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*The Efficiency of Legislative Decision Making in the European Union*

by

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# Political Economy of European Integration (PEEI)

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Abstract

It is a common theme in the literature that the efficiency of the EU decision making process has deteriorated considerably as scale and scope of the EU's legislative agenda have increased over the past two decades. Most studies that the EU decision making process has become inordinately slow, suffering from an excessive load of business and increased gridlock. In this paper, we systematically evaluate these impressionistic accounts of EU decision making efficiency. We use the time lag between a Commission proposal and Council decision as central indicator of EU decision making efficiency. We specify and test an econometric model of EU decision making speed to analyze the factors influencing the proposal-decision time lag. This allows us to evaluate the ability of the Community to deal efficiently with an expanding legislative agenda.

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# 1 Introduction

Since the 1970s, legislative activity of the European Union (EU) has expanded greatly in both scale and scope. The number of decisions made by the EU per year increased from less than 300 in the mid-1970s to more than 500 in the mid-1980s. At the same time, the EU gradually extended its *acquis* to issue areas not explicitly covered by the Treaty of Rome, including consumer protection, research and development, and the environment.

This continuous expansion of EU legislative activity has been accompanied by only modest, periodic changes of the EU's institutional framework. The Single European Act (1987) introduced qualified majority voting for a number of policy areas and provided the European Parliament with the ability to influence legislative outcomes. The Treaty on European Union (1993) further extended the use of qualified majority voting and strengthened the role of the Parliament in the legislative process.

The question arises whether the modest reforms of the EU's institutional framework have enabled the Community to deal efficiently with an expanding legislative agenda. A common theme in the literature is that the efficiency of the EU decision making process has deteriorated considerably as scale and scope of the EU legislative agenda have increased. A number of studies suggest that the Council is unable to cope with the Commission's legislative output (Scharpf 1988, ref.). Other studies point to a dilution in the substantive content of Community legislation (ref.). The most common suggestion is that the EU decision making process has become inordinately slow, suffering from an excessive load of business and increased gridlock (CEC 1980, Nugent 1994, Wessels 1991).

In this paper, we systematically evaluate these impressionistic accounts of EU decision making efficiency. We use the time lag between a Commission proposal and a Council decision as central indicator of EU decision making efficiency. We specify and test an econometric model of EU decision making speed to analyze the factors influencing the proposal-decision time lag. This allows us to evaluate the ability of the Community to deal efficiently with an expanding legislative agenda.

Two previous studies have analyzed the duration of the EU decision making process. Krislov et al. (1986) provide descriptive statistics on a sample of 472 Community decisions made between 1958 and 1981 and find no increase in the proposal-decision time lag. However, the generalizability of their results is limited because their sample is not representative of the population



of EU decisions. They also make no attempt to explain the determinants of EU decision making speed.

Sloot and Verschuren (1990) analyze Commission proposals made in five years between 1975 and 1986. They regress the proposal-decision time lag on a set of explanatory variables and find that participation of the Parliament and consideration of a directive have a positive effect on the proposal-decision time lag, while the number of proposals waiting for adoption and consideration of a regulation have a negative effect on the duration of the decision making process. However, the usefulness of their analysis for the understanding of EU decision making efficiency is limited because of methodological problems. First, their use of OLS leads to biased estimates because of right-censored data — proposals made by the Commission that are pending decision in the Council. Second, they fail to control for time dependence and for possibly confounding variables.

In this paper, we improve on previous studies of EU decision making speed in three respects. First, we use an explicit theoretical framework both to motivate our selection of variables and to derive our hypotheses. Second, we analyze the entire population of proposals for binding EU legislation made between 1984 and 1994, thus eliminating possible sampling biases and maximizing the efficiency of our estimates. Third, we test our hypotheses using an econometric technique that is specifically designed for the analysis of duration data.

The empirical analysis provides strong support for all our hypotheses: (1) the use of qualified majority rule decreases the proposal-decision time lag; (2) participation of the Parliament increases the duration of the decision making process; (3) regulations and decisions have shorter proposal-decision lag times than directives; and (4) measures pertaining to policy areas that constitute the functional core of the Community have shorter lag times than measures in other issue areas. Our results show that the reforms of the EU's institutional framework had a substantial impact on decision making efficiency. The two institutional variables have by far the greatest effect on EU decision making speed. The introduction of qualified majority voting illustrates that the EU is capable of an effective institutional response to an expanding legislative agenda. The effect of Parliamentary participation, by contrast, suggests that decision making efficiency is not the only goal guiding EU institutional reform and that member states are willing to tolerate a decrease in decision making efficiency in order to achieve other goals, such as reducing the EU's democratic deficit.

The remainder of the paper is divided into four sections. Section 2 provides a brief overview of the EU legislative process. Based on a discussion of the spatial model of legislative choice, section 3 develops four hypotheses about factors influencing the proposal-decision time lag. Section 4 tests these hypotheses analyzing all proposals for binding EU legislation made between 1984 and 1994. Section 5 contains summary remarks.

## 2 The EU Legislative Process

Community legislation may be adopted by three sets of actors: the European Parliament (EP) acting jointly with the Council, the Council acting alone, and the Commission. The Treaty of Rome confers legislative powers on the Commission in only a few specific cases. Most legislation is adopted by the Council acting alone.

The Treaty sets out several different decision making procedures and specifies the circumstances in which they are to be used.[1] Under all procedures, the Commission has the sole right to propose legislation.[2] Depending on the procedure, the Council can adopt the Commission's proposal either by qualified majority or by unanimity. Under all procedures, Council amendments require unanimity. The EP has veto powers under the cooperation and co-decision procedures. None of the legislative procedures limits the duration of the decision making process.[3]

The Treaty distinguishes five different types of legislation: regulations, directives, decisions, recommendations, and opinions. Regulations are binding in their entirety and directly applicable in all member states. Directives, by contrast, are binding only "as to the result being achieved" — they lay down an objective and leave it to each member state to achieve it by the means it regards as most suitable. Directives also apply only to the member state to whom they are addressed. A decision is binding in its entirety, but applies only to the member state or person to whom it is addressed. Recommendations and opinions are not binding at all. In this paper, we focus on binding legislation and ignore recommendations and opinions.

[1] The most important legislative procedures include the consultation procedure (the basic legislative procedure introduced by the Treaty of Rome), the cooperation procedure (introduced by the Single European Act of 1987), and the co-decision procedure (introduced by the Treaty on European Union of 1993). For a description of the major legislative procedures, see Hartley (1994: 38–56).

[2] While the Commission has the formal authority to propose legislation, the Council or the EP may request the Commission to submit a proposal (Art.152 EC and Art.138b EC). In other words, the Commission has proposal power but no gatekeeping power.

[3] Art.189b(c) implies that under the co-decision (cooperation) procedure a maximum of 14(9) months may elapse from the beginning of the second reading for a proposal to be adopted; however, neither article imposes limits on the duration of the first reading.



## 3 Hypotheses

The objective of this paper is to evaluate the ability of the Community to deal efficiently with an expanding legislative agenda. This requires a measure of EU decision making efficiency. Krislov et al.'s (1986) distinction between mechanical and substantive *lourdeur* is helpful in identifying two dimensions of EU decision making efficiency. They use the term *lourdeur* to characterize the alleged decisional malaise of the EU. Indicators of mechanical *lourdeur* include a decline in the quantity of legislative output and, most importantly, a slowing down of the decision making process. Substantive *lourdeur*, by contrast, denotes the dilution in the substantive content of Community legislation.

In this paper, we analyze the efficiency of the EU decision making process focusing on the mechanical dimension of *lourdeur*. This does not mean that we regard the substantive dimension as irrelevant. However, the substantive content of legislation is an inherently subjective concept that is difficult, if not impossible, to measure and hence not suitable for the purpose of this study. We use the time lag between a Commission proposal and a Council decision as central indicator of EU decision making efficiency. While the proposal-decision time lag does not capture every aspect of decision making efficiency, it is the single most comprehensive indicator. A necessary condition for an efficient legislative process is to produce decisions in a timely fashion. It is for this reason that virtually all studies suggesting a decline in EU decision making efficiency have emphasized the alleged slowing down of the decision making process.

We analyze the factors influencing the duration of the EU decision making process in this and the following section. This will allow us to evaluate the ability of the Community to deal efficiently with an expanding legislative agenda. Based on a discussion of the spatial model of legislative choice, this section develops four hypotheses about factors influencing the proposal-decision time lag. The next section tests these hypotheses analyzing all

proposals for binding EU legislation made between 1984 and 1994.

## Identifying Factors Influencing Decision Making Speed

The spatial model of legislative choice — though technically a static model — suggests two classes of factors influencing the duration of political decision making processes. Consider an $n$-member Council governed by $k$-majority rule ($1/2 < k \leq 1$) and assume that Council members make decisions on a one-dimensional policy space over which they have Euclidean preferences (Figure 1). Let $x_i$ denote the ideal point of Council members $i$. $L$ represents the leftmost Council members, $Q$ the Council members with a $k$-majority of votes to its right, $Q^*$ the Council members with a $k$-majority of votes to its left, and $R$ the rightmost Council members. $SQ$ denotes the current policy or status quo. In this model, policy change occurs only if $SQ \notin [x_Q, x_{Q^*}]$, that is, if the status quo is outside the set bounded by the two pivotal Council members. By contrast, if $SQ \in [x_Q, x_{Q^*}]$, then there is no $k$-majority in the Council to change $SQ$. The set $[x_Q, x_{Q^*}]$ thus defines the set of status-quo points for which there is no policy change — the "gridlock-interval" (Krehbiel 1996). In this paper, we assume that the width of the gridlock interval and speed of decision making are inversely related.[4]

We motivate this assumption by the following observation. The spatial model of legislative choice simplifies the reality of political decision making in a number of respects. In the above illustration, actors have complete and perfect information, make decisions on a one-dimensional policy space, and act as if they were in a one-shot game. In the world of Figure 1, actors reach decisions instantaneously — depending on the location of the status quo, policy is either changed or not. The reality of political decision making is, however, more complicated than Figure 1 suggests. Consider a status quo just to the right of $x_Q$. According to the simple spatial model, since there is no qualified majority in support of a new policy, the status quo prevails.

[4]We rely on this conjecture from the static spatial model of legislative choice, since there are few dynamic models of legislative decision making that yield testable propositions about the duration of political decision making processes. Most of these models are driven by some kind of discount factor and decision making speed is usually not their primary explanatory concern (e.g., Baron and Ferejohn 1989). Since the focus of our analysis is empirical rather than theoretical, we do with a conjecture based on a static model and leave the development of a dynamic model of the duration of political decision making processes for future research.



In reality, however, Council members favoring policy change may have an incentive to persuade Council member $Q$ to vote for the proposed policy. For example, they may offer $Q$ side payments; or they may offer to compromise on another policy issue a in return for $Q$'s vote; or they may promise $Q$ to compromise on a future policy issue. Side-payments and linkage both across issues and across time are strategies to bring about policy change in situations in which the simple spatial model would predict gridlock. However, bargaining over side-payments and package deals increases the duration of the decision making process. The possibility of effective blockages of the decision making process makes actors take longer to resolve differences over policy and to strike a mutually acceptable bargain. By contrast, if there is broad agreement among actors to change policy, there is no need for time-consuming negotiations over side-payments and package deals. This should greatly speed up the decision making process. The degree to which there is agreement in the Council to change policy is indicated by the width of the gridlock interval; hence, we conjecture that width of the gridlock interval and speed of decision making are inversely related.

In our view, this assumption should be relatively uncontroversial and, once accepted, a number of hypotheses about the duration of political decision making processes can be extracted from the spatial model of legislative choice. In this model, the width of the gridlock-interval is a function of two factors: (1) the institutional requirements for the adoption of legislation and (2) the distribution of actors' preferences (Krehbiel 1996). Figure 2 illustrates the impact of institutional rules. It depicts a seven member Council governed by a 5/7-majority rule. Council members 3 and 5 are pivotal and for all $SQ \in [3, 5]$ there is no qualified majority in the Council to change $SQ$. An increase in the qualified majority requirement to 6/7 increases the width of the gridlock interval. Now Council members 2 and 6 are pivotal and, as long as $SQ \in [2, 6]$, it will defeat any other policy. Figure 3 shows how the distribution of actors' preferences affects the width of the gridlock interval. It again depicts a seven member Council governed by a 5/7-majority rule and the associated gridlock interval $[3, 5]$. Now assume that the distance between each pair of ideal point increases by 50%. As can be easily inferred from Figure 3, the increase in the heterogeneity of actors' preferences increases the width of the gridlock interval to $[3', 5']$.[5]

[5]An increase in the heterogeneity of preferences does not always increase the width of the gridlock interval. A necessary condition for the gridlock interval to widen is an

In sum, the spatial model of legislative choice suggests two classes of factors that influence the width of the gridlock interval and, by our assumption, the duration of the decision making process. In the remainder of this section, we discuss both institutional features of the EU legislative process and factors indicating the distribution of preferences in the Council of Ministers and develop four comparative static predictions regarding the duration of the EU decision making process.

## Institutional Rules

The most important institutional features of the EU decision making process are the voting rule in the Council of Ministers and the role of the Parliament.

### Voting Rule

The Treaty of Rome established the Council of Ministers as the ultimate locus of Community decision making. Prior to the Single European Act of 1987, most legislation was adopted according to the consultation procedure, in which the Commission submits a proposal to the Council, which can either accept that proposal with qualified majority or amend it with unanimity. The Luxembourg compromise of 1966, although not legally binding, ensured that, in most cases, the Council acted by unanimity, even when applying articles that permitted majority voting. The Single European Act effectively abolished the Luxembourg compromise and introduced qualified majority voting for a number of policy areas. Under unanimity rule, every member state has a veto. The need for consensus raises the possibility of effective blockages of the decision making process over long time periods and prolonged bargaining between member states, possibly involving complex package deals. Under qualified majority rule, by contrast, ministers do not have to wait for everyone to agree to all aspects of a proposal. This should greatly speed up the decision making process:

**Hypothesis 1** *The use of qualified majority rule decreases the proposal-decision time lag.*

increase in the distance between the ideal points of the two pivotal Council members.



### Role of the Parliament

The Single European Act not only introduced qualified majority voting for a number of policy areas, but also provided the European Parliament with the ability to influence legislative outcomes. Under the cooperation procedure, the Parliament can veto or amend the Council's so-called common position; a Parliamentary veto or amendment (if supported by the Commission) can be overridden only by a unanimous Council. The co-decision procedure, introduced by the Treaty on European Union, further strengthened the role of the Parliament in the legislative process by introducing a conciliation committee in which Council and Parliament can resolve their differences over EU policy and by giving the Parliament an absolute rather than a suspensive veto over legislative outcomes. Since decision making in the European Parliament is likely to be a time-consuming process involving deliberation within parties, committees, and on the floor, we expect Parliamentary involvement in the EU legislative process to increase the duration of the EU legislative process:

**Hypothesis 2** *The participation of the Parliament in the EU decision making process increases the proposal-decision time lag.*

## Distribution of Preferences

In addition to the institutional requirements for the adoption of legislation, the spatial model of legislative choice suggests that indecision, and by our assumption decision making speed, depend on the distribution of actors' preferences. As discussed above, the model suggests that heterogeneity of actors' preferences and decision making speed are inversely related – the more heterogeneous actors' preferences, the longer it takes for actors to resolve differences over policy and to strike a mutually acceptable bargain. We make no attempt in this paper to estimate member states' ideal points, but there are two characteristics of EU policy making that allow us to make inferences about the distribution of preferences in the Council.

### Issue Area

The primary goals of the Community were to create a common market in goods, services, capital, and labor and to adopt common policies in a limited number of related domains, including agriculture, competition, and trade. The economic rationale for establishing an internal market was compelling.

Non-tariff barriers to trade (NTB) arising from different national rules and regulations entailed substantial efficiency losses. While the abolition of NTBs entailed distributional losses, the overall benefits of having a common market were clear (Ceccini 1988). This suggests that preferences of member states regarding measures establishing the internal market were relatively homogenous. The same reasoning applies to policies in the areas of agriculture, competition, and trade, which, together with the internal market, form the functional core of the EU. However, relative homogeneity of preferences can not necessarily be assumed for other issue areas. This is because the mutual benefits of EU legislation in fields such as social policy, research and development, and the environment are much less clear, while the distributional consequences are often substantial and certain. This suggests the following hypothesis:

**Hypothesis 3** *Measures pertaining to policy areas that constitute the functional core of the Community (internal market, agriculture, competition, and trade) have a shorter proposal-decision time lag than measures in other issue areas.*

### Policy Instrument

As discussed in section 2, binding Community legislation can take three different forms: regulations, directives, and decisions. Regulations and decisions are binding in their entirety. Directives, by contrast, are binding only "as to the result being achieved" — they lay down an objective and leave it to each member state to achieve it by the means it regards as most suitable. On the one hand, one might expect directives to have shorter proposal-decision lag times than regulations and decisions because they allow member state governments some discretion in the implementation stage. On the other hand, directives require a change in domestic law, which may be difficult for some governments because of lacking domestic legislative majorities or opposition from domestic interest groups. As a result, member governments can be expected to be less flexible when negotiating a directive, resulting in prolonged bargaining in the Council. Furthermore, most decisions and regulations concern quite specific and technical adjustments of existing EU law. Directives, by contrast, tend to be more general in nature; they are primarily concerned with the laying down of broad policy principles and deal more often with "strategic" issues, often involving substantial distributional consequences. This suggests the following hypothesis:



**Hypothesis 4** *Regulations and decisions have a shorter proposal-decision time lag than directives.*

We now test hypotheses 1–4 analyzing all proposals for binding EU legislation made between 1984 and 1994.

## 4 Analysis

Testing theoretical claims about the duration of the EU decision making process is complicated by both data and methodological problems. In contrast to decision making in domestic legislatures, few data are available on the EU decision making process. There is no comprehensive database that provides the kind of information usually available to analysts of legislative decision making. By processing information extracted from the EU's Celex database in a relational database, we constructed a dataset of all proposals for binding EU legislation made between 1984 and 1994 that enabled us to test hypotheses 1–4.

Methodologically, the analysis of EU decision making speed is complicated because of the large number of right-censored observations — proposals made by the Commission that are pending decision in the Council. Standard regression analysis is inappropriate in this context, as are logit and probit models, because they do not allow for censored observations to be used in estimating parameters, thus introducing biases that result from deleting such observations. We use event history analysis, an econometric technique that is specifically designed for the analysis of duration data and that allows censored observations to be used in estimating parameters.

We first explain the construction of our dataset and provide some descriptive statistics on all proposals for binding EU legislation made between 1984 and 1994. Next we introduce some basic concepts of event history analysis and identify some characteristic patterns of EU decision making. We then estimate an econometric model that provides a direct test of hypotheses 1–4. We conclude this section with a discussion of our results.

### Data

Testing hypotheses 1–4 requires information about the date of a Commission proposal, the possible date of a Council decision, the policy area of the proposed legislation, the voting rule in the Council, the instrument by which

the proposed legislation is to be implemented, and the possible participation of the Parliament in the decision making process. While this information is available from printed sources such as the Official Journal, there is no electronic database that supports the construction of a machine readable dataset. The EU's Celex database contains some of the required information, but it is a fulltext database that does not provide an indexed query interface. This database cannot be used to extract information about the legislative history of the EU the way students of American politics, for example, use the database of the Congressional Quarterly to obtain information about Congressional decision making.

To construct a machine readable dataset, we used a Fortran routine to extract information from the Celex database. We then processed this data in a relational database to obtain the information required for the empirical analysis. Table 1 summarizes the coding of the variables. Ideally, we would have constructed a dataset comprising the entire legislative history of the EU. However, since the Celex database is complete only as of 1984, we had to limit our analysis to proposals made in or after 1984. We ignored Council decisions made in or after 1984 when the Commission proposal was made before 1984 since this would have led to the inclusion of left-censored observations into our dataset. To date, there is no satisfactory solution to the problem of left-censoring. Since there is a delay of up to six months before the Celex database is fully updated, we ignored all decisions made after 1995. To keep the problem of right-censoring manageable, we ignored proposals made after 1994. Hence, our dataset includes all proposals for binding EU legislation made between Jan 1, 1984 and Dec 31, 1994. Pending proposals are right-censored on Dec 31, 1995.

## Descriptive Statistics

Our query of the Celex database yielded 5229 Commission proposals for EU legislation between January 1984 and December 1994. Because of missing or inconsistent data, we had to delete 46 cases, leaving a total of 5183 observations. Of those 5183 Commission proposals, 3708 (71.5%) had been decided by the Council by December 1995. As Figure 4 shows, the number of Commission proposals and Council decisions per year move in parallel, with legislative activity reaching a maximum in the late 1980s. 79.8% of all Commission proposals were introduced under majoritarian decision making procedures, 7% under procedures in which the Parliament has a formal role;



agriculture and the common commercial policy accounted for more than two thirds of all proposals. Tables 2–4 provide further descriptive statistics.

The median proposal-decision time lag is 156 days. As Figure 5 shows, the distribution of the proposal-decision time lag has high positive skewness, with many observations clustered in the $(0, 200)$ interval but a long tail. As pointed out in section 2, none of the EU legislative procedures limit the duration of the decision making process. However, under all procedures, Council inaction suffices to shelve a Commission proposal. Hence, some proposals that have been pending decision for a long time may effectively be Council rejections. But long proposal-time lags are a characteristic feature of EU decision making. For example, of all 3708 proposals that had been decided by December 1995, 14.5% had a lag time of one year or greater. A 1984 proposal on the harmonization of VAT exemptions was decided on Feb 14, 1994, after 3626 days.

Figures 6 and 7 provide evidence that EU decision making process has slowed down in recent years. As Figures 6 shows, the median proposal-decision time lag, which had been hovering around 110 days for proposals made between 1984 and 1988, increased markedly in the early 1990s, from 144 days for proposals made in 1989 to 392 days for proposals made in 1993.[6] Interestingly, this increase occurred during a time period in which the number of Commission proposals decreased. Figure 7 further supports the claim that the EU decision making process has slowed down in recent years. It shows the percentage of proposals adopted within 3, 6, and 12 months for each proposal year.[7] As Figure 7 shows, the percentage of proposals adopted within each category declined gradually from a high for proposals made in the mid-1980s to a low for proposals made in 1994.

In sum, our data indicate that the EU decision making process has slowed down in the past decade. However, the data also show that the increase in the proposal-decision time lag is a relatively recent phenomenon — the increase did not occur before 1989.

We now test the hypotheses developed in section 3 using the methodology

[6] The mean is an inappropriate measure of central tendency because of the large number of right-censored observations. While the median does not automatically eliminate the censoring problem, it is much more robust in the context of censored data. In Figure 6, only the measure for 1994 is slightly downwardly biased because of right-censoring.

[7] This set of indicators completely avoids the censoring problem because we recorded all Council decisions until December 1995. Even a proposal made in December of 1994 had at least 12 months to be decided by the Council.

of event history analysis. This is an econometric technique that is specifically designed for the analysis of duration data. Since many researchers are unfamiliar with this method, we first introduce some basic concepts of event history analysis.

## Basic Concepts

Event history analysis refers to the analysis of even history data — data on the number, timing, and sequence of "events" for some sample within a given time period of observation. An event is a change in the value of some discrete random variable, $Y(t)$, that is defined over some time interval and that has a countable number of exhaustive and mutually exclusive values. In our case, $Y(t)$ denotes the status of a Commission proposal and can take one of two values, "pending decision" (the origin state) or "decided" (the destination state); an event occurs when a Commission proposal moves from its origin state to the destination state, i.e., when the Council decides on the proposal.

Each sample of event history data is based on a limited observation period. In most cases, it will contain some episodes without a transition to a new destination state. These episodes are called right-censored. With a limited observation period it is also possible that episodes are left-censored, meaning that the origin state was already reached before the observed starting time of the episode. Ignoring censored observations or treating them as though events occurred when the observations period starts and ends leads to biased estimates of the models considered. Event history analysis uses a method of estimation that allows censored observations to be used in estimating parameters, thus avoiding biases that result from deleting such observations.[8]

The duration of an episode can be represented by a non-negative continuous stochastic variable $T$.[9] The goal is to describe the distribution of this stochastic variable based on a sample of statistically independent observations of $T$. The distribution of $T$ can be described by a density function $f(t)$

[8]While right-censored data pose no problems for event history models, left-censoring is far more difficult to handle. There is no generally accepted solution to the problem of left-censoring. For a discussion, see Tuma and Hannan (1984: ch.5).

[9]Note that the underlying time dimension (process time) is not historical time, but a relative time axis (duration) where all episodes start at time zero. Information about when an episode occurred in historical time may be included via covariates (see below).



or by a distribution function $F(t)$ with

$$Pr(T \leq t) = F(t) = \int_0^t f(\tau)d\tau \tag{1}$$

Two central concepts of event history analysis are the survivor function and the hazard rate. The survivor function, $S(t)$, gives the probability that no event occurs until time $t$:

$$S(t) = Pr(T \geq t) = 1 - F(t) \tag{2}$$

The hazard rate, $h(t)$, gives the instantaneous rate at which transitions occur from one state to another:

$$h(t) = \lim_{\Delta t \to \infty} \frac{Pr(t \leq T < t + \Delta t | T \geq t)}{\Delta t} \tag{3}$$

The numerator of this expression is the conditional probability of having an event in a small interval from $t$ to $t + \Delta t$, conditional on having no event until time $t$. This conditional probability is measured per units of time and the limit is taken. The hazard rate thus gives the instantaneous rate of an event occurring at time $t$. From (1)–(3), it follows that the hazard rate can also be expressed by the density and the survivor function of $T$:

$$h(t) = \frac{f(t)}{S(t)} \tag{4}$$

The density function, the distribution function, the survivor function, and the hazard rate are mathematically equivalent and either can be used to describe the duration of episodes.

A first step in analyzing event history data is to describe the distribution of $T$. For example, the so-called product-limit estimation method can be used to obtain non-parametric estimates of survivor functions and hazard rates. In most cases, however, the researcher is not interested in describing the distribution of $T$, but in analyzing how the duration of staying in a specific state is influenced by some covariates. For a small number of categorical covariates, non-parametric methods can be used to address this question. In most cases, however, it is preferable to estimate a hazard rate model, which takes the following general form:

$$h_{jk} = g_{jk}\left(t, \mathbf{x}_{jk}, \mathbf{b}_{jk}, \epsilon_{jk}\right) \tag{5}$$

In this model, the transition from origin state $j$ to destination state $k$ depends on a vector of covariates $\mathbf{x}_{jk}$ with associated coefficients $\mathbf{b}_{jk}$ and possibly on some unobserved stochastic component $\epsilon_{jk}$. In a first step, the analyst has to specify the pattern of time-dependence by assuming a hazard rate function $g$. One can distinguish models in which rates change monotonically (e.g., gamma, Gompertz, Weibull) and models in which rates change non-monotonically (e.g., inverse Gaussian, log-logistic, sickle). The second step in model formulation is to specify how covariates affect the hazard rate function. The most common approach is to specify an exponential link between $\mathbf{x}$ and the unknown parameters of the function $g$.

Hazard rate models are estimated using the maximum likelihood (ML) method. In the general case, the log-likelihood can be expressed as

$$\ell = \sum_{i \in N} \log h(t_i) + \sum_{i \in M} \log S(t_i) \qquad (6)$$

where $N$ denotes the set of all episodes which have an event and $M$ the set of all episodes. ML estimates of $\mathbf{b}$ are obtained by maximizing (6).

A popular alternative to this parametric approach is to estimate a so-called semi-parametric or Cox model, in which the hazard rate is a function of an unspecified baseline rate and a vector of covariates. This model assumes that hazard rates for different values of covariates are proportional.

We now use event history analysis to test the hypotheses developed in section 3. First, we use non-parametric methods to examine possible determinants of EU decision making speed. Then, we estimate a parametric model that provides a direct test of our hypotheses.

## Non-Parametric Analysis

We used Nancy Tuma's RATE program to obtain non-parametric estimates of survivor functions and hazard rates. Figures 8a–c show survivor and hazard estimates for the entire population of Commission proposals made between 1984 and 1994. Figure 8a displays a survivor plot — a plot of estimates of $S(t)$ versus time $t$.[10] The curve first declines quickly — after 160 days (approximately the median duration), 50% of the Commission proposals are estimated to be decided by the Council. The curve then levels off and slowly converges to 0.28, approximately the proportion of Commission

[10]Note that $t$ denotes process time (duration), not historical time. See note 9.



proposals made between 1984 and 1994 that had not been decided by the Council by the end of 1995.

Figure 8b provides estimates of the hazard rate, which provides a measure of the probability of a Council decision in the next small amount of time, given that the proposal has not yet been decided. Since plots of hazard estimates versus time tend to give a series of spikes, it is common to smooth estimated hazard rates in some way. Figure 8c shows a plot of smoothed hazard estimates versus time using a smoothing algorithm developed by Friedman (1984). The pattern of time variation reflects the shape of the survivor plot. However, because the hazard function does not integrate over time, it much more clearly illustrates the pattern of time variation.

Next we divide the population of Commission proposals into different subgroups to examine whether these groups differ in the timing of a Council decision. Figure 9a shows separate survivor plots for proposals subject to majority rule and for proposals being decided by unanimity rule. At any time, more proposals requiring unanimity for adoption are estimated to be pending decision in the Council than proposals subject to majoritarian decision making procedures. Moreover, the 95% confidence intervals for the two types of proposals do not overlap. Hence, we can be confident that proposals being decided by majority rule have a shorter proposal-decision time lag than proposals subject to unanimity rule, providing preliminary support for hypothesis 1. As Figure 9b illustrates, the difference in the timing of a Council decision for the two types of proposals is solely due to different hazard rates for proposals that have been pending decision for less than 300 days. Beyond 300 days, the hazard estimates for the two types of proposals are virtually identical.

Consistent with hypothesis 2, Figures 10a and b suggest that proposals subject to a decision making procedure in which the European Parliament has a formal role have significantly greater proposal-decision time lags than proposals introduced under other decision making procedures. The hazard plot for proposals subject to the cooperation and co-decision procedures is unusual because it is markedly bimodal, possibly reflecting the different time limits the two procedures specify for the duration of the second reading.[11] Also, as duration increases, the two survivor curves eventually converge to the same level, suggesting that Parliamentary participation, in contrast to voting rule, does not have a significant effect on the proportion of proposals

[11]See note 3.

that are pending decision in the Council for very long time periods.

The survivor and hazard plots for policy instrument provide preliminary support for hypothesis 4. As Figures 11a and b indicate, regulations and decisions have significantly shorter proposal-time lags than directives. After 6 months, 59% of all proposals for a regulation or decision, but only 12% of all proposals for a directive, are estimated to be decided by the Council. The hazard rate for regulations and decisions peaks for proposals pending decision for 45 days and then quickly falls off and converges to zero. By contrast, the hazard rate for directives reaches a maximum for proposals pending decision for 508 days and then declines only gradually; even for proposals pending decision for more than four years, the estimated hazard rate is significantly greater than zero.

The survivor and hazard plots for different subgroups of the population of Commission proposals are consistent with hypotheses 1, 2, and 4. We obtained similar results by stratification according to issue area. However, it would be premature to conclude that these results support the hypotheses developed in section 3. This is because the above non-parametric analysis does not control for possibly confounding variables. The results may be entirely due to omitted variables. For example, if all proposals introduced under majoritarian decision making procedures were proposals pertaining to the internal market and if those proposals had significant shorter proposal-decision time lags than proposals pertaining to other issue areas, then a pattern such as the one in Figures 9a and b would result even if the voting rule used in the Council of Ministers had no effect on the proposal-decision time lag.

Hence, to test the above hypotheses, we need to control for possibly confounding effects. These may include covariates, but also historical time. Our model is unlikely to include all factors affecting the proposal-decision time lag and historical time can serve as a proxy for omitted causal variables changing over (historical) time. For example, the finding that proposals introduced under procedures in which the Parliament has a formal role have significantly greater proposal-decision time lags than proposals made under other decision making procedures may simply reflect the increase in the proposal-decision time lag in the early 1990s not accounted for by our explanatory variables, since Parliamentary participation in the EU decision making process was, on average, higher in the early 1990s than in the 1980s.

While it would be theoretically possible to compare survivor and hazard plots for sub-groups with the same constellation of covariates and historical



time, this is impractical given the number of covariates and time periods. To test the hypotheses developed in section 3, it is much more practical to estimate a hazard rate model of the form given by (5).

## Parametric Analysis

The first question is whether to estimate a fully parametric or a semi-parametric model. As pointed out above, a semi-parametric specification assumes that hazard rates for different values of covariates are proportional. A necessary condition for the proportional hazard assumption to be met is that the hazard functions for two categories of a covariate do not cross. A quick inspection of Figures 9b–11b shows that, the proportional hazard assumption is violated for EU decision making between 1984 and 1994. Hence, it is not appropriate to estimate a semi-parametric model.[12]

As discussed above, the parametric approach assumes some specific parametric distribution of $T$ and then makes this distribution dependent on covariates by linking them to the parameters of the distribution. Hence, the first step is to specify the time dependence of the hazard rate. A large number of different parameterizations have been proposed in the literature, but there are no established criteria for deciding what the appropriate specification is. A general rule is to choose a functional form that approximates the hypothesized shape of the hazard function.

The simplest parametric hazard rate model is the exponential model, which assumes that the hazard rate is a time-invariant constant. A quick inspection of Figure 8c shows that this assumption is clearly violated for EU decision making between 1984 and 1994. Figure 8c suggest that it is appropriate to estimate a model in which rates change non-monotonically. The log-logistic model is often proposed when the hazard rate has a non-monotonic pattern. This model assumes that the duration variable $T$ follows a log-logistic distribution with mean $-\ln a$ and variance $\pi^2/(3b^2)$. The survivor and hazard rate function for this distribution are

$$S(t) = \frac{1}{1+(at)^b} \tag{7}$$

[12] As an additional test of the proportional hazard assumption, we estimated a Cox model with interaction effects between covariates and process time. The coefficients of the interaction variables were different from zero and highly significant, indicating a clear violation of the proportionality assumption.

and

$$h(t) = \frac{ba^b t^{b-1}}{1+(at)^b} \tag{8}$$

(7) implies

$$Q\left(S(t)\right) \equiv log\left(S(t)^{-1}-1\right) = b\log a + b\log t \tag{9}$$

Hence, if a plot of $Q\left(\widehat{S(t)}\right)$ versus $\log t$ is roughly linear, a log-logistic model should fit the data reasonably well. As Figure 12 shows, the log-logistic model seems to provide an adequate parameterization of the pattern of time dependence in our data.[13]

We assume that covariates affect only the $a$-term of the model and that

$$a = \exp\{\mathbf{x}'\mathbf{b}\} \tag{10}$$

where $\mathbf{x}$ is the vector of covariates and $\mathbf{b}$ the associated vector of coefficients to be estimated.[14] The model is estimated using the maximum likelihood method. The log-likelihood function corresponding to (6) is

$$\ell = \sum_{i\in N} \log \frac{ba^b t_i^{b-1}}{1+(at_i)^b} + \sum_{i\in M} \log \frac{1}{1+(at_i)^b} \tag{11}$$

with $a$ given by (10). ML estimates of $\mathbf{b}$ are obtained by maximizing (11).

Table 5 summarizes our hypotheses in terms of the effect of a variable on the hazard rate. We used Götz Rohwer's TDA program to estimate five models. Table 6 summarizes the results.

[13] In a future version of this paper, we will provide more elaborate specification checks, including similar plots for the inverse-Gaussian, log-normal, and sickle models, as well as plots for models with monotonically changing rates, such as the Weibull model.

[14] In a future version of this paper, we will specify time-dependent covariates to estimate the effects on duration of changes in voting rule and Parliamentary particpation when a proposal is pending decision in the Council. We do not include an error term ($\epsilon_{jk}$ in (5)) because we do not have substantive reasons to assume unobserved heterogeneity. We estimated a gamma heterogeneity model and obtained essentially the same results as we report below.



**Results**

Model 1 includes all explanatory variables except those indicating issue area. The sign of the coefficient of a variable indicates the direction of the effect on the hazard rate. The coefficients of Decision Rule, Parliament, and Instrument all have the expected sign and are highly significant, indicating that the results of the non-parametric analysis are not due to collinearity among those variables. Model 2 includes only dummy variables for the proposal year. The estimates mirror the observation in Figure 6 of a marked increase in the proposal-decision time lag between 1989 and 1994 — the coefficients of 1989 to 1994 all have a negative sign and are significant at the 0.01 level.

Model 3 adds control variables for historical time to model 1. The coefficients of Decision Rule, Parliament, and Instrument remain highly significant with the expected signs. Moreover, the size of the effects barely changes compared to model 1. The size of the coefficients for the time variables, by contrast, drops considerably (between 7% and 38% for the significant variables). This indicates that a substantial proportion of the increase in the proposal-decision time lag that occurred between 1989 and 1994 can be explained by our first set of explanatory variables. However, the coefficients of the proposal year-dummies for 1989 to 1994 remain significant at the 0.01 level. Note also that the size of the coefficients for 1993 and 1994 remains substantially larger than those of the other time variables. The likelihood-ratio test indicates that controlling for historical time significantly improves the overall fit of model 1.

Models 4 and 5 add issue area variables to models 1 and 3 respectively. In model 4, the coefficients of Agriculture, Internal Market, Trade, and Common Rules all have the expected positive sign and are highly significant, indicating that proposals in policy areas that constitute the functional core of the Community have significantly shorter proposal-decision time lags than proposals in other issue areas. The coefficients of the three other explanatory variables remain highly significant with the expected signs. However, the size of the coefficients for Decision Rule and Parliament drops considerably, indicating that, in models 1 and 3, the two institutional variables partly reflect effects that are due to issue area. The size of the coefficient for Instrument, by contrast, increases, suggesting that the exclusion of the four issue area variables attenuated the effect of Instrument in models 1 and 3. The likelihood-ratio test indicates that controlling for issue area significantly improves the overall fit of model 1.

Model 5 adds control variables for historical time to model 4. The coefficients of the seven explanatory variables remain highly significant with the expected signs. Moreover, the size of the effects changes very little compared to model 4. The size of the coefficients for the time variables drops in comparison to model 3, suggesting that a further proportion of the increase in the proposal-decision time lag that occurred between 1989 and 1994 can be explained by the four issue area variables. The coefficient of 1989 is now significant at the 0.05 level, while the coefficients of the other time variables remain significant at the 0.01 level. The coefficients of 1993 and 1994 continue the be substantially larger than those of the other time variables, indicating that our explanatory variables do not account for a substantial portion of the increase in the proposal-decision time lag in those years. The likelihood-ratio test indicates that controlling for issue area significantly improves the overall fit of model 3.[15]

While the interpretation of the signs of the coefficients is straightforward, the interpretation of the size of the effects is not because the estimated model is non-linear. One possible way to gauge the relative effect of different variables is to estimate and compare expected proposal-decision time lags given different covariate values. For example, using the coefficient estimates of model 5, the expected proposal-decision time lag for a directive pertaining to the internal market that is proposed by the Commission in 1990 under a majoritarian decision making procedure in which the Parliament has a formal role (i.e., the cooperation procedure) is 816.5 days; if the Parliament did not have a formal role, the expected proposal-decision time lag would drop to 219.2 days. Similar changes in the expected proposal-decision time lag could be computed for other combinations of covariate values. There is, however, a more convenient way to illustrate the relative effect of different variables on the expected proposal-decision time lag. For the log-logistic model, $E[logt|\mathbf{x}] = -\mathbf{x}'\mathbf{b}$ where $\beta_j$ is the derivative of this conditional mean:

$$\frac{\partial E[logt|\mathbf{x}]}{\partial x_j} = -\beta_j \qquad (12)$$

Roughly speaking, the percentage change of the proposal-decision time

[15] While the likelihood-ratio test permits the assessment of relative fit, it does not allow for an evaluation of absolute model fit. For the kind of model estimated in this section, there does not exist a simple indicator of absolute fit. In a future version of this paper, we will perform some simple simulations to assess the predictive power of the model estimated in this section.



lag resulting from a unit change in variable $j$ is constant. Table 7 presents the effects of changes in each explanatory variable using the coefficient estimates of model 5.

To facilitate the comparison of individual effects, Table 7 lists changes in the explanatory variables such that they result in an increase in the proposal-decision time lag. The two institutional variables have by far the greatest effect on the proposal-decision time lag. Proposals subject to unanimity rule are estimated to be pending decision in the Council more than 4.8 times as long as proposals subject to majoritarian decision making procedures. Giving the Parliament a formal role in the legislative process is estimated to increase the proposal-decision time lag by 272.5% (in the above example, $[(816.5 - 219.2)/219.2] * 100\% = 272.5\%$). Variables indicating the distribution of preferences in the Council of Ministers have smaller, but still substantial, effects on the duration of the EU decision making process. The difference in the estimated proposal-decision time lag between the four issue areas constituting the functional core of the Community and other issue areas ranges from 72.9% (trade) to 195.1% (internal market). Finally, directives are estimated to have a 80% greater proposal-decision time lag than regulations and decisions. The estimated effects of the time variables for 1989 to 1992 are smaller than those of any explanatory variable, ranging from 35.4% (1989) to 66.5% (1992). The effects of the variables for 1993 and 1994 are substantially greater than those of the other time variables, exceeding the effects of Instrument, Trade, Agriculture (1993 and 1994), and Common Rules (1994).

## Discussion

The estimation of a parametric hazard rate model confirms the results of the non-parametric analysis and provides strong support for hypotheses 1–4. As hypothesized, we find that proposals introduced under majoritarian decision making procedures have significantly shorter proposal-decision time lags than proposals subject to unanimity rule. Moreover, the decision rule used in the Council of Ministers has by far the greatest effect on EU decision making speed. Our analysis suggests that the introduction of qualified majority voting following the Single European Act 1986 had a substantial impact on the duration (and hence efficiency) of the EU decision making process and constituted an effective institutional response to an expanding legislative agenda.

Parliamentary participation has the second greatest effect on EU decision making speed. As hypothesized, proposals subject to a decision making procedure in which the European Parliament has a formal role have significantly greater proposal-decision time lags than proposals introduced under other decision making procedures. Now, there is no evidence suggesting that decreasing EU decision making efficiency was a major objective for member states when they decided to give the Parliament a formal role in the legislative process. Rather, the reason for providing the Parliament with the power to influence legislative outcomes was to reduce the much lamented democratic deficit. Our analysis shows the costs of increasing the democratic accountability of EU institutions in terms of decision making efficiency — giving the Parliament a formal role in the legislative process significantly increases the duration of the EU decision making process.

Our results indicate that the reforms of the EU's institutional framework had a substantial impact on the efficiency of the decision making process. The two institutional variables have by far the greatest effect on the proposal-decision time lag. The introduction of qualified majority voting indicates the ability of the EU to dramatically reduce the duration of the decision making process. This illustrates that the EU is capable of an effective institutional response to an expanding legislative agenda. The effect of Parliamentary participation, by contrast, suggests that decision making efficiency is not the only goal guiding EU institutional reform and that member states are willing to tolerate a decrease in decision making efficiency in order to achieve other goals, such as reducing the EU's democratic deficit.

Our results further show that EU decision making speed varies significantly across issue areas. As hypothesized, measures pertaining to the internal market, agriculture, competition, and trade have significantly shorter proposal-decision time lags than measures in other issue areas. An interpretation suggested by the spatial model of legislative choice is that preferences of member states are more homogenous in issue areas which constitute the functional core of the EU than in other issue areas. As discussed in section 3, there are substantive reasons to expect systematic differences in preference homogeneity across issue areas and our results are consistent with these expectations.

Finally, we find that regulations and decisions have significantly shorter proposal-decision lag times than directives. As discussed in section 3, the possibility for member states to implement the objective of a directive by the means it regards as most suitable suggests conflicting effects. However,



since directives are primarily concerned with the laying down of broad policy principles and deal more often with "strategic" issues, we hypothesized that regulations and decisions have shorter proposal-decision lag times than directives and our results support this hypothesis.

Our results provide strong support for all of our hypotheses, but the time dummies indicate that our seven explanatory variables do not account for part of the variation of the proposal-decision time lag, particularly for proposals made in 1993 and 1994. In a future version of this paper, we will report results of a simulation that will allow us to assess the ability of our model to explain variation of the proposal-decision time lag over time.

# 5 Conclusion

In this paper, we systematically evaluated the ability of the EU to deal efficiently with an expanding legislative agenda. We used the time lag between a Commission proposal and a Council decision as central indicator of EU decision making efficiency. Based on a discussion of the spatial model of legislative choice, we first developed four hypotheses about factors influencing the proposal-decision time lag. We then tested these hypotheses analyzing all proposals for binding EU legislation made between 1984 and 1994. Our results provide strong support for our hypotheses: (1) the use of qualified majority rule decreases the proposal-decision time lag; (2) participation of the Parliament increases the duration of the decision making process; (3) regulations and decisions have shorter proposal-decision lag times than directives; and (4) measures pertaining to policy areas that constitute the functional core of the Community have shorter lag times than measures in other issue areas. Our results show that the reforms of the EU's institutional framework had a substantial impact on decision making efficiency. The two institutional variables have by far the greatest effect on EU decision making speed. The introduction of qualified majority voting illustrates that the EU is capable of an effective institutional response to an expanding legislative agenda. The effect of Parliamentary participation, by contrast, suggests that decision making efficiency is not the only goal guiding EU institutional reform and that member states are willing to tolerate a decrease in decision making efficiency in order to achieve other goals, such as reducing the EU's democratic deficit.

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Figure 1: Gridlock in the Spatial Model

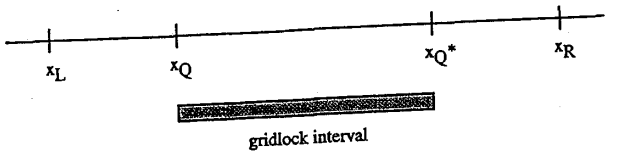


Figure 2: Change in Voting Rule

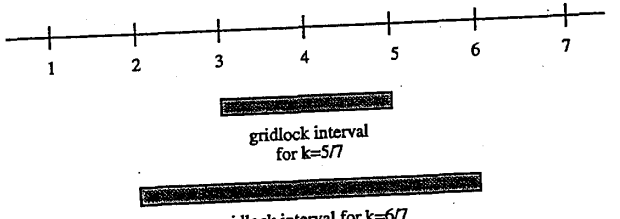

Figure 3: Change in the Distribution of Preferences

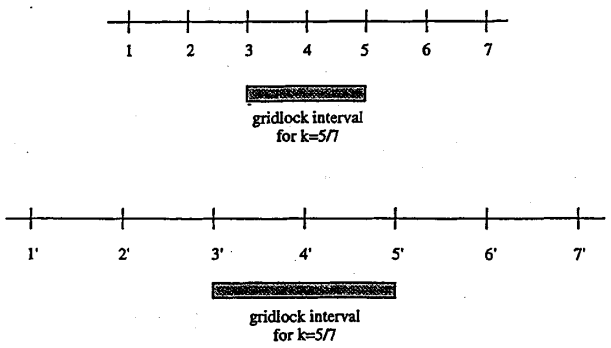


Figure 4: Number of Proposals and Decisions

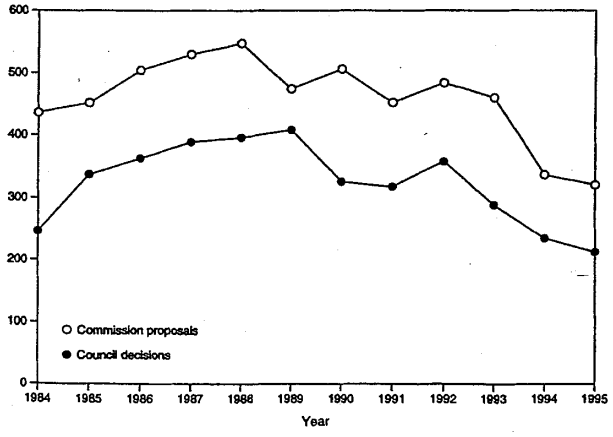


Figure 5: EU Decision Making Speed

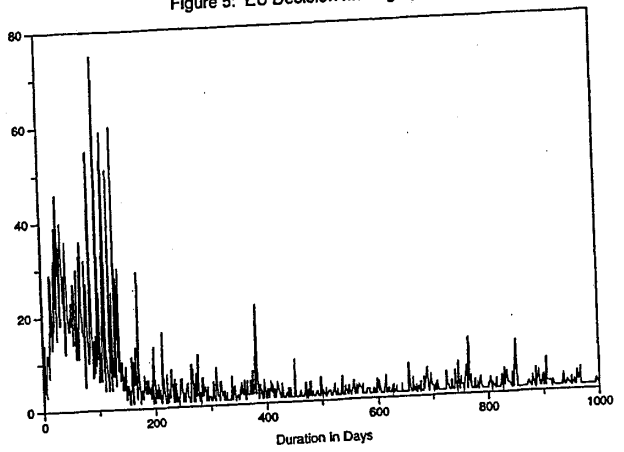


Figure 6: Median Proposal-Decision Time Lag

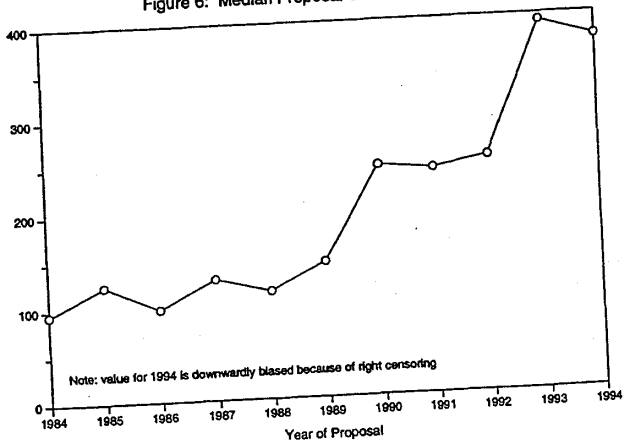

Figure 7: Percentage of Proposals Adopted

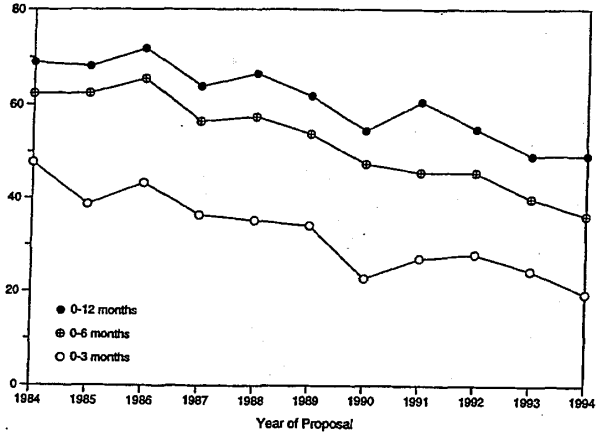


Figure 8a: Survivor Estimates

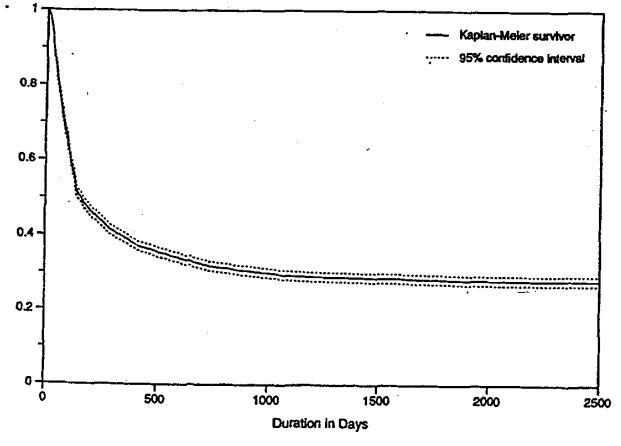


Figure 8b: Hazard Estimates

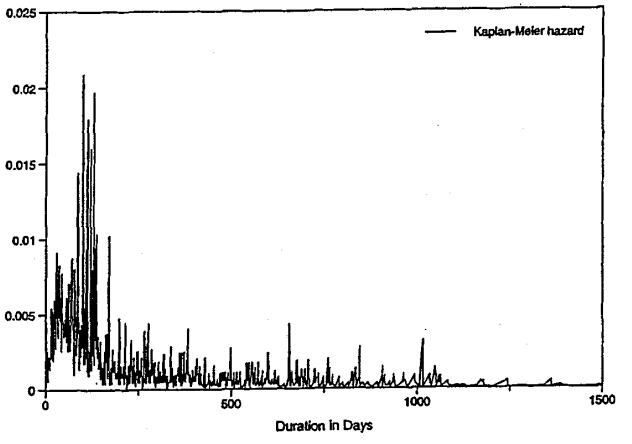


Figure 8c: Smoothed Hazard Estimates

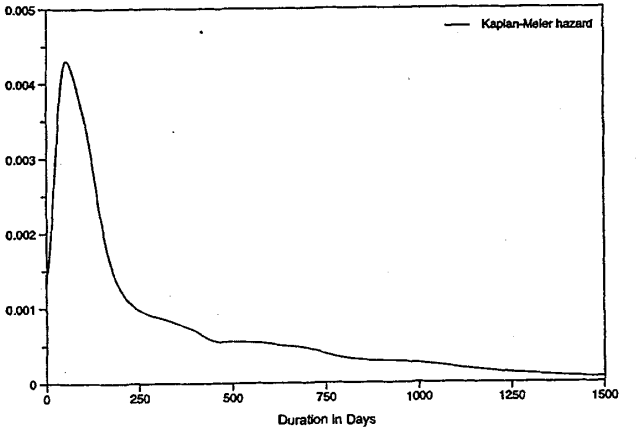

Figure 9a: Survivor Estimates

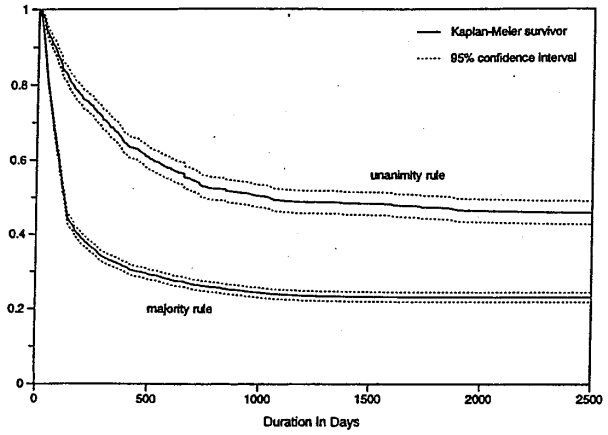


Figure 9b: Smoothed Hazard Estimates

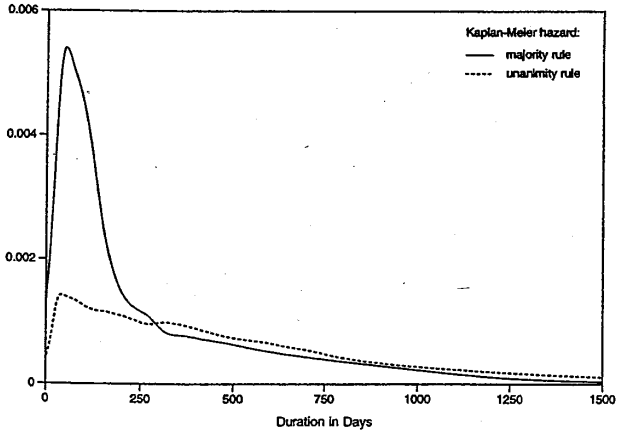


Figure 10a: Survivor Estimates

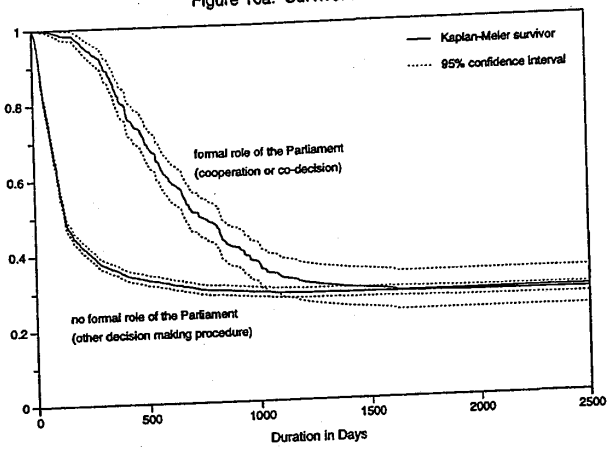


Figure 10b: Smoothed Hazard Estimates

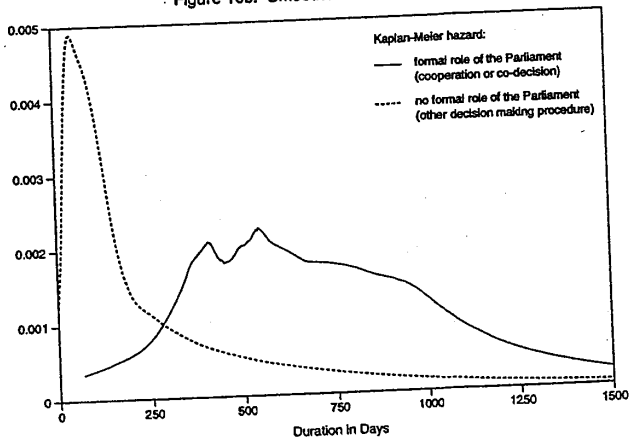

Figure 11a: Survivor Estimates

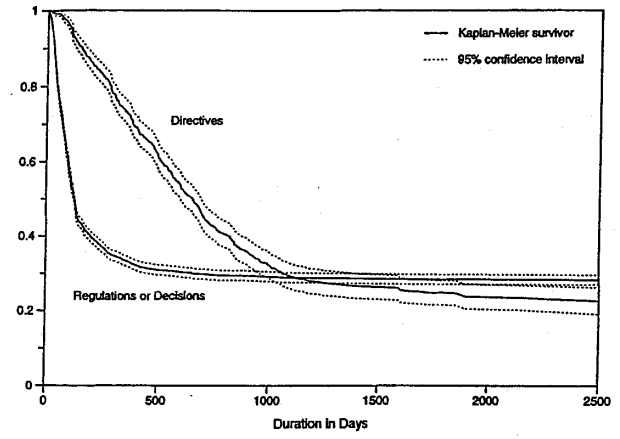


Figure 11b: Smoothed Hazard Estimates

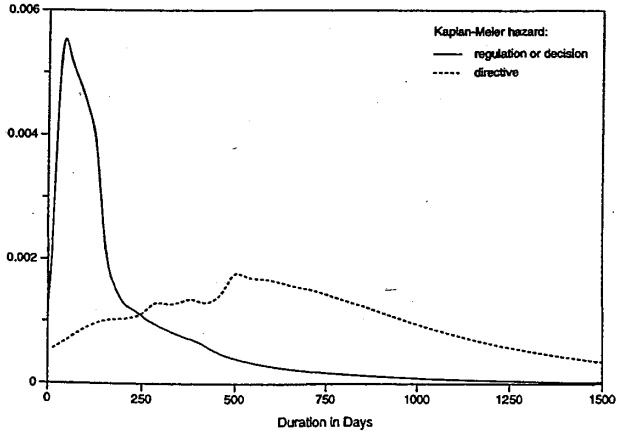


Figure 12: Q(S(t)) vs. log t

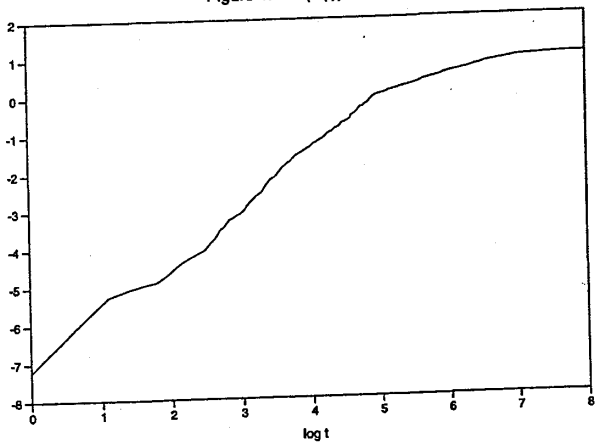

Table 1: Variables and Coding

| Variable | Coding |
|---|---|
| Duration | number of days between Commission proposal and Council decision |
| Decision Rule | 1 = majority rule[a] |
| | 0 = unanimity rule |
| Instrument | 1 = directive |
| | 0 = regulation or decision |
| Issue(x) | 1 = proposal pertains to issue area x[b] |
| | 0 = otherwise |
| Parliament | 1 = formal role of the European Parliament |
| | 0 = otherwise |
| Years(x) | 1 = proposal made in year x |
| | 0 = otherwise |

[a] We did not code majority rule proposals made in 1984 and 1985 as being subject to unanimity rule (until 1986) because of the "Luxembourg compromise." The Luxembourg compromise of 1966, effectively abolished by the Single European Act in 1986, implied that any state had the right to exercise a veto on questions which affected its vital national interests. The implications of the Luxembourg accord for day-to-day decision making are not clear, however. On the one hand, we do not think that invoking the national interest was a credible threat for most of the hundreds of decisions made every year, the majority of which deal with highly technical questions. On the other hand, the Luxembourg accord did produce a norm of consensual decision making. But even before 1966, majority voting was rare. In general, the mere observation of consensual decision making does not mean that the possibility of a majority vote did not influence the dynamics of decision making in the Council. Moreover, by the early 1980s, the practice of consensual decision making had considerably weakened. For example, in 1982, the Council adopted an agricultural price inrease by a qualified majority despite an attempted British veto. Whether the Luxembourg compromise affected the duration of the EU decision making process is an empirical question. For the above reasons, we believe that its impact on proposals made in 1984 and 1985 was marginal. In a future version of this paper, we will use time-dependent covariates to estimate the effect of the Luxembourg accord on the proposal-decision time lag.

[b] We determined the issue area of a proposal by the treaty title to which the provision on which the proposal is based pertains. If the Commission based its proposal on more than one treaty provision and if those provisions pertained to different issue areas, the proposal was counted for each issue area.

Table 2: Descriptive Statistics - Duration (days)

| | Cases | Percent | Median | Min. | Max. |
|---|---|---|---|---|---|
| Proposals[a] | 5138 | 100.0 | 156 | 1 | 4366 |
| -decided[b] | 3708 | 71.5 | 100 | 1 | 3626 |
| -pending[c] | 1475 | 28.5 | | | |

[a] Proposals for binding legislation made by the Commission between 1 Jan 1984 and 31 Dec 1994. Of the total 5299 proposals, 46 cases had to be deleted because of missing or inconsistent data.

[b] Decisions made by the Council on the above proposals by 31 Dec 1995.

[c] Pending proposals are censored on 31 Dec 1995.

Table 3: Descriptive Statistics - Explanatory Variables

| Variable | Value | Frequency | Percent |
|---|---|---|---|
| Decision Rule | 1 = majority rule | 4135 | 79.8 |
| | 0 = unanimity rule | 1003 | 20.2 |
| Parliament | 1 = formal role | 363 | 7.0 |
| | 0 = no formal role | 4775 | 93.0 |
| Instrument | 1 = directive | 755 | 14.6 |
| | 0 = regulation or decision | 4383 | 85.4 |

Table 4: Descriptive Statistics - Issue Area

| Variable | Issue Area | Frequency[a] | Percent |
|---|---|---|---|
| Agriculture | Agriculture | 1985 | 34.2 |
| Common Rules | Competition, Taxation, and Approximation of Laws | 566 | 9.8 |
| Trade | Common Commercial Policy | 1953 | 33.7 |
| Internal Market | Free Movement of Goods, Services, Persons, and Capital | 366 | 6.3 |
| Others | others | 929 | 16.0 |

[a] If the Commission based its proposal on more than one treaty provision and if those provisions pertained to different issue areas, the proposal was counted for each issue area. The Commission based 863 proposals on more than one treaty provision. Of those 863 proposals, 567 pertained to more than one issue area.

Table 5: Hypothesized Effects on the Hazard Rate

| Variable | Effect | Coding |
|---|---|---|
| Decision Rule | + | 1 = majority rule |
| | | 0 = unanimity rule |
| Parliament | − | 1 = formal role |
| | | 0 = no formal role |
| Instrument | − | 1 = directive |
| | | 0 = regulation/directive |
| Agriculture | + | 1 = agriculture |
| | | 0 = others |
| Internal Market | + | 1 = internal market |
| | | 0 = others |
| Trade | + | 1 = trade |
| | | 0 = others |
| Common Rules | + | 1 = common rules |
| | | 0 = others |

Table 6: Estimates of Factors Influencing EU Decision Making Speed

| Variable | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| Constant a | -6.920 (0.076)*** | -5.167 (0.105)*** | -6.599 (0.116)*** |
| Decision Rule | 1.880 (0.081)*** | . | 1.880 (0.081)*** |
| Parliament | -1.651 (0.119)*** | . | -1.594 (0.112)*** |
| Instrument | -0.303 (0.090)*** | . | -0.332 (0.089)*** |
| Agriculture | . | . | . |
| Internal Market | . | . | . |
| Trade | . | . | . |
| Common Rules | . | . | . |
| Year 1985 | . | -0.107 (0.150) | -0.061 (0.130) |
| Year 1986 | . | 0.091 (0.143) | 0.108 (0.124) |
| Year 1987 | . | -0.269 (0.144)* | -0.183 (0.125) |
| Year 1988 | . | -0.197 (0.139) | -0.042 (0.121) |
| Year 1989 | . | -0.419 (0.147)*** | -0.346 (0.128)*** |
| Year 1990 | . | -0.744 (0.144)*** | -0.463 (0.127)*** |
| Year 1991 | . | -0.605 (0.148)*** | -0.476 (0.129)*** |
| Year 1992 | . | -0.706 (0.147)*** | -0.507 (0.130)*** |
| Year 1993 | . | -1.065 (0.152)*** | -0.990 (0.135)*** |
| Year 1994 | . | -0.963 (0.162)*** | -0.881 (0.145)*** |
| Constant b | -0.135 (0.0014)*** | -0.242 (0.014)*** | -0.119 (0.014)*** |
| Log-likelihood | -26374.7 | -26727.9 | -26304.5 |
| N | 5183 | 5183 | 5183 |

Notes: Standard errors are in parentheses. *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.

Table 6 (cont'd)

| Variable | Model 4 | Model 5 |
|---|---|---|
| Constant a | -7.334 (0.084)*** | -7.030 (0.121)*** |
| Decision Rule | 1.500 (0.104)*** | 1.574 (0.103)*** |
| Parliament | -1.281 (0.162)*** | -1.351 (0.162)*** |
| Instrument | -0.567 (0.096)*** | -0.592 (0.096)*** |
| Agriculture | 0.803 (0.090)*** | 0.727 (0.090)*** |
| Internal Market | 1.164 (0.123)*** | 1.082 (0.121)*** |
| Trade | 0.655 (0.090)*** | 0.801 (0.090)*** |
| Common Rules | 0.810 (0.128)*** | 0.801 (0.128)*** |
| Year 1985 | . | -0.019 (0.129) |
| Year 1986 | . | 0.096 (0.123) |
| Year 1987 | . | -0.269 (0.144) |
| Year 1988 | . | 0.018 (0.119) |
| Year 1989 | . | -0.303 (0.126)** |
| Year 1990 | . | -0.424 (0.125)*** |
| Year 1991 | . | -0.447 (0.128)*** |
| Year 1992 | . | -0.510 (0.128)*** |
| Year 1993 | . | -0.894 (0.133)*** |
| Year 1994 | . | -0.769 (0.144)*** |
| Constant b | -0.119 (0.0014)*** | -0.106 (0.014)*** |
| Log-likelihood | -26301.7 | -26239.6 |
| N | 5183 | 5183 |

Table 7: Effect of Variables on EU Decision Making Speed

| | Change in Explanatory Variable | | Change in Time |
|---|---|---|---|
| Variable | From | To | Lag (%) |
| Decision Rule | majority rule | unanimity rule | 382.6 |
| Parliament | no formal role | formal role | 272.5 |
| Instrument | regulation/decision | directive | 80.8 |
| Agriculture | agriculture | others | 106.9 |
| Internal Market | internal market | others | 195.1 |
| Trade | trade | others | 72.9 |
| Common Rules | common rules | others | 122.8 |
| Year 1989 | year 1984 | year 1989 | 35.4 |
| Year 1990 | year 1984 | year 1990 | 52.8 |
| Year 1991 | year 1984 | year 1991 | 56.4 |
| Year 1992 | year 1984 | year 1992 | 66.5 |
| Year 1993 | year 1984 | year 1993 | 144.5 |
| Year 1994 | year 1984 | year 1994 | 115.8 |

Notes: Changes in the proposal-decision time lag are calculated using the coefficient estimates of model 5. Since $\partial E[\log t|x]/\partial x_j = -\beta_j$, the percentage change in the proposal-decision time lag resulting from a unit change in a variable is independent of the value of the other variables. The values for the issue area variables indicate the effect compared to the residual category "other issue areas." The values for the time variables reflect the base year 1984.

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