Coalitional Bargaining and Duration in the EU legislative Process

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Abstract

The duration of the legislative process is one of the most important indicators of legislative productivity and gridlock. Focusing the Council of the European Union, we contend that endogenous coalition dynamics within the legislature largely determine efficiency in lawmaking. Our sequential model of legislative bargaining suggests that governments in the Council adopt legislation when they can form a decisive majority coalition with like-minded governments. When a compromise can only be struck by a policy dispersed majority, however, governments have incentives to delay legislation in the expectation of opportunities for better deals in the future. We examine shifts in majority coalitions across all government compositions of the Council from 2002 to 2009. Consistent with our theoretical expectations, our event history analysis shows that the probability of a bill to be adopted considerably decreases when governments are only able to form policy heterogeneous coalitions. We find, however, that as the time spent in negotiations increases, opportunity costs become important and legislation is adopted quickly.
Introduction

In democratic legislatures, representative lawmaking typically involves for legislative bills to be debated, amended and scrutinized by the core of the legislature in plenary sessions. Yet, legislative deliberation often leads to costly delays. The institutional and political conditions for gridlock and stalemate have regularly been addressed through the analysis of adopted legislation (Cox & McCubbins 2001, Edwards, Barrett & Peake 1997, Krutz 2001, Mayhew 1991, Tsebelis 2002). In recent years, the interest in the duration of legislative process as an alternative and more nuanced indicator of gridlock has increased considerably. The literature has commonly highlighted the role of constitutional and procedural rules in mediating the control of the time of the agenda and its effects on legislative productivity (Cox & McCubbins 2005, Golub 2007, Binder & Maltzman 2002, Cheibub & Limongi 2002, Diermeier & Feddersen 1998, Döring 1995, Heller 2001, Tsebelis & Money 1995). However, institutional system-wide variables do not succeed in capturing strategic behavior on the floor (Diermeier & Vlaicu 2011, Krehbiel 2004, Mayhew 1991). As a consequence, scholars have started to explore how coalitional dynamics in legislatures endogenously generates dynamics of swiftness and gridlock in lawmaking (Gailmard & Jenkins 2012, Maltzman & Shipan 2008, Becker & Saalfeld 2004, Martin & Vanberg 2004). Under which conditions coalitional behavior is likely to induce legislative delay? When, in contrast, will coalitions of legislators be able to accelerate the adoption of legislation?

In this article, we focus on the Council of the European Union to analyze, theoretically and empirically, how constant changes in the constellations of preferences of the legislature induce coalitions to strategically mediate the timing of the adoption of legislation. Lawmaking in the EU involves three main institutions: the European Commission, the Council of the European Union (henceforth, the Council), and the European Parliament (EP). In most decisions, the Council and the EP act as co-legislators. The Council is the legislative body composed by the governments of the 27 member states of the European Union\(^1\). Governments in the Council struck the key legislative bargains and, subsequently, pass them to the EP for amendment. Each time there is a domestic election bringing a new government in one of the EU member states,
there is a change in the composition of the Council. Elections across Europe are very common. They take place several times a year. This means that the life of a bill in the EU usually covers several changes in the government composition of the Council. These changes are likely to impact the bargaining context within the Council in a significant way. For instance, the last French presidential elections in April 2012, bringing to power the Socialist Party, prompted a new array of forces in the institution, distancing the position of the French Government from the conservative governments of Germany and the UK on key economic issues. Our view is that these preference shifts induce coalitional alliances in the Council that determine the acceleration or delay in the adoption of legislative bills.

Given the central position of the Council in the EU legislative process, it is natural that the political conflict within the institution has been the object of study of previous works on duration. Scholars have converged in finding that the increase of conflictuality within the Council slows down the legislative process (Drüner 2008, König 2007, Golub 2007, Schulz & König 2000). Yet, in spite of the consistency of this finding, it is clear that our knowledge of the relationship between political conflict and duration remains limited (Golub 2008). A first shortcoming of the existing literature concerns the adequate study of how conflict in the Council is affected by government changes across Europe. Golub was the first author to point out that the probability of adoption of legislation is profoundly affected by “state changes” (time-varying covariates) in the Council’s constellation of preferences occurring during the lifespan of legislative bills (Golub 2007). The effects of these changes, moreover, tend to wear off over time (Box-Steffensmeier & Zorn 2001, Golub & Steunenberg 2007, Zorn 2007). Yet, extant works have not provided adequate data on and codification of the most frequent state changes in the preference composition of the Council, namely, preference changes derived from government turnover (Golub 2008). More importantly, the study of strategic interactions in the EU decisional process has been largely overlooked. As Zorn suggests, there has been scant theoretical and empirical progress in understanding how shifts of preferences affect the dynamics of the decision-making process itself (Zorn 2007). Previous studies have typically relied on raw indicators of policy stability for the entire Council in order to explore the relationship between legislative behavior and duration, such as the absolute distance of the two
extreme member states in the Council at the moment of the introduction of bills (König 2007) or the presence of the eurosceptic government of Margaret Thatcher (Golub 2007, Golub & Steunenberg 2007). According to this traditional view, political conflict is exogenous to the decisional process. This view thus does not (and does not intend to) provide an account of the strategic incentives of legislators in making collective decisions. In particular, it does not account for the incentives to alter the prospects for policy change over time under qualified majority rules, which predominantly govern the Council decisional process. The lack of attention to the decisional process does not only raise theoretical issues, but it also means that existing empirical measures of the effect on duration of political conflict within the Council are liable to display critical inaccuracies.

This article studies legislative duration by analyzing the endogenous process of coalitional bargaining in the Council during the lifespan of legislative bills. We look at government turnover in EU member states during the negotiations of bills, and examine how the changes in the composition of the Council derived from turnover prompt coalitions of governments to adopt or delay legislation. We contend that, given the prospect of elections that modify the composition of the Council, governments evaluate the opportunities to form a majority decisive coalition in order to adopt a given bill. In this evaluation, governments compare the utility they obtain from a vote in a given composition of the Council with the utility they rationally expect to obtain from the formation of an alternative decisive coalition in future Council compositions. On the basis of this comparison, governments in decisive coalitions choose whether to adopt the bill immediately or to delay the adoption to the future. Specifically, we expect that when a given preference composition of the Council allows governments to form a policy-cohesive decisive coalition with like-minded governments, the opportunities of adopting an advantageous collective policy will give members of the coalition incentives to force a quick vote on the issue, so as to realize their payoffs immediately and save opportunity costs of delay. Conversely, when only a heterogeneous coalition with a large dispersion of preferences can form, the policy payoffs that members of a decisive coalition may obtain from an immediate vote are diluted. Therefore, we expect governments to delay the adoption of legislation under conditions of preference heterogeneity. Finally, we understand that as discussions on
issues lag for several periods of legislative bargaining, most governments in the Council will be willing to avoid serious risks of delay in the implementation of urgent EU policies. Accordingly, we hypothesize that the effect of coalition cohesiveness on accelerating (delaying) the adoption of legislation will wear off over time.

In sum, our central argument states that the control of the timing of the EU legislative agenda rests on the strategic role of decisive majority coalitions. And it is the level of policy cohesiveness of decisive coalitions which tips the control of the agenda towards accelerating or delaying the vote on legislative bills.

Our study improves on earlier work in two important ways. First, we delineate a positive theory of sequential legislative bargaining with random events that is able to represent behavioral rules legislators follow in order to control the timing of the adoption of legislation in the light of frequent shifts of preferences within the legislature. Secondly, we test the implication of our theoretical model by configuring an original dataset covering 130 successive preference compositions of the Council derived from government turnover for 1400 EU legislative acts adopted between 2002 and 2009. Taking up existing criticisms on the codification of time-varying covariates and non-proportionality, we provide a methodological strategy which allow us to statistically estimate the effects of coalitional behavior on the probability of adopting legislation, as well as the time dependence of these effects. Although we apply our perspective to the context of the EU, our findings are of general relevance for the study legislative contexts where electoral terms or other critical events are likely to affect coalitional dynamics and legislative productivity.

A Dynamic Model of Coalitional Bargaining in the Council of the European Union

We adopt a cooperative framework for the study of coalitional bargaining (see especially McKelvey, Ordeshook & Winer 1978, Schofield 2008, Sened 1996). We characterize decision-making in the Council as finite-period repeated committee weighted voting game over policy.
According to the EU legislative procedures, the European Commission has the prerogative to introduce EU legislation by presenting bills for adoption to the Council and the European Parliament. We are interested in the process by which Council votes to adopt a common position after the Commission has tabled a bill. We do not investigate further the amendments of the EP after the Council’s common position is adopted. Empirically, we consider the effect of amendments of the EP on legislative activity separately. Our focus is the bargaining in the Council in an environment in which critical events giving information about changes in the preference composition of the Council shape opportunities for coalitions of governments to mediate the timing of adoption of the Council’s common position. The representation of the dynamics of our model finds thus inspiration in models of “government termination” which introduce the relevance of critical events or shocks in determining the preferences of actors over outcomes over time (Diermeier & Feddersen 1998, Baron 1998). Our model differs from this research in that it focuses on the legislative process and adopts a cooperative approach to analyzing this process.

The Model

Decision-Making Structure

We begin building our model with the basic legal form of the game and the structure of legislator preferences. Let \( N = \{1, 2, \ldots \} \) be a committee voting legislature, such as the Council of European Union. Let \( C \subseteq N \) be any coalition of legislators, in the case considered here: any coalition of governments of the EU. Let \( v(C) \) be a characteristic function specifying the payoffs that the members of \( C \) can secure for themselves, regardless of the actions of other governments in the legislature. Any collective decision on policy in the Council needs to be made by a supermajority of governments. Let \( L \) be the collection of decisive or winning coalitions, so that \( L = \{ C \subseteq N | \sum_{i \in C} w_i \geq q \} \), where \( w \) denotes the voting weight of member governments. We finally specify that the game is proper, so that if \( C \in L \), then \( N \setminus C \notin L \). The Council votes a common position for a policy over a set of \( M = \{1, 2 \ldots m\} \) unidimensional issues in a Euclidean space \( \mathbb{R}^n \). For each issue, let \( X \subseteq \mathbb{R}^n \) be the real number segment.
line describing the set of feasible nonnegative alternative outcomes that governments confront among the larger set $M$. Utility over policy is not transferable. Therefore, the final outcome takes the form in which the winning coalition is assigned anything in $X$, while losing coalitions get nothing, so that the characteristic function of the game specifies that $L = \{C|v(C) = X\}$.

We crucially assume policy preferences of governments over policy outcomes in $X$ to be structurally induced in such a way that governments take into account the likelihood that other like-minded governments will support the outcome. We thus define like-mindedness between two actors in terms of the support for a common outcome. From the perspective of an individual government, another government is more like-minded the more policy gains this second government obtain by supporting a common outcome. Accordingly, in evaluating its utility from alternative outcomes, any government estimates the policy gains it obtains from the outcome and the policy gains other governments obtain by supporting the outcome. To capture this behavioral rationale, we define the preference of a government for a given policy outcome as the sum of the quadratic Euclidean distance between its ideal position and the policy outcome and the distance between each of the other governments’ position and the outcome, divided by the number of partners integrating the assembly or group in which the government participates. Formally, let $U$ be a smooth utility function representing the preference profile of all governments on $X$. Then, for any actor $i \in N$ and any outcome $x \in X$, there is a point $x_i \in \mathbb{R}^n$ such that

$$U_i(x) = k_i - \left( \frac{(w_i(x - x_i)^2 + \sum_{j \in N} w_j(x - x_j)^2)}{N} \right)$$

where $k_i$ is a constant term to guarantee nonnegative utilities, and $i \neq j$. The first term in the numerator of the main expression equals the policy gains that government $i$ estimates from the policy outcome, these gains being larger the less the Euclidian distance of the weighted ideal position of the government to the outcome, where the weights are the voting power of the government. Thus, with equal preferences, Germany, with 29 votes in the Council, will have more voting weight and
obtain more policy gains than Malta, which has only 3 constitutional votes assigned. The second term in the numerator equals the policy gains that each of the other governments, \( j \), claim in exchange for implementing this outcome, where the gains are also weighted by the partners’ voting power. The assumption that a government will be willing to give in to policy demands of other legislators follows naturally from the fact that only governments who are represented in the winning coalition obtain a payoff from the game. Thus, if a government were to choose some attractive position close to its ideal point as the policy outcome but this position does not give sufficient policy gains to other governments in the decisive group, the derived increase of disutility for these other legislators will make them choose a different partner, and a fortiori, a different policy outcome.

Finally, the division by the total number of governments in the group corrects for the effect that groups of more actors will automatically give less utility to the government \( i \), as it will need to make more policy concessions even if other partners are close in the policy space.

We develop this scheme further by incorporating the dynamic feature that exogenous events occur while the Council is negotiating, giving information to governments about imminent electoral processes occurring in one of the member states in the Council. As a result of the prospect of elections in one of the member states of the EU, the initial set of feasible outcomes that the Council confronts is thus enlarged to the policy outcomes that are expected to occur with the change in the composition of preferences of the Council in the future. We impose the restriction that government interests for policy outcomes are sincere and time-separable. Any government thus holds a single ideal point, \( x_i \), with reference to both current and expected outcomes in \( X \). This restriction is justified in the context in which change in the distribution of preferences of the legislature in the future is due to the substitution of legislators in the assembly, given government turnover. Because expected policy outcomes can only emerge because of the incorporation of different governments, the possibility of multiple-trial negotiations is excluded.

To represent this dynamic feature of the committee voting game, let the game have a finite number of discrete periods, \( T = \{ t, t + 1, \ldots, 1 - t \} \). Assume that when the game starts at period
t, governments have complete information about the status quo alternative, \( x^0 \in X \), and about the distribution of preferences of other governments in the current electoral composition of the Council. Assume further that, in the same period, governments receive information about the political climate regarding imminent elections and, based on this information, form rational expectations about the changes in preference configuration of the legislature if the bargaining continues to a next period. Let \( X_t \subset X \) be the subset of feasible policy alternatives in the Council that governments know with certainty at time \( t \), so that any policy \( x^t \in X_t \). Let \( X_{t+1}(s_{t+1}) \subset X \) be the choice subset from which governments rationally expect policies to be drawn at \( t+1 \), where there are \( S_{t+1} \) states of nature, \( s_{t+1} = 1, \ldots, S_{t+1} \), at time \( t+1 \), given the information governments have at time \( t \) about imminent elections, with an associated probability \( \pi(s_{t+1}) \) of observing some state \( s_{t+1} \). Correspondingly, any \( x^{t+1} \in X_{t+1}(s_{t+1}) \). If a policy proposal \( x^t \) is accepted for a vote, then the vote takes place, the common position is adopted and the game ends. Note that a proposal for a common position might be to vote to retain the status quo policy, \( x^t = x^0 \), and if accepted, it becomes the committee choice. If the proposal for a vote is rejected, the vote is postponed. Then, the status quo remains as a provisional outcome and bargaining moves to a new period \( t+1 \) after the domestic elections bring a new Council legislature. The sequence repeats until such a period as the committee accepts to vote a proposal. Figure 1 shows the sequence of the game.

In considering the government preferences for any proposal presented in the current period \( t \), it should be noted that the status quo alternative may be the preferred option of some governments, while it may be a disastrous option for others. Let us fix for convenience the status quo alternative at the left of any other alternative in the one-dimensional policy space, \( x^0 < x^{t6} \). The utility that any government \( i \) derives from first period policy proposal, \( x^t \), thus depends on the distance between its preference for the proposal and the preference it has for \( x^0 \in X \). Given the preference profile \( U \), we define:
\[ EU_i(x^t) = k_i - \left( \frac{w_i(x^t - x_i)^2 + \sum_{j \in N} w_j(x^t - x_j)^2}{N} \right) \]

\[ -k_i = \left( \frac{w_i(x^0 - x_i)^2 + \sum_{j \in N} w_j(x^0 - x_j)^2}{N} \right) \]

Under the hypothesis of rational expectations, governments believe that if a vote is postponed they will reap the payoffs of a new proposal to be presented in the next period. Then, i’s expected utility for any proposal \( x^{t+1} \) equals:

\[
EU_i(x^{t+1}) = \delta \sum_{s_{t+1}} \left[ k_i - \left( \frac{w_i(x^{t+1}(s_{t+1}) - x_i)^2 + \sum_{j \in N} w_j(x^{t+1}(s_{t+1}) - x_j)^2}{N} \right) \right] \pi(s_{t+1})
\]

where \( \delta \in (0, 1) \) is a constant discount factor, which we assume to be common to all governments, \( \delta_i = \delta \), for all \( i \in N \). The incentives of a government for voting for a proposal at time \( t \) depend on the difference between \( EU_i(x^t) \) and \( EU_i(x^{t+1}) \). That is, i’s expected utility for voting in the first period, \( EU_i(V^t) \) is the following:
A government $i$’s expected payoffs from voting thus is given by two temporal terms. The first term equals the payoffs that government $i$ estimates from the proposal presented in the current period, $x^t$. The second term indicates $i$’s payoffs derived from the sum of maintaining the status quo $x^0$ and $i$’s value of a policy proposal $x^{t+1}$ that $i$ rationally expects to be introduced on the floor if a new electoral process introduces change preferences in the legislature. Finally, the common discount factor $\delta$ reflects how the Council as a collective body is pressured by the opportunity costs of leaving other issues on the legislative agenda unaddressed. When the future is very important relative to the present, governments will be patient. At the extreme, if $\delta = 1$, governments will not care about opportunity costs. They will be indifferent to whether the decision is taken sooner or later and their decision for voting or postponement will only be guided by policy considerations. To the contrary, as the future becomes less important, $1 < \delta$, governments will be more impatient to reach an agreement. Thus, although the set policies in each expected new period may be more or less rewarding for a government in compared to current policies, the Council legislature generally discounts the value of time spent from delaying the decision on adoption of legislation.

**Coalitional Bargaining**

We solve the model by finding the conditions of existence of a proposal for a vote that the Council supports. Alternatively, we specify when these conditions are not met, so that the Council decides
in favor postponing the vote on a legislative issue. How does the Council decide? Following McKelvey et al. conception of competition among coalitions, we represent the Council’s choice for a vote (or the lack of it) as a process in which potential winning coalitions compete in presenting proposals for a policy compromise to individual governments in order to gain sufficient support for a vote (McKelvey, Ordeshook & Winer 1978, see also Sened 1996). Before we state the conditions for voting or postponement, we introduce three definitions and two lemmas that set up the general framework of a competition among coalitions in the simple voting game we are describing:

**Definition 1** A coalitional proposal of $C \subseteq N$ is an ordered pair $(x, C)$ such that $x \in v(C)$

**Definition 2** For any two distinct $(x, C)$ and $(x', C') \in X, C \neq C'$.

We have first defined a coalitional proposal as a policy point of a coalition that can gather the sufficient number of votes to win. The second definition states the requirement that each coalition can present exactly one proposal. Otherwise, the scheme of competition among coalitions would be absent. To see how coalitional proposals are selected in the present model, we only need to compare the utility functions of governments for potential proposals of a given winning coalition. Our model of preferences hypothesizes that governments evaluate their utility from a given policy outcome based on considerations of both their policy gains from the outcome and the policy gains they will need to concede other governments in order to see this outcome accepted. Given these motivations, a policy proposal resulting from a bargaining that maximizes the balance between their own and others’ policy gains for all actors in the coalition will be selected by the members of the coalition in favor of alternative proposals. The following lemma formalizes this statement:

**Lemma 1** Given the utility profile $U$, actors in a winning coalition will select as the coalitional proposal the proposal that optimizes the weighed sum of the utility of all members of the coalition:
\[(x, C) = \arg\max_{x \in X} \sum_{i \in C} k_i - \left( \frac{w_i(x-x_i)^2 + \sum_{j \in N} w_j(x-x_j)^2}{C} \right), \text{ for any } C \equiv v(C) \]

Note that Lemma 1 states that any government will obtain a greater utility the closer all the legislators in the decisive group or coalition are to the *policy center* of the coalition. In other words, the coalition bringing the most satisfactory policy proposal to its members will be the *most policy cohesive coalition that may form*. Naturally, this coalition will also be minimum winning.

We turn now to define the conditions of dominance in the competition among coalitions. The critical social choice in a competition among coalitions rests on the *pivotal* or *critical* members between coalitions, that is, the actors who are in the intersection of two or more potential winning coalitions. As long as pivotal members have diverging preferences for the proposals of winning coalitions, no proposal will dominate the others and the social choice will be unstable. Given the application of a decision rule, it follows that a coalitional proposal can be selected as a stable outcome if and only if it is *undominated* by any other proposal in the set of feasible outcomes.

**Definition 3** For any two policy proposals \((x, C)\) and \((x', C')\), \((x, C)\) is undominated by \((x', C')\) if it is not the case that \(EU(x') \geq_i EU(x)\) for all \(i \in C \cap C'\).

Clearly, by Lemma 1, any government who is to choose between the proposals of two different winning coalitions will also prefer the one that maximizes its utility. This leads us to a critical statement of dominance in our game. A coalitional proposal offered by a minimum winning coalition more policy-cohesive than alternative coalitions will always give more utility to all its pivotal members than any other proposal and, therefore, will be undominated in the game:

**Lemma 2** For two policy proposals \((x, C)\) and \((x', C')\), \((x, C)\) is undominated by \((x', C')\), if, given the preference profile \(U\) and \(x^0 < x, x'\), \(C\) is more policy-cohesive than \(C'\), for all \(i \in C \cap C'\).
Thus, the structure of preferences of actors induces the collective choice falling on policy proposals offered by decisive coalitions bringing together the group of most like-minded legislators in the policy space.

We are now in a position to present our results regarding the selection of a voting proposal. When decisions for voting are guided by expectations about the future, we need to consider the time preferences of legislators. Policy considerations will be thus compounded by incentives to save opportunity costs of leaving other issues on the agenda unaddressed. The incentive to save opportunity costs is captured by the discount factor parameter $\delta$. The relationship between policy and time preferences generates two possible and exhaustive equilibriums outcomes. We present these outcomes and implications of these outcomes in terms of the utility of the decisive members of the Council for a vote.

**Proposition 1** A voting equilibrium exists if, given the preference profile $U$, there is a set of proposals for a vote in the period $t$ presented by decisive coalitions which are sufficiently policy-cohesive so as to give more or equal payoffs to their members than the payoffs given by the sum of maintaining the status quo and the discounted value of any other proposal expected to be presented by a coalition in the period $t + 1$. Therefore, the set of proposals accepted for a vote will be undominated by any other proposal in $X$. Let $V^* \subseteq X$ denote the set of proposals accepted for a vote at time $t$. Then,

$V^* = \{(x^t, C) \in X^t \subset X | \text{ for no } (x^{t+1}, C') \in X^{(t+1)} \subset X, \text{ } EU(x^{t+1}) >_i EU(x^t) \text{, for all } i \in v(C)\}$.

Then,

$V^* \neq \emptyset$. 

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Proposition 1 is a standard definition of the core. It differs only in the nonstandard definition of voting proposals, as induced by the utility functions of like-minded legislators\(^9\). The conditions of existence of this equilibrium indicate that policy gains from proposals for a vote at the current period will induce governments in the decisive coalition to save the opportunity costs of delay expected to accrue from any proposal presented by any other coalition in the next period. The existence of a non-empty core for of voting proposals implies that the utility of the decisive group for a vote is positive:

\[ EU_i(V^t) \geq 0 \text{ for all } i \in v(C) \]

The next proposition establishes the analytical opposite of the voting equilibrium, that is, the conditions for the postponement of a vote on the issue.

**Proposition 2** A delay equilibrium exists if, given the preference profile \( U \), there is not a set of proposals for a vote in the period \( t \) presented by decisive coalitions which are sufficiently policy-cohesive so as to give the at least the same payoffs to their members as the sum of payoffs given by maintaining the status quo and the discounted value of any other proposal expected to be presented by a coalition in the period \( t + 1 \). Then, the set of proposals accepted for a vote, \( V^* \subseteq X \), will be empty:

\[ V^* = \emptyset. \]

Clearly, the postponement equilibrium is based on the rational expectation that future decisive coalitions will offer policy gains that offset the costs of waiting to adopting a common position. Because of these expectations, the utility from a vote in the current period for any member in the Council is then strictly negative:
Implications of the model

Our coalitional model lends two testable implications in regard to legislative delay in the EU. We first expect that electoral compositions of the Council in which heterogeneous decisive coalitions form will induce delays in the passage of legislation. The second implication states that, as time is spent in negotiations, the impatience of legislators to reach an agreement will increase. Therefore, the effects of coalition heterogeneity on legislative delay should wear off.

Our two expectations are presented in the voting equilibriums of figure 2. On the left side, we portray the scenario in which governments are assumed to be absolutely patient (δ = 1), so that they care only about policy. This scenario illustrates our first expectation. The “voting zone” includes decisive coalitions presenting a proposal in the period \( t \) who are more policy-cohesive (less heterogeneous) than coalitions that are expected to form in the period \( t + 1 \). This is the case of the coalition \( C \) in the figure, presenting the proposal \( (x^t, C') \). Conversely, the “delay zone” includes coalitions presenting a proposal for a vote that are more heterogeneous than those to be expected to form in the future. In the figure, the delay zone includes the coalition \( C'' \) formed in the first period and presenting a proposal \( (x^t, C'') \). This coalition is more heterogeneous than the expected future coalition \( C' \) presenting the proposal \( (x^{t+1}, C') \). In practice, the anticipation of such future proposals implies that governments will postpone the decision by not forming any coalition at all in the current period. In this scenario, the expectation that current coalitions are more policy-cohesive than coalitions expected to form in the next round of bargaining is necessary to induce legislators to vote immediately. Simply put, policy incentives guide completely the decision, so that only a cohesive decisive coalition will make them better off with regard to waiting.
In the right side of the figure, we illustrate our second expectation, the scenario in which impatience plays a role, ($\delta < 1$). As governments become impatient, opportunity costs of delay become relevant in making a decision. Because governments are impatient, their considerations for policy gains will be relatively offset by the willingness to pass a decision soon. Because the policy payoffs in expected future coalitions are discounted with time, the required cohesiveness of coalitions to pass a proposal for a vote in the current period decreases. We can see in the figure that coalition $C$ is more homogeneous than future coalitions $C'$. However, because of the weight of the discount factor, both $C$ and $C''$ and are in the voting zone. Governments are thus expected to be more likely to accept largely inclusive or universalistic agreements as the pressure of leaving other issues on the agenda unaddressed increases. Since impatience will increase with any new round of bargaining, the capacity of heterogeneous coalitions to delay the adoption of a bill will wane over time.

[Figure 2 about here.]

**Data and methods**

This section tests the empirical implications of our theoretical model. We use information on EU legislative bills collected by the Observatory of European Institutions (OEI)\textsuperscript{10}, which systematizes data from CELEX, Prelex, Oeil, and the Council Minutes for all legislative acts adopted by the Council and the European Parliament between January 2002 and December 2008.\textsuperscript{11} We are interested in understanding how the dynamics of coalitional behavior in the Council determine the timing of legislation. In order to explore these dynamics, we merge the OEI data on legislative bills with data on positions of national cabinet governments obtained from the Comparative Manifestos Project dataset (Klingemann, Volkens, Bara, Budge, McDonald et al. 2006). Our dataset represents a first systematic effort to consider the importance of government turnover in the study of the duration of legislative procedures. Previous studies have usually codified the positions of
the member states of the EU at the time of initiation of legislation (cf. Drüner 2008, König 2007, Franchino 2007). Instead, our attention to government turnovers allows us to explore state-changes in the preference composition of the Council in the course of the negotiation of legislative bills, not just at the beginning (or the end) of the negotiations. We thus take into account positions for every domestic election that changes the government composition of the Council. Our analysis codes each new composition of the Council as a separate observation period and predicts the likelihood of any bill being adopted for each Council composition during the lifespan of a bill. Provided that there are 27 member states, elections, and thus potential changes in the Council, are frequent. Moreover, the great majority of European governments hardly ever reach the end of the electoral term. As a consequence, for the period under study, we count no less than 108 different Council compositions. As Council compositions are codified as separate periods in the negotiation of each legislative case, the full data set consists of 16000 period observations for a total of 1390 legislative acts.

Our dependent variable, ie. the duration of the legislative process, is coded continuously as the number of days that bills spend from its introduction by the Commission to its adoption. EU treaty provisions on legislative procedures for the period under study (articles 251 and 252 of the Treaty establishing the European Community) specify maximum periods of time within which the EP must present amendments and the Council to accept or reject them. However, there is no fixed limit for the Council to adopt its first common position once a bill by the Commission has been tabled. Therefore, our dependent variable can in theory take any value. Contrast this feature with most national systems, where the legislature clears its agenda at the end of term, so that the lifespan of a bill cannot exceed an electoral cycle (but see Döring 1995). In practice, our data shows a large variation in the length of the EU legislative process, ranging from a minimum of one day to more than 14 years or 5362 days for the longest bill. The average length of the period from the proposal to the adoption of a bill is 442 days.
Measuring Coalition heterogeneity

Our key covariate of interest is the heterogeneity of winning or decisive coalitions that results from bargaining in the Council. This covariate operationalizes our theoretical expectation that only the decisive group of legislators formally able to impose a decision in the legislature should influence the timing of the legislative agenda. To offer a comparative perspective, consider the context of a national legislature. Here we would identify the decisive group as the majority government, whether composed by a single party or a coalition of parties (Cox & McCubbins 2005, Martin & Vanberg 2004, Warwick 1996). In the context of the EU Council, this group is embodied by the decisive coalition of member governments gathering a qualified majority of votes. And, in contrast to most national legislatures, this majority may vary in its composition from one bill to another.

We argue that the length of the EU legislative process will mainly depend on the endogenous coalitional bargaining in the Council. This is not to say that the other factors do not matter, but that this one accounts for the greatest amount of legislative delay. Our view is that delay will be determined by the possibility to form more or less policy cohesive decisive coalitions in the bargaining process. When the specific context allows only for the formation of a rather heterogeneous decisive coalition, governments in the coalition rationally expect that adoption of legislation in these periods will dilute potential policy gains. They will hence delay adoption to future periods. Conversely, higher rates of adoption are to be expected in periods of bargaining in which more policy-cohesive decisive coalitions form.

We took the following steps to measure the heterogeneity of decisive coalitions. First, we classified every change in the composition of the Council as a new bargaining period in the Council. For each period, we calculated all the Minimum Winning Coalitions (MWC) that could form, using the Banzhaf Voting Power Index to calculate government voting weights. We adjusted the computation of MWCs according to the constitutional changes in the Council decisional quota and the number of actors for every EU enlargement covered in our study. The voting power weights required to form MWCs are thus adjusted for three distinctive periods: the EU with 15 states (January 2002-May 2004), the EU-25 (May 2004-January 2007), and the EU-27 (January 2007-December
Having identified the MWCs in every Council composition, we recorded the positions of governments in each coalition for the classical left-right and for the pro- and anti-EU stances of parties, as coded by the experts within the Comparative Manifestoes Project. For each conflict dimension, each cabinet is assigned a weighted mean position. Recall from Lemma 2 of the theoretical model that coalition policy-cohesiveness or heterogeneity is the result of legislative behavior that brings together most like-minded legislators around the policy center of a decisive coalition in any given bargaining period. Correspondingly, once we recorded the government positions, we computed the standard deviation of every possible MWC that could form in each given Council composition, and identified the MWC with the smallest standard deviation as the unique decisive coalition in each of the Council compositions. Our measure of heterogeneity is then a re-scaling of the prediction of the endogenous bargaining process of the theoretical model, and not a measure derived from to the initial positions of actors prior to bargaining. For any given Council composition, the lowest standard deviation of all possible MWCs measures the \textit{c-heterogeneity} of this particular Council composition or bargaining period.

The covariate \textit{c-heterogeneity} thus captures precisely the degree of policy conflict within the predicted decisive coalition in any given period of composition of the Council. We assume that the value of this covariate should be a good predictor of whether there is going to be a vote or whether the vote will be postponed. The covariate remains constant for each period. For each value, the covariate takes the form of a positive integer corresponding to the measured coalition heterogeneity in the observed interval. The relation between \textit{c-heterogeneity} and the likelihood of adoption of legislation should be negative. Note that, according to our theoretical assumptions, the occurrence of dispersed or heterogeneous coalitions is also likely to make the status quo a stable policy, hence inducing postponement of decisions. Thus, although we cannot directly locate the status quo empirically, we should be able to trace its effects by measuring coalition heterogeneity.

To isolate of the effect of decisive coalitions, we control for the general ideological range of the Council with a covariate called \textit{polarization}. Classical polarization measures take the abso-
lute difference between the initial positions of the two most extreme governments in the Council policy space (see König 2007). Values of polarization provide a measure of the conflict among governments between turnovers in the absence of any coalitional bargaining. We expect this to have a negative impact, like our heterogeneity measure, but expect the latter to have more explanatory value. Figure 3 shows that there is no observational equivalence between the two covariate measures (SD for coalitions and Range).

[Figure 3 about here.]

The hypothesis underpinning Council polarization is that extreme veto players protecting “vital interests” are likely to postpone the outcome of legislative negotiations, irrespective of the decision rule (König 2007, Golub 2007). Accordingly, we should expect polarization to be negatively related to the likelihood of adoption of legislation. However, because we hypothesize that decisive majorities in the Council are determinant in the legislative process, we expect that the timing of the legislative process will be affected more by c-heterogeneity and less by polarization.

We include several additional control variables that we expect to influence the relationship between our main variables. First, legislation is likely to experience delay in those legislatures where institutional rules allow considerable parliamentary scrutiny through amendment prerogatives and bicameral control (Cox & McCubbins 2005, Döring 1995, Martin & Vanberg 2004, Tsebelis & Money 1995). In line with previous analyses (Golub 2007), we estimate the effects of the involvement of the EP in the legislative process by classifying bills by the type of EU legislative procedure employed for their adoption. Under the “consultation procedure”, the EP has a limited role. The procedure just requires the approval of a Commission bill by the Council by QMV. In contrast, under the “co-decision procedure”, renamed in Lisbon the “Ordinary Legislative Procedure” (Article 294 TFEU), the EP can amend the common position of the Council in two readings of the procedure. If the Council rejects the amendments of the EP in the second reading, a Conciliation Committee must adopt a common final decision with Qualified Majority of the Council and Simple Majority in the EP. We construct a dummy covariate for procedures: Co-decision takes the value 1 for bills where co-decision applies and zero otherwise. The use of co-decision increases
parliamentary involvement and should delay the adoption of legislation. Second, we consider the number of readings in co-decision. Obviously, this covariate is partly endogenous and related to the intra-institutional level of conflict. It however adds information about the administrative transaction costs that should also delay the adoption of legislation. Our covariate *additional readings* is coded zero for one reading, and one otherwise. Finally, we expect the importance of *pending* legislation to play a role. Pending legislation should create pressure in favor of adoption, as EU institutions want to avoid to great backlog in lawmaking. As a consequence, we expect this variable, ceteris paribus, to have a positive effect on adoption.

**Analysis and Results**

We use a Cox regression to estimate our model. For all the periods during which a law has not yet been adopted, the law is considered to be “at risk” of adoption. The probability of adoption is governed by a baseline hazard rate, which is modified over time as a function of covariates. It is critical to our theory that variation in time-to-adoption is affected by the prospect of government turnovers occurring during the lifetime of bills. Accordingly, we extend the Cox model to incorporate “state changes”. The hazard rate is then a step function of time, with different values of the covariates through successive intervals between the entry time to the adoption time. Thus, for two covariate vectors, one including constant covariates, $X_1$, and other covariates varying over time, $X_2(t)$, the hazard for a given observation at time $t$ is

$$h(t) = h_0(t)e^{X_1\beta_1 + X_2(t)\beta_2}$$

where $h_0$ is the unparametrized baseline hazard rate, and $\beta_1$ and $\beta_2$ the associated coefficients of the covariates.

We find support for both expectations. Coalitional bargaining induced by changes in the elec-
toral composition of the Council significantly impacts the delay or acceleration in the adoption of legislation. Also, the effect of coalition formation wears off as legislative negotiations last for several periods of bargaining. Table 2 presents the main results. The likelihood-ratio, Wald, and score chi-square statistics tests are in agreement. For the clarity of interpretation, we report the effects as hazard ratios. Values greater than one indicate an increase in the hazard of adoption of legislation, while values below one indicate a decrease in the hazard, that is, a larger delay before adoption. Model 1 shows first results.

These results have to be reexamined, though. Box-Steffensmeier and Zorn have pointed to the potential danger of using survival models based on the proportional-hazards assumption when studying politics (Box-Steffensmeier & Zorn 2001), as this assumes that the effect of an independent variable is constant over time. Yet, as the authors argue (also see Martin 2004, Golub 2008), this assumption is hardly ever questioned or confirmed. A medical treatment’s effect may weaken after a few months; a military alliance be very strong in its early days and encounter increasing tensions after a few years. In sum, the time-dependency of specific covariates may make the results of Cox models dubious. Golub (2007) has rightly argued that this problem should be taken into account when studying the duration of legislative procedures in the context of the EU. Conforming to these discussions, we resort to standard non-proportionality tests (Therneau & Grambsch 2000, Box-Steffensmeier & Jones 2004)\(^{13}\). Table 1 presents the results of these tests. The column rho is the Pearson product-moment correlation between the scaled Schoenfeld residuals and the natural log of time for each covariate. The last row contains the global test for all the interactions tested at once. A p-value less than 0.05 indicates a violation of the proportionality assumption.

[Table 1 about here.]

The tests reveal violations for three different variables: the left-right coalition heterogeneity (lr.sd), left-right polarization (lr.polar), and pending. For all of those variables effects are not proportional over time. In order to uphold the proportionality assumption, we interact the problematic
covariates with the natural log of time, following standard procedures in the area of survival analysis (Box-Steffensmeier & Zorn 2001). Model 2 in table 2 presents estimations with corrected variables.

The parameter estimates change between models 1 and 2, but do not change signs or intensity. For convenience, table 3 presents the effect of a one-standard-deviation increase on the hazard rate, as calculated from the parameter estimates of model 2. The results show strong support for our first hypothesis. Changes in coalition heterogeneity across successive compositions of the Council are a consistent and significant predictor of the adoption of legislation, and in the expected direction. More precisely, we find that, for the right-left dimension of conflict, a one-standard-deviation increase in \(c\)-heterogeneity in electoral compositions of the Council is linked to an 80 per cent decrease in the risk of adopting any given piece of legislation for any given period. The effect of EU-related \(c\)-heterogeneity is even stronger, with an increase of about 90 percent.

The effect of coalitional behavior is robust and persists even after controlling for other potential factors. The effects these other factors prove significant but are of less magnitude than those of coalition heterogeneity. The increase of the general conflict in the Council, polarization, has, as expected, a negative impact on adoption. A one standard deviation increase in the polarization in the Council leads to a 49 per cent decrease of the hazards of adoption for the left-right dimension, and to a 43 per cent decrease for the EU dimension. The superior predictive power of the \(c\)-heterogeneity measure over the measure for polarization is indicative of the predominance of a coalitional bargaining mechanism in the Council. In scenarios of “delay equilibrium”, the effects of polarization are likely to be cumulative to those of high levels of coalition heterogeneity. This is because members of a dispersed coalition who decide to postpone a decision in a given electoral period do not need to make any coalition at all. However, the relatively minor effect of polarization indicates that when cohesive decisive cohesive coalitions form, they are likely to force the adoption of legislation in spite of the opposition of extreme and isolated veto players. Thus, taken together, we interpret these findings as consistent with our coalitional explanation.

Importantly, we find that parliamentary involvement has a weaker effect on delay than suggested
by previous studies. *Codecision* decreases the hazard rate by close to 40 percent. The weaker effect of parliamentary involvement relative to the effect of coalitional behavior of governments suggests that most of the EU legislative conflict occurs in the Council, before the intervention of the EP. In the light of our theory, we suspect that heterogeneous coalitions whose members have incentives to delay legislation should also be willing to consider amendments of the EP. Our findings for this covariate are thus consistent with studies focusing on national parliamentary democracies that conclude that parliamentary involvement is an increasing function of the conflict within government coalitions (Franchino & Hoyland 2009, Martin & Vanberg 2004).

A parallel conclusion can be reached with regard to the effects of *additional readings* in the codecision procedure. Failing to agree on the first reading significantly lowers the hazard of adoption (28 per cent). However, we should recall that, given the EU procedural time limits, once a decision reaches a second reading, a legislative negotiation can only last as much as 8 months and 24 weeks if it reaches the final stage of “conciliation”. For all codecision files, our data indicate that it is the time spent by the Council in taking its first common position which consumes most of the time of the procedure. The effect of additional readings on duration can thus be attributed to delays on decisions that were already controversial in the first stage of the procedure. Finally, *pending* designates the weight of the amount of pending legislation on the current legislative process. The pressure to relieve legislative backlog speeds up legislation slightly. A one-standard-deviation increase in the number of pending bills, i.e. from 182 to 213, *increases* the hazard rate by 6.5 per cent.

[Table 2 about here.]

[Table 3 about here.]

We also find support for our second expectation regarding the impact of the impatience of legislators. Naturally, our hypothesis about the impatience of legislators means that the effect of coalitional covariates on the probability of adoption *should not* be proportional over time. Specifically, it should wear off over time. As discussed above, table 1 shows the results of non-proportionality
tests for individual covariates. The covariates of c-heterogeneity and polarization for the left right dimension violate proportionality, with p values of 0.003 and 0.000, respectively. The corrective variables in model 2 indicate the direction of the violation of proportional hazards. In fact, both for LR c-heterogeneity and LR polarization, the ln(t) interaction compensates over time for the negative effect on the hazard rate. The effect indeed wears off as expected. Put differently, the effect of left-right coalition heterogeneity decreases over time, as it does for left-right polarization. Thus, time pressure is likely to induce general compromises within the Council and prompt universalistic agreements that take everybody on board. In contrast, impatience seems not to play a similar role for the EU dimension. Our conjecture for this difference is that the left-right dimension encapsulates issues that are subject to more agenda pressures than the issues involving preferences for supporting or rejecting the European project. Finally, the effect over time of the amount of pending legislation is different. The pressure of the amount of pending legislation on decision-making also wears off. But as the initial effect (6.5 percent) is not very strong, this should not fundamentally alter the results of our analysis.

**Conclusion**

The duration of the legislative process has been considered for a long time as one of the most important indicators of legislative productivity and gridlock in the EU. In this article, we have advanced a formal model positing that the timing of the adoption of legislation in the EU is highly influenced by the ability of governments in the Council to accommodate their divergent preferences when forming a majority coalition to adopt a common policy. We have more specifically explored the relation between coalitional behavior and duration by looking at changes in the government composition of the Council during the lifespan of legislative bills.

Our empirical analysis lends consistent support to our theoretical expectations. First, we find strong evidence that legislation is more likely to be delayed in Council compositions in which governments have only the opportunity to form heterogeneous decisive coalitions. Consistent with
our theory, individual governments typically seek to implement an agreement supported by a decisive coalition of like-minded governments that share their interests. As a consequence, when they can only reach a weak compromise through a coalition gathering a large diversity of views, they have incentives to postpone the vote and wait for better coalitional opportunities in the future. The relevance of coalitional dynamics in the Council is further confirmed when considering the alternative assumption that duration is determined by the conflictuality in the entire Council. Contrary to conventional wisdom, our findings suggest that majority coalitions in the Council have a greater weight on slowing down or accelerating the passage of legislation than the presence of extreme and isolated governments pushing to defend their vital interests. Surprisingly, our results further reveal that amendments of the EP do not enlarge the life of a bill as much as the original negotiations in the Council. In other words, coalitional deals in the Council take most of the legislative deliberation in the EU.

Second, our results indicate that the capacity of majority coalitions to delay the adoption of legislative bills decreases over time. Our analysis suggest that, as the negotiations last for several periods of bargaining, all governments in the Council become more concerned about opportunity costs and tend to speed up the adoption of legislation.

In conclusion, our results confirm a clear relation between coalitional bargaining and the duration of the legislative process in the changing political environment of the EU. When others have explored the importance of structural factors in explaining legislative paralysis in the EU, our study demonstrates the added value of looking more closely at the strategic interactions that endogenously develop in the EU decisional process. Our perspective has implications beyond the EU. For instance, in legislatures characterized by the alternation of unified and divided government, like the US Congress, the focus on farsighted coalitions can contribute to explaining incentives of legislators to control the timing in the passage of major laws. In further extensions, our perspective could shed light on how majority governments in legislatures respond, in terms of legislative activity, to wedge issues that intermittently affect their internal cohesion. More generally, our approach highlights the relevance of taking into account shocks and changing circumstances in order
to study dynamics of legislative behavior and legislative productivity.

Notes

1 There are now 28 countries since the accession of Croatia on July 1st, 2013. For the period under study, there are only 27 member states.

2 The constitutional provisions in the EU do not set time limits for the Council to adopt a decision. Thus, unlike most national legislatures, elections in member governments of the EU do not represent a break in legislative activity of Council.

3 As the game is conceived in cooperative form, it is useful to think about a Commission bill as the whole Pareto set of feasible outcomes from which the Council draws a final common position.

4 The model can be extended to one m-dimensional space by assuming a Euclidian space with metric properties (Garcia Perez de Leon 2012). We limit the description to the one-dimensional case to allow for an empirical application of the theoretical propositions.

5 Our model of preferences is similar to Diermeier and Vlaicu’s model of preferences for parties of like-minded legislators (Diermeier & Vlaicu 2011) but the methodology differs.

6 If the status quo is located between the ideal points of governments, then almost every proposal for a vote will be rejected in favor of maintaining the status quo and postpone the vote for the next period.

7 Proofs for Lemma 1 and other lemmas and propositions of the model are provided in the authors’ website.

8 Note that the equilibrium proposal does not need to fall on the position of the median voter. Without imposing any structure on the preference on actors, the position of the median voter would be at least weakly preferred by pivotal actors to any other point in the one dimensional space. However, when legislators have a preference to align with like-minded legislators, the collective choice tends to be off-median (cf. Diermeier & Vlaicu 2011).

9 Note that, by Lemma 1, it is guaranteed that there will be always some proposal \((x^t, C) \in X^t\) such that, given any other proposal \((x^{t''}, C'') \in X^t\), \(EU(x^t) \geq i \cdot EU(x^{t''})\). Therefore, to see if there is a voting equilibrium, we need only to ascertain that there is not a expected proposal in the set \(X^{t+1}\) strictly preferred to \((x^t, C)\) by any actor \(i \in v(C)\).

10 For more information see the OIE’s website.

11 Our dataset thus excludes Commission proposals that have not yet been adopted. Put differently, the data is left-censored, but not right-censored.

12 The policy space for each interval of Council composition, as codified by the Comparative Manifestos Project, is continuous and bounded between 0 and 10. Given the QMV rules of the Council, the standard deviation of a MWC would be at a minimum of 0, when all legislators in the MWC share the same position, and at a maximum of 4.9,
where the spread of preferences in the coalition would be greatest. Values of coalition cohesiveness in our data range from 0.436 to 1.289.

13 We compute a Kaplan-Meier estimator on the score residuals because our observations change stepwise, and our data shows censoring to be more concentrated at the end of the period under study, due to shorter intervals or bargaining periods (Park & Hendry 2013, Therneau & Grambsch 2000).

14 Under the period under study, the first readings consumed, on average, 64 per cent of the time of codecision files. From 2004 to 2009 the percentage rises to 77 per cent. See also Rasmussen & Reh 2013.

References


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Figure 1: Path of play

\[ SQ \]

\[ x^t \text{ proposed for a vote} \]

pre-electoral event setting expected policies \( E_t f(x^{t+1}) \)

\[ x^t \text{ accepted} \]

Council adopts\[ x^t \text{ Common Position} \]

\[ SQ \]

\[ x^{t+1} \text{ proposed for a vote} \]...
Figure 2: Voting equilibriums

\[ \delta = 1 \quad \text{and} \quad \delta < 1 \]

Coalitional heterogeneity in \( t + 1 \)

Coalitional heterogeneity in \( t \)
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### Table 3: Marginal effects of individual variables (model 2)

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<th>% change in the hazard rate</th>
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