

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the two countries, international cooperation becomes less likely. Figure 1 illustrates two aspects of this key insight.

First, as the mean of the distribution for values of θ_A approaches 0.3 and 0.6, respectively, that is, the beliefs about domestic policy preferences of the other country, cooperation probabilities peak. Our model helps understand this finding. When voter policy preferences are heterogenous or dispersed and separated by a wide margin, two simultaneous effects make a political leader with higher θ_i want to end cooperation. For one, cooperation is costlier when θ_i is high as it requires a larger policy change when choosing $x_i^C = 0$ instead of $x_i^N = \theta_i$. At the same time, when domestic policy preferences are very different, benefits from cooperation are low for a leader with high θ_i because the negative externality created by policy θ_{-i} in the other country is necessarily modest. This explains why preference heterogeneity in policies discourages international cooperation, as evidenced by our simulation results.

Second, we show that the logic of our argument becomes even more compelling as the variance of the distribution of θ_A decreases. The lower the spread of the distribution, the more likely the randomly drawn θ_As are to fall in the close neighborhood of the distribution mean. This form of higher precision implies that cooperation will only be feasible for means that are sufficiently close to θ_B, thereby amplifying the heterogeneity effect. Echoing our model's punchline about the importance of policy preference heterogeneity for cooperation, we now empirically test the two derived hypotheses against data on cooperation and position change in leaders' behavior in the context of the Nice IGC.

3   Research Design: The Nice IGC and Position Change of Political Leaders

In order to test the implications of our bargaining model under uncertainty, we need data on a case of high-level political leaders' negotiations over a cooperation problem, for which political leaders have declared their willingness to take actions and for which their policy positions have considerably changed over time. The simple reason for this precondition is that domestic audiences need to know about this cooperation problem in order to express policy preferences, and the political leaders need to learn about those policy preferences, which they consider to be important for retaining their own office. Drawing on an original data set, we will focus on political leaders' positional changes in negotiations over the outcome of a cooperation problem that has ultimately become known as the Treaty of Nice. After initiation of the Nice IGC process

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through the European Commission and the European Parliament, the Presidency report to the Feira European Council summarizes pre-negotiation declarations on eight key reform policies of the EU15.[4] Among these policies were changes to the enhanced cooperation procedure as well as to the functioning of all central decision-making bodies in the EU, i.e., the European Commission, the European Parliament, and the Council.

Reforming the European Commission involved discussions about its future size, composition, and political accountability, with the most important result being that all of the 27 to-be-member states, after enlargement, are entitled to nominate one Commissioner each; this transfers power to the accession states as it deprives large member states of their previous right to send two Commissioners to Brussels (Yataganas, 2001; Wessels, 2001). For the European Parliament, the Nice bargains reviewed the seat allocation in the assembly to ensure appropriate representation of member states, while limiting the maximum number of seats to 732 (Galloway, 2001). Additionally, the Nice Treaty also included a provision for increased application of the codecision procedure, thus strengthening the legislative role of the European Parliament. Finally, a triple majority and the extended use of qualified majority voting in the Council of Ministers was adopted Felsenthal and Machover (2001); Wessels (2001).

Since the positions of the political leaders on these eight policies changed substantially over the course of the IGC negotiations, we can examine how the potential for cooperation at the European level was affected by changes at the domestic level. Settling the issue of voting rules in the Council, for instance, turned out to be highly contentious, as almost two-thirds of the EU15 political leaders favored the European Commission's proposal of a double majority in the beginning, which was, however, rejected later during the IGC summit bargains. Similarly, the majority support of keeping enhanced cooperation provisions as they were faded over time, and positions on applying qualified majority voting in the Council for some categorized issues shifted towards a case-by-case assessment. All this is to confirm that, consistent with previous accounts (Tsebelis and Yataganas, 2002; Moberg, 2002; Hosli and Machover, 2004; Cameron, 2004), there was notable *change* in leaders' positions on central policies, which they sought to address in the Nice IGC summit bargains.

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[4]The Presidency report is available at `http://europa.eu.int/comm/archives/igc2000/offdoc/`. Accessed on October 28, 2013.

3.1 Unit of Analysis and Dependent Variable

Because political leaders can change their positions separately for all identified key policies, our unit of analysis is a leader-policy; this leaves us with a total sample size of 120 *possible* positional changes for the EU15, across eight key policies. To determine the initial, pre-negotiation positions, we use information from all member states' official declarations that were submitted to the European Council prior to the Nice IGC. This information was publicly available from the Council Presidency's website and allows us to code, for each leader a policy position in $t = 0$. We checked these data for consistency and found that our coded policy positions perfectly match the data reported in Yataganas (2001). Importantly for our analysis, we also gathered data on $t = 1$ policy positions by conducting an expert survey, right *after* the Nice summit negotiations came to an end. Through a combination of online and mailed surveys, we were able to obtain one statement from each of the 15 member state government foreign ministries or ruling party positions on each of the eight institutional reform questions. These brief multiple choice questionnaires asked respondents to indicate their policy reform preferences and included the current status quo as one alternative for each institutional reform issue. Subsequent policy alternatives referred to those highlighted in the Presidency and pre-negotiation briefings.

[Figure 2 about here.]

Comparing policy positions over time confirms that changes in leaders' positions were not uncommon. As Figure 2 demonstrates, leaders revised their initial policy positions in about one third of our data. Of these 41 cases for which policy positions change, the vast majority of changes, i.e., 32 cases or about 78%, indicate a move towards what we refer to as "more cooperation." This capitalizes on the idea that leaders' policy positions are recorded along an ordinal, unidimensional policy space, where higher values typically denote stronger support in favor of European integration, or more delegation of power to supranational institutions, such as the European Commission and the European Parliament. To illustrate this point, consider the policy of qualified majority voting in the Council: With unanimity, coded as "0", and qualified majority, coded as "3" in our policy space, as polar cases of how to make decisions, higher values, indeed, characterize "more cooperative" decisions. Unanimity voting endows every member state with veto power, making gridlock likely, while qualified majority voting allows EU institutions to act swiftly and to find a collective

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solution to cooperation problems even in an enlarged EU. Since there is sufficient variation—as indicated by Figure 2—not only for studying whether positional change occurs at all, but also for exploring the direction of this change, the analysis of the Nice Treaty is particularly suitable for testing our theoretical model.

When disaggregating our dependent variable further, we find substantial differences in the variation across both leaders and policies. With a median of three changes per country, every political leader in our sample changed at least one position. While Danish and British leaders made only slight modifications to their initial positions, changing stances on just one policy, Finnish, Dutch and Italian leaders reversed their positions more substantially, with four and five changes, respectively. As for the direction of change, there are 2.13 changes on average per leader towards more cooperation, and all changes adopted by Austria (2 changes), Belgium (2 changes), France (2 changes), Sweden (3 changes), and the UK (1 change) seek to deepen European integration. No leader reversed its position towards less cooperation for more than one policy. This confirms that political leaders initially pursued more restrictive positions on key policies of the Nice Treaty.

Table 1 shows that there is also considerable variation across policies, ranging from a single change for a reform of the size of the European Commission to ten changes for the policy of modifying the composition of the European Commission. On average, we find 5.12 changes per policy, four of which are towards more cooperation. Even though the reform in the composition of the Commission was clearly an important policy, the political accountability of the Commission and the allocation rules for seats in the European Parliament were also highly contentious. Our data reveal that despite fewer absolute changes, the ratio of changes towards more cooperation relative to the ones with less cooperation are less balanced for these policies.

[Table 1 about here.]

For better visualization of all positional changes, Figure 3 plots, in a common policy space, for every policy and for every political leader, initial positions in $t = 0$, represented by gray triangles, along with final summit positions in $t = 1$, represented by black squares. Additionally, we also report where the status quo, prior to the Nice bargains, and the bargaining outcome of the Nice Treaty are located; these are indicated by the "SQ" and "Nice" labels in the various panels. Finally, to capture the direction of change, the small "+" and "−" signs at the right outer margins highlight whether a leader moved towards more or less cooperation. As argued above, this corresponds to shifts of policy positions to the right or the left along the policy space.

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[Figure 3 about here.]

The figure highlights three important findings. First, even though the bargaining outcomes agreed on in the Treaty of Nice are generally to the right of the status quo, there are only two policies (accountability of Commission and enhanced cooperation procedure) for which the right-most, "full cooperation" position was realized. Given the need for reform and the aspirations prior to the Nice IGC conference that an effective response to Eastern enlargement was within reach, the modest changes delegating power to the European level were found to be disappointing. The outcomes of the Nice Treaty thus fell far behind the high flying expectations for deeper European integration. The European Commission and the European Parliament were disappointed that the Nice Treaty failed to adopt many of their proposals for reform of the institutional structure or the introduction of new Community powers, such as the appointment of a European Public Prosecutor. The European Parliament threatened to pass a resolution against the Nice Treaty, and the German Minister for Foreign Affairs at the time, Joschka Fischer, made the community method of how policies are bargained at summit meetings responsible for the failure. As an immediate response, the political leaders of the EU15 declared already in December 2001, only ten months after signing the Nice Treaty, to establish the European Convention in order to prepare the agenda for continuing institutional reform of EU institutions.

Second, and as already foreshadowed in Table 1 above, how contested or stable a specific policy was varied significantly. While policies like European Commission size and legislative procedures in the European Parliament were relatively robust, all remaining policies saw at least one out of three leaders to change the initial position. Changes also seem to be more prevalent when there has been initial support for the status quo: About 42% of leader-policy positions changed when the initial position and the status quo coincided, as compared to only 27% when this was not the case; this result is statistically significant with $p = 0.081$ in a simple χ^2 test. Similarly, we obtain an even stronger finding for initial status quo support and positional change towards more cooperation, because all 18 cases for which the status quo and the initial position are identical shift to the right in the policy space, while only 60% of the positions change to the right when the status quo and the initial position diverge. This pattern is highly statistically significant with $p = 0.002$ in another χ^2 test.

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Finally, except for the policies on the size of the European Commission, the legislative procedures in the European Parliament, and the enhanced cooperation procedure, all remaining five policies see positional changes in *both* directions. This underscores the above observation that finding an agreement was by no means trivial, but bargaining was fierce and reverting to the status quo was not uncommon. Germany, for instance, even held a summit position on the composition of the European Commission that was more restrictive than both the status quo on this policy and Germany's initial position. As all nine changes towards less cooperation occur across different policies and different leaders, these data provide an excellent testing ground for our theoretical argument of how negative externalities and heterogeneity in leaders' positions affect cooperation at the EU level. To test this link empirically, our dependent variable simply measures whether a leader's position changes towards more or less cooperation. Accordingly, our dependent variable scores "1" when there is a shift to the right (32 out of 41 overall changes), while changes to less cooperative bargaining positions are coded zero (9 out of 41 overall changes); the right panel in Figure 2 visualizes the distribution of our dependent variable.

3.2   Main Explanatory Variables

Our model predicts that the likelihood for cooperation increases as countries suffer more negative externalities in case the cooperation problem remains unaddressed. To operationalize this, we rely on Schimmelfennig (2001, 49), who finds that "one group of [EU] member governments (the 'drivers') advocated an early and firm commitment to Eastern enlargement, whereas other member countries (the 'brakemen') were reticent and tried to put off the decision." Consistent with our argument about negative externalities, Schimmelfennig (2001) recognizes that member state preferences for deepening European integration closely align with geographical location: With the exception of the UK, which however experienced substantial labor market immigration from Eastern Europe, countries bordering the accession states were highly supportive of Eastern enlargement. This is why, in line with the "driver" and "brakemen" dichotomy, we code the Scandinavian member states, Austria, Germany, and the UK as suffering negative externalities from leaving the cooperation problem of EU institutional reform and Eastern enlargement unaddressed. Given these states' economic and labor market relations with the Central and Eastern European countries, this classification should not be too contentious.

For our second hypothesis, we create a simple measure of (spatial) preference heterogeneity: For each policy, we calculate the absolute value of the distance between each leader's position and the median position of the domestic voters on the respective policy from Eurobarometer polls. In our sample, leader positions and median positions match perfectly in 65% of the cases, while they deviate by one unit in about 30% of the times, and by two units in 5 cases. Given that the formal model's equilibrium condition hinges on the ratio of one country's policy preference, θ_i, *relative* to another country's preference, θ_{-i}, constructing a *relative* measure of preference heterogeneity for our statistical analysis seems more than appropriate. As our empirical results continue to hold even when we use a dummy coded heterogeneity variable which only measures whether a leader's position deviates from the median position of the domestic voters or not, we stack the deck against concerns about pushing the measurement of distances for our heterogeneity variable too far.

3.3   Control Variables

With strong expectations which we derived directly from our game-theoretic cooperation model above, we are sympathetic to keeping the statistical model parsimonious as well (Achen, 2002). Despite this, we add up to three additional control variables into our more comprehensive model specifications. First, we include a positional measure for where the status quo was before the Nice Treaty negotiations started. This variable accounts for the fact that achieving cooperation on policies for which cooperation has already been achieved in the past may either facilitate additional cooperation or may make further reform more difficult. No matter what the exact mechanism is, controlling for status quo position is essential.

Second, as delegating power to the European institutions is certainly contentious in home jurisdictions, more domestic veto players can impede change, making international cooperation harder to achieve (Tsebelis, 2011). To capture this dynamic, we add the number of veto points as defined in (Henisz, 2000) to some of our models.

Third, as institutions diffuse norms and values over time (Chayes and Chayes, 1993, 1995; Simmons, 2010), it is natural to believe that long-standing member states, such as the founding six, for instance, may be more likely to strengthen EU institutions and empower the European Commission and the European Parliament. For this reason, we include EU membership in number of years as our final control variable.

Finally, some of our model specifications include fixed effects to capture unobserved heterogeneity across the negotiated policies. As including policy fixed effects is challenging econometrically for model convergence given the variation in our data, we construct domain fixed effects where we categorize reform policies as to whether they relate to the European Commission (policies 1-3), the European Parliament (policies 4 and 5), the Council of Ministers (policies 6 and 7), or to the procedure of Enhanced Cooperation (policy 8). We use the latter as the baseline category, and our estimation results remain robust to the inclusion of domain fixed effects.

3.4 Econometric Models

For our empirical analysis, we estimate two types of econometric models. We begin by estimating standard probit models, where the dependent variable for leader i and policy j is a binary indicator for whether a leader changes his position towards more cooperation ($Y_{it} = 1$) or towards less cooperation ($Y_{it} = 0$). Notably, we run these models only on those 41 observations in our data set for which we observed positional change in the first place. We estimate the following model equation

$$Probit(Y_{ij}) = \alpha + \beta_1 \cdot Externality + \beta_2 \cdot Heterogeneity + \boldsymbol{\gamma}' \mathbf{X}_{ij} + \psi_k + \varepsilon_{ij}, \tag{5}$$

where $\mathbf{X}_{ij}$ denotes a vector of control variables, with associated coefficient estimates being given by vector $\boldsymbol{\gamma}'$, while α, ψ_k, and ε_{ij} denote the intercept, domain fixed effects for group k, and the error term.

To account for potential selection effects and to leverage all the information in our data, we also estimate bivariate probit selection models, for which the dependent variable is binary in both the selection and the outcome equation (Signorino, 2002; Reed, 2000). This leads to the following model equations

$$\text{Probit}(Y_{ij}) = \alpha + \beta_1 \cdot Externality + \beta_2 \cdot Heterogeneity + \boldsymbol{\gamma}' \mathbf{X}_{ij} + \psi_k + \varepsilon'_{ij} \quad \text{(Outcome equation)}$$

$$Probit(C_{ij}) = \delta + \theta_1 \cdot Externality + \theta_2 \cdot Heterogeneity + \boldsymbol{\kappa}' \mathbf{Z}_{ij} + \psi_k + \varepsilon''_{ij}, \quad \text{(Selection equation)}$$

with the important distinction being that the dependent variable, C_{ij}, for the selection equation codes whether there was positional change ($C_{ij} = 1$) or not ($C_{ij} = 0$), while all other variables and coefficients are as described above. We use the same set of covariates in both equations, except that, for purposes of model

identification, a leader's position prior to the negotiations over the Nice Treaty is included in the selection equation as an exclusion restriction. As discussed in great length in Sartori (2003), finding exogenous variables for model identification is often problematic (as in our case), and identification from distributional assumptions alone is equally undesirable. For that reason, we also re-estimate our probit selection models implementing the estimator that is proposed by Sartori (2003), which identifies the model from an identical error assumption. Since estimation results are qualitatively identical for both estimation techniques, we are sufficiently confident that our results are not driven by an arbitrary modeling choice.

No matter if we estimate standard probit models or probit selection models, coefficients β_1 and β_2 are the main quantities of interest, where the former should be positive and the latter is expected to be negative if our theoretical argument about changes towards more cooperation holds. Standard errors are clustered by country.

4   Empirical Findings

Table 2 presents estimation results. Models (1)-(4) report results from standard probit models for those observations for which a change in position was recorded; models are only differentiated by more comprehensive sets of control variables and the inclusion of fixed effects, respectively. Models (5)-(8), in turn, show coefficient estimates for probit selection models. Since we are primarily interested in the determinants of the direction of change, that is, whether *more* or *less* cooperation is achieved, rather than whether change occurs at all, we only report coefficients from the outcome equation.[5]

[Table 2 about here.]

The estimation results paint an unambiguous picture: There is some support for our first hypothesis, while empirical evidence for our second hypothesis is strong. Our first claim was that countries with strong negative externalities are more likely to find cooperation attractive. From our analysis, we find that there seems to be indeed a positive relationship between externalities and cooperation probability, as the coefficient is consistently positive across all eight models. Even though this finding should clearly not be

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[5]Note that our formal model makes predictions specifically about the likelihood for more or less cooperation, but not about the likelihood of positional change *per se*. This is reflected in our empirical analysis.

overstated because of a lack in statistical significance, substantive effects indicate that the first difference in predicted probabilities in the range of 8.5 to 13.5% points for member countries with and without negative externalities is by no means trivial. Yet again, these first differences are not statistically significant.

The findings for our second hypothesis clearly suggest: Higher heterogeneity in leaders' policy preferences makes international cooperation less likely, as predicted by our theoretical model. Not only are coefficient estimates negative across all models and highly statistically significant for seven out of eight specifications, but the substantive effects are also sizeable. For model (3), for instance, which predicts about 80% of the outcomes correctly, the predicted probability for a leader to move towards more cooperation reduces from a baseline probability of 80.3% to only 8.6% when we change our heterogeneity measure from the lowest to the highest value. Even a more modest change by only one unit, which is identical to the interquartile range, results in a drop in predicted cooperation probability by 40.4% points, both of which are highly statistically significant.

While none of the control variables apparently affect the probability for more international cooperation in a statistically significant way, except for the status quo measure in a single model, the empirical support for our theoretical model is strong. Being exposed to negative externalities at least weakly promotes international cooperation and institutional reform of EU decision-making bodies that prepares for Eastern enlargement. On the other hand, preference heterogeneity is shown to be a major roadblock for striking an even more cooperative agreement. These results are robust against a couple of different model specifications and hold in models with and without controlling for potential selection effects. In light of these empirical findings, political leaders risked bargaining failure by initially pursuing restrictive positions, but domestic audiences have made more change possible and thus avoided complete break down. Since deeper cooperation was announced by political leaders to be a priority prior to the Nice IGC, political leaders had to fear that voters hold their political leaders accountable to their earlier announcements and hence ensured that cooperation in the Nice Treaty was more effective than it would have without this electoral pressure.

5   Concluding Remarks

At a time when the largest enlargement in the history of the EU was immanently looming on the horizon, the long anticipated Nice Treaty fell short of many expectations. The treaty was supposed to help streamline

EU decision-making in the interest of efficiency and protection of domestic political and economic interests. Political leaders of the EU15 confirmed the necessity for pre-enlargement institutional reform and declared their enthusiasm for the pending IGC negotiations, but later some leaders seemed to change their tune and pull back in hesitancy. While the traditional two-level game approach to international bargaining would suggest that these leaders were restricted by their domestic constituencies' threat of non-ratification leading to a failure of international cooperation, our model suggests a more nuanced mechanism: Political leaders do not bargain under complete information. Political leaders may be constrained or, to the contrary, even further encouraged by their domestic constituencies once the bargains have started.

A key source for this uncertainty is that political leaders must transform their general willingness to cooperate into specific policies which shall overcome the existing or future externalities. In our case, the expected challenges of Eastern enlargement were translated into eight key policies, which intended to reform the institutional framework of the EU. Three of these policies aimed at changing the composition and working of the European Commission, which has the sole right to initiate policy proposals. Four policies proposed reforming the distribution of the veto power, two in the Council among the member countries and two regarding the relationship of the European Parliament and the Council. Finally, enhanced cooperation intended to facilitate changes of the status quo among a core group of the willing. Once these policies were identified, political leaders specified their policy positions, which reflected their individual calculations on how to reform agenda-setting and veto powers. Ignoring the approaching Eastern enlargement, political leaders pursued more restrictive positions as compared to their general willingness to change the status quo. Hence, our analysis demonstrates that there was a high risk of failure when the bargains on the Nice Treaty started.

However, with the approaching Eastern enlargement and their declarations about the need for reform, political leaders changed their initial policy positions and finally accepted more change than initially expressed. Following our understanding, political leaders updated their policy positions when domestic audiences were more in favor of changing the status quo. Whether political leaders were uncertain about the opinion of their voters or whether they feared audience costs in case of failure remains an open question. Importantly though, our analysis indicates that leaders overcame their initial reservations against policy change in line with the preferences of their voters. This suggests that international cooperation is strongly influenced by

how much a country might suffer from externalities when retaining the status quo and by how distant the proposed bargaining outcome lies from the policy preferences of the domestic audience, or median voter. The data on the Nice Treaty confirm the empirical implications of our model on bargaining under uncertainty, which can also be used for examining other dynamic processes, in which political leaders may learn about their payoffs from international cooperation over time.

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Mathematical Appendix: Best Responses

With two countries $i = A, B$, non-negative policies $q_i \geq 0$, and true states of the world over the unit interval $\theta_i \in \mathcal{U}[0, 1]$, let each leader i's utility U_i be defined by a linear absolute value function,

$$U_i = - \mid q_i - \theta_i \mid - m_i q_{-i} \quad \text{for } i = A, B \tag{6}$$

where q_{-i} captures the other country's policy level, which creates the externality. As discussed in the main text, $m_i \geq 0$, is a sensitivity parameter that scales how vulnerable country i is to the externality.

For finding best responses, let countries i distinguish between a *non-cooperative policy*, q_i^N, and a *cooperative policy*, q_i^C. The difference between the two policies is that the former policy maximizes individual utility without considering the externality that is created by policy q_i, while the latter policy maximizes collective utility, such that the negative externality is fully accounted for. Now, consider the two cases in turn.

Non-cooperative policy: Utility from equation (6) is maximized for any θ_i, whenever $q_i = \theta_i$ as this obviously maximizes the $- \mid q_i - \theta_i \mid$ term, while $-m_i q_{-i}$ is independent of q_i. A country's best response under non-cooperation must, thus, be given as $q_i^N = \theta_i$.

Cooperative policy: To derive the optimal cooperative policy, define collective utility as $W = U_A + U_B$, where

$$W = - \mid q_i - \theta_i \mid m_i q_{-i} - \mid q_{-i} - \theta_{-i} \mid - m_{-i} q_i. \tag{7}$$

With $\beta \equiv - \mid q_{-i} - \theta_{-i} \mid - m_i q_{-i}$ being defined as all expressions that are independent of q_i, collective utility can be re-written as

$$W = - \mid q_i - \theta_i \mid - m_{-i} q_i + \beta. \tag{8}$$

To maximize equation (8), it is easy to show that for $q_i \geq \theta_i$, each government i has incentives to chose the smallest possible policy as collective utility is decreasing in q_i. Thus, the optimal policy under these conditions is $q_i^C = \theta_i$. For $q_i \leq 0$, however, collective utility is given as $W = q_i(1 - m_{-i}) - \theta_i + \beta$. Collective utility is hence increasing in q_i as long as $m_{-i} \leq 1$, so that, then, $q_i^C = \theta_i$. Yet, whenever the sensitivity parameter in the other country is large enough, that is $m_{-i} > 1$, then collective utility W is decreasing in q_i, giving rise to an optimal policy $q_i^C = 0$ under cooperation. All in all, this gives rise to the following best response strategy for any country i:

$$q_i^C = \begin{cases} \theta_i & \text{if } m_{-i} \leq 1 \\ 0 & \text{if } m_{-i} > 1 \end{cases} \tag{9}$$

As the paper focuses on *policy change*, we assume throughout the main text that $m_i, m_{-i} > 1$. This

ensures that policy responses under non-cooperation, $q_i^N = \theta_i$, and cooperation, $q_i^C = 0$, are different and thus distinguishable from each other. Even though this limits the generality of the model to some extent, this restriction is meaningful as it centers the model's attention to the substantively most difficult cooperation problems, that is, cooperation problems that create sufficiently strong negative externalities.

Mathematical Appendix: Equilibrium Condition

Given the best responses above, a *self-enforcing* equilibrium with cooperative policies can only prevail if the utility under cooperation is higher than the utility under non-cooperation for *both* governments because a cooperative policy is always strictly dominated by the non-cooperative policy if the other country is not cooperating. The cooperation condition thus requires

$$U_i(q_i^C; q_{-i}^C) > U_i(q_i^N; q_{-i}^N) \quad \text{for } i = A, B. \tag{10}$$

By plugging best responses in utility functions and assuming that $m_i, m_{-i} > 1$, we obtain

$$- \mid 0 - \theta_i \mid -m_i \cdot 0 > - \mid \theta_i - \theta_i \mid -m_i \cdot \theta_{-i}, \tag{11}$$

which holds if and only if $\frac{\theta_i}{\theta_{-i}} < m_i$. By symmetry, the corresponding cooperation condition for the other country $-i$ is given as $\frac{1}{m_{-i}} < \frac{\theta_i}{\theta_{-i}}$. Putting these two together results in the following equilibrium condition

$$\frac{1}{m_{-i}} < \frac{\theta_i}{\theta_{-i}} < m_i \quad \text{for } i = A, B, \tag{12}$$

for which, if satisfied, an equilibrium with cooperative policies, $q_A^C = q_B^C = 0$, can be sustained. If this condition in equation (12) is not met, an equilibrium under non-cooperation prevails in which governments set policies $q_A^N = \theta_A$ and $q_B^N = \theta_B$. This characterizes the equilibrium in full.

Mathematical Appendix: Comparative Statics

The comparative statics with regard to the equilibrium condition in equation (12) are straightforward. As the upper threshold, m_i, is clearly increasing in m_i, while the lower threshold, $\frac{1}{m_{-i}}$, is clearly decreasing in m_{-i}, higher levels of sensitivity to the negative externality make cooperation more likely—in both cases is the interval $(\frac{1}{m_{-i}}, m_i)$ widening, for which cooperation can be sustained. This testifies to the logic of Hypothesis 1.

As to changes in the true states of the world, θ_i and θ_{-i}, which are interpretable as domestic preferences in light of our narrative, the more heterogenous these preferences become, the less likely can cooperative

policies be sustained in equilibrium. Note in particular, that with $m_i, m_{-i} > 1$, cooperation must be an equilibrium outcome when the true states of the world are identical, that is, if $\theta_i = \theta_{-i}$ holds. With highly homogenous domestic preferences across states, cooperation is feasible, but the more skewed these become, the less room for cooperative policies in equilibrium there is. This underpins Hypothesis 2.
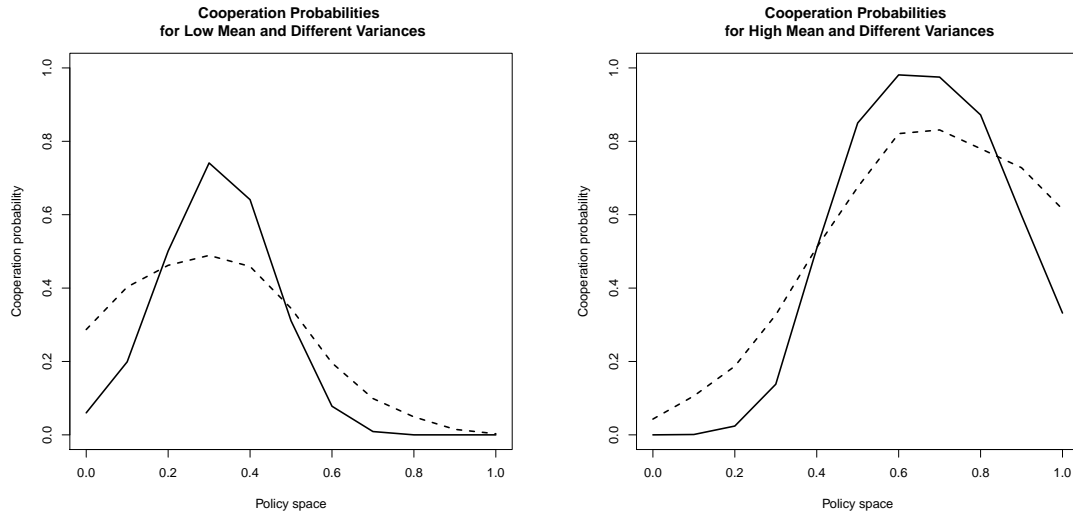
(a) Cooperation probabilities for $\theta_B = 0.3$.   (b) Cooperation probabilities for $\theta_B = 0.6$.

FIGURE 1: *Simulated cooperation probabilities for different means and variances. Simulations are based on $1,000$ draws for θ_A from a truncated normal distribution over the unit interval, where means are increased by increments of 0.1. Standard deviations are either low ($\sigma = 0.1$) or high ($\sigma = 0.2$), as indicated by the solid and dashed lines, respectively. Domestic preferences for country B are equal to $\theta_B = 0.3$ (left panel) or $\theta_B = 0.6$ (right panel), and sensitivity parameters are fixed at $m_A = m_B = \frac{3}{2}$.*

Distribution of Dependent Variables
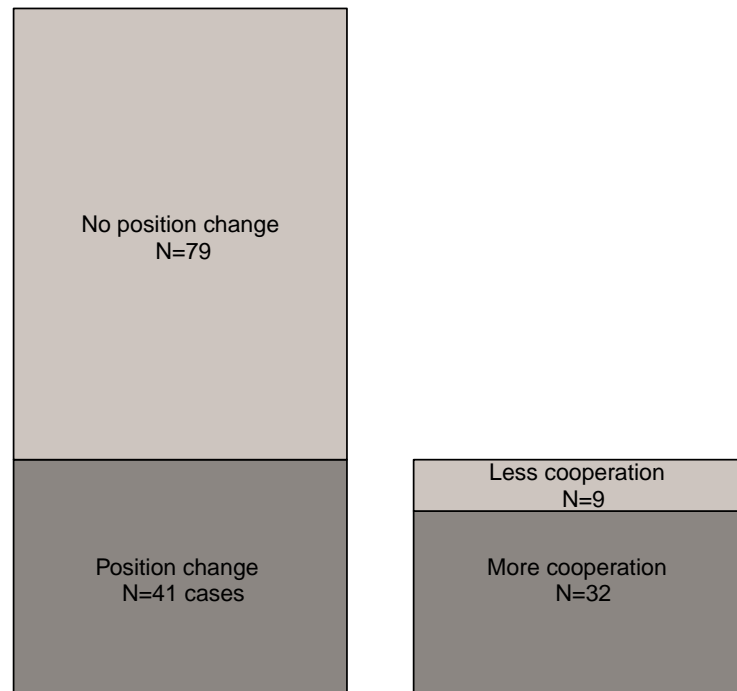
FIGURE 2: *Governmental position change and direction of change for the Treaty of Nice.*
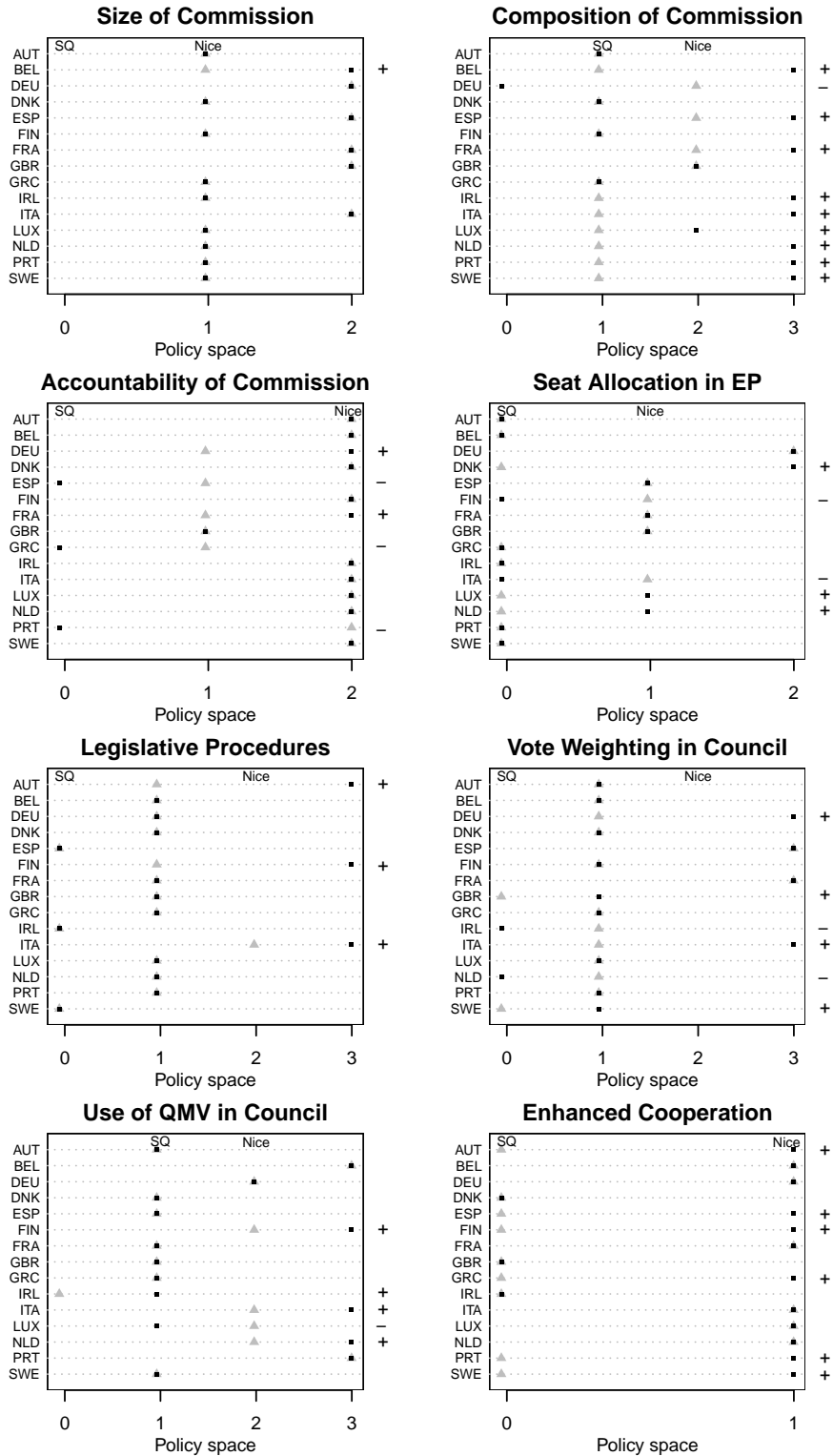
FIGURE 3: *Leaders' positional changes and direction of change, disaggregated by country and policy. Gray triangles denote initial positions in* $t = 0$*, while black squares denote the final summit positions in* $t = 1$*. The labels "SQ" and "Nice" indicate the status quo and the Nice bargaining outcomes, respectively. The small "+" and "−" signs at the right margins of each plot indicate whether position changes occurred towards a more or a less cooperative position.*

Position change by issue

#	Issue	Total changes		More cooperation		Less cooperation	
		Count	in %	Count	in %	Count	in %
1	Size of Commission	1	2.4%	1	3.1%	0	0.0%
2	Composition of Commission	10	24.4%	9	28.1%	1	11.1%
3	Accountability of Commission	5	12.2%	2	6.3%	3	33.3%
4	Seat allocation in EP	5	12.2%	3	9.4%	2	22.2%
5	Legislative procedures	3	7.3%	3	9.4%	0	0.0%
6	Vote Weighting in Council	6	14.6%	4	12.5%	2	22.2%
7	Use of QMV in Council	5	12.2%	4	12.5%	1	11.1%
8	Enhanced cooperation	6	14.6%	6	18.8%	0	0.0%
	Total	41		32		9	

TABLE 1: *Leaders' positional changes and direction of change, separately by policy.*

	Probit models				Probit selection models			
	(1) Model	(2) Model	(3) Model	(4) Model	(5) Model	(6) Model	(7) Model	(8) Model
Heterogeneity measure	-0.837*	-1.094**	-1.109***	-0.887**	-0.689	-0.832**	-0.809**	-0.735**
	(0.441)	(0.430)	(0.430)	(0.417)	(0.461)	(0.392)	(0.381)	(0.302)
Externality	0.483	0.638	0.688	0.738	0.374	0.434	0.467	0.477
	(0.314)	(0.391)	(0.442)	(0.508)	(0.286)	(0.318)	(0.363)	(0.472)
SQ		0.869	0.847	1.079*		0.423	0.367	0.658
		(0.593)	(0.578)	(0.655)		(0.485)	(0.445)	(0.464)
Veto points		0.092	0.083	0.212		0.100	0.082	0.150
		(0.356)	(0.348)	(0.358)		(0.329)	(0.328)	(0.310)
EU member (years)			0.004	0.013			0.004	0.010
			(0.011)	(0.013)			(0.011)	(0.014)
Domain fixed effects	No	No	No	Yes	No	No	No	Yes
Observations	41	41	41	41	120	120	120	120
Pseudo R^2	0.090	0.154	0.155	0.230				
Correct Predictions in %	78.05	80.49	80.49	78.05				
$\chi^2_{df=1}$ test statistic					2.453	7.197	6.995	69.943
p-value					0.117	0.007	0.008	0.000

Dependent Variable: Position change towards more cooperation.

For probit selection models, results are shown for the outcome equation only.

Standard errors in parentheses and clustered by country.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

TABLE 2: *Estimation results from standard probit models and probit selection models.*