

Agenda Control and Timing of Bill Initiation: A Temporal Perspective on Coalition Governance in Parliamentary Democracies

THOMAS KÖNIG *University of Mannheim, Germany*

NICK LIN *Academia Sinica, Taiwan*

XIAO LU *University of Mannheim, Germany*

THIAGO N. SILVA *University of Mannheim, Germany*

NIKOLETA YORDANOVA *University of Leiden, Netherlands*

GALINA ZUDENKOVA *TU Dortmund University, Germany*

Although democratic governance imposes temporal constraints, the timing of government policy making activities such as bill initiation is still poorly understood. This holds especially under coalition governments, in which government bills need to find approval by a partner party in parliament. We propose a dynamic temporal perspective in which ministers do not know whether they face a cooperative or competitive partner at the beginning of a term, but they learn this over time and use their agenda control to time further bill initiation in response. A circular regression analysis using data on more than 25,000 government bills from 11 parliamentary democracies over 30 years supports this temporal perspective, showing that ministers initiate bills later in the term when their previous bills have experienced greater scrutiny. Ministers further delay bill initiation when coalition parties' incentives to deviate from compromise increase and when they have less power to constrain their bills' scrutiny.

INTRODUCTION

Government *pro tempore* is an essential characteristic of democratic governance, which establishes temporal limits on office holding and policy making (Linz 1998). Yet, it is still poorly understood whether and how governments' limited term in office affects the timing of their activities. At the start of their term, office holders attempt to respond to their constituencies in a policy-making environment they are not familiar with yet. Over time, however, they can update their beliefs and consider whether the incentives of potential challengers (due to policy divergence) require activity adaptation. Based on their own abilities (due to power), office holders may then adapt the timing of their further activities to optimize the benefits and costs in a policy-making environment


where multiple parties pursue individual policy positions for electoral competition. While such adaptation might follow more complex dynamics—due to election closeness, external events, parliamentary workload, or other experiences—we provide a new account for the temporal dimension of democratic governance that considers the influence of learning on the timing of bill initiation in parliamentary democracies.

Parliamentary democracies, usually ruled by multiple parties under a coalition government, face two major challenges after government formation. In policy making, a dilemma arises when coalition parties pursue divergent policy positions for electoral purposes but can only implement one government bill jointly (Laver and Shepsle 1996; Martin and Vanberg 2005; 2014; 2020b; Müller and Strøm 1999). In addition to this dilemma, a temporal challenge exists for the passage of government bills within a term that may limit the implementation of the governmental policy agenda when coalition policy divergence increases the risk of gridlock (Bäck and Carroll 2018; Tsebelis 2002) with obstruction and delay (Bell 2018; Döring 1995; Martin 2004). From a principal-agent perspective on coalition government, the office-holding minister enjoys a first-mover advantage for drafting government bills in her portfolio, but strong parliamentary institutions allow coalition partners to scrutinize and amend those bills, which can lengthen the duration of the policy-making process (Becher 2010; Carroll and Cox 2012; Martin and Vanberg 2011).


Taking these two challenges together, we argue that ministers' first-mover advantage is constrained by the type of their coalition partner—a *cooperative* type who immediately approves their bills under a parliamentary


Thomas König , Professor, School of Social Sciences, University of Mannheim, Germany, koenig@uni-mannheim.de.

Nick Lin , Assistant Research Fellow, Institute of Political Science, Academia Sinica, Taiwan, nlin@gate.sinica.edu.tw.

Xiao Lu , Postdoctoral Researcher, Collaborative Research Center SFB 884 “Political Economy of Reforms,” University of Mannheim, Germany, xiao.lu@gess.uni-mannheim.de.

Thiago N. Silva , Postdoctoral Researcher, Collaborative Research Center SFB 884 “Political Economy of Reforms,” University of Mannheim, Germany, tnsilva@uni-mannheim.de.

Nikoleta Yordanova , Associate Professor, Institute of Political Science, University of Leiden, Netherlands, n.yordanova@fsw.leidenuniv.nl.

Galina Zudenkova , Professor, Department of Economics, TU Dortmund University, Germany, galina.zudenkova@tu-dortmund.de.

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majority or a *competitive* type who pursues a vote-maximizing motivation that opens the gate for more scrutiny of those bills in parliament.¹ At the beginning of the term, ministers may not know the type of their coalition partner in their portfolio, but—after experiencing scrutiny or immediate approval of their bills in parliament—they can learn it and time the initiation of their subsequent bills to prevent defeat, extensive modification, or delay.² In other words, ministers can learn from their experienced scrutiny and use their agenda control to time the initiation of bills within their portfolios over a term. If a minister encounters a *cooperative* partner, she can implement bills more speedily in her portfolio, which promises electoral benefits by showing responsiveness to her constituency. However, an encounter with a *competitive* partner might result in late bill initiation, risking partial implementation of the minister's policy agenda and disappointment among her constituency.

Our argument provides a theoretical foundation for changes in policy agenda, where ministers seek position-taking policy benefits by early initiation of government bills to demonstrate responsiveness to their constituency (e.g., Huber 1996; Martin 2004; Martin and Vanberg 2005; 2011; Powell 2004), benefits that late initiation can decrease. Building on existing research on coalition government, we acknowledge that the coalition partner can theoretically constrain ministerial policy making, but our study moves this literature forward, highlighting the consequences of the use of institutional control mechanisms of coalition partners (such as parliamentary scrutiny) and the learning process of ministers in response to experienced scrutiny. We theorize that, over the term, ministers update their beliefs about the partner's type based on their experiences with parliamentary scrutiny (or immediate approval) of their bills in parliament. We derive novel predictions that (1) ministers initiate their bills later in the term the greater the scrutiny they have experienced and that (2) this effect of experienced scrutiny on the timing of bill initiation is stronger the greater the divergence of policy positions between coalition parties and (3) the fewer the powers ministers have to constrain scrutiny activities in parliament.

Our dynamic temporal perspective on democratic governance also complements the more general literature on legislative obstruction (Bell 2018; Fong and Krehbiel 2018; Patty 2015),³ which is considered a prominent phenomenon in parliamentary democracies

¹ According to Downs (1957, 159), vote maximizing is the basic motive underlying the behavior of parties.

² Even if ministers have good reasons to trust their peers at the beginning of the term (after the bargaining process during government formation), due to commitment problems coalition parties are unable to ensure credible promises about future policies (Bäck and Lindvall 2015; Klüver and Spoon 2020; Zubek and Klüver 2013).

³ Compared with the limited obstruction model of Fong and Krehbiel (2018) in which when proposing her bills the agenda setter decides on the policy agenda constrained by time, we posit that ministers learn *over time* the type of partner, who may also bear costs of challenging bills.

(Bücker 1989; Cox and McCubbins 2011; Döring 1995) and bicameral systems (Tsebelis and Money 1997). Our dynamic temporal perspective allows for ministers learning from past policy-making experiences and adapting their behavior in order to reduce the amount of scrutiny and improve the governmental record. Compared with existing static theories, this dynamic temporal perspective improves our understanding of the relative temporal effects of democratic governance. In particular for intermediate and sufficiently low levels of responsiveness, our predictions differ from a one-period perspective without learning. The static and the dynamic perspectives predict early initiation in her portfolio only when the office holder can expect high position-taking benefits for her party.

Instead of providing a more complex theory, we account for such effects empirically. Methodologically, the analysis of periodical and portfolio-specific timing of government bills requires consideration of the temporal structure of the data on legislative cycles in parliamentary democracies. By treating terms as new cycles of policy-making activities, in which ministers can learn about their partner type from experienced scrutiny of their government bills, we account for the cyclical structure of the data using a circular regression analysis (Gill and Hangartner 2010) and devise corresponding visualization tools to investigate the timing of bill initiation.⁴ As our explanandum is defined by the relative temporal location of bill initiation within a term, we investigate the agenda control of ministers over the immediate or late initiation of government bills.

THE TEMPORAL DIMENSION OF COALITION POLICY MAKING IN PARLIAMENTARY DEMOCRACIES

Democratic governance imposes temporal limits on policy making. It limits the duration of office holding and terminates the duration of policy-making processes with the dissolution of parliament, the end of parliamentary sessions, or the conclusion of legislative terms (Döring 1995; 2001). For policy making in coalition governments, this temporal dimension may also enhance coalition tensions and restrict policy agenda changes. According to Martin and Vanberg (2011), for example, early bill initiation gives ministers an opportunity to demonstrate responsiveness to their constituency that they are working hard on their behalf.⁵ When elections approach, Strobl et al. (2021) show that coalition governments are less likely to

⁴ In Appendix I: Theory, Data, and Method, we provide information on the advantages of using circular regression analysis compared with linear estimators (among other estimators), and we emphasize the methodological contribution of our paper for future research that adopts a temporal perspective on policy-making processes.

⁵ As recent research finds, the strongest predictors of voters' attribution of policy-making influence to coalition parties are the parties' ministerial roles and their parliamentary seat shares (Fortunato et al. 2021).

implement (austerity) policies that risk alienating voters (see also, König and Wenzelburger 2017).

More generally, Martin (2004) found that coalition governments usually pursue an accommodating policy agenda, in which government bills with little policy divergence of coalition parties have priority, while others are postponed. Conversely, Sagarzazu and Klüver (2017) showed that at the beginning and at the end of the term the strategy of differentiation between coalition partners predominates, while coalition compromise is more likely in the middle of the term. As coalition participation influences voters' perceptions of partisan policy positions (Fortunato, Silva, and Williams 2018; Fortunato and Stevenson 2013), coalition members have incentives to differentiate themselves from their coalition partners to improve their electoral chances (Fortunato 2019).

These incentives can generate principal-agent problems in government policy making between ministers and their coalition partners, especially when the policy divergence of coalition parties increases (Martin and Vanberg 2005; Müller and Strøm 1999; Strøm and Müller 2000; Strøm, Müller, and Bergman 2003). These problems continue to exist despite attempts to alleviate them via screening of coalition partners (Kiewiet and McCubbins 1991; Saalfeld 2000; Strøm 1995; 2000), ministerial portfolio allocation (Bäck, Debus, and Dumont 2011; Bassi 2013; 2017; Laver and Schofield 1990; Laver and Shepsle 1996; Martin and Stevenson 2001), and formal agreements on coalition compromise (Bäck, Müller, and Nyblade 2017; Bowler et al. 2016; Indridason and Kristinsson 2013; Klüver and Bäck 2019; Moury 2013; Müller and Strøm 1999; 2008; Strøm and Müller 2000; Timmermans 2017).

According to this literature, higher coalition policy divergence increases the incentives of ministers—who have the task and expertise to draft government bills within their portfolios—to drift from previously agreed upon coalition compromise by proposing “hostile” bills, while it motivates the coalition partner to coalition policing by scrutinizing and amending such proposals in parliament to avoid policy losses (Becher 2010; Huber 1996; Laver and Schofield 1990; Laver and Shepsle 1996; Martin 2011; Martin and Vanberg 2005; 2020a; Tavits 2008). This, however, risks inaction and delay, with high electoral costs for the responsible parties when the costs for coalition policing exceed the benefits of jointly implementing government bills (Duch and Stevenson 2008; Fortunato et al. 2021).

This dilemma of coalition governance has sparked prolific research on the conditions under which ministers propose “hostile” bills and coalition partners (successfully) scrutinize such bills. From a spatial perspective on policy divergence, Laver and Shepsle's (1996) prominent model of portfolio allocation suggests that ministers can autonomously implement their policy position within their portfolios when their party holds the median position in parliament. Under a constrained environment, Martin and Vanberg's (2011) model of coalition bargains also predicts that ministers initiate hostile proposals—government bills representing the policy position of their party instead of

the previously agreed upon coalition compromise—for seeking electoral position-taking benefits.

Studies contend that in parliamentary democracies with strong institutions, coalition parties can overcome their dilemma and implement coalition compromise by allowing coalition partners to scrutinize and amend government bills in parliament, even if ministers pursue a maximal position-taking strategy by always introducing hostile proposals (Becher 2010; Goodhart 2013; Martin and Vanberg 2005; 2014; 2020a).⁶ Yet, scrutinizing government bills in parliament delays government policy making and raises challenging costs for coalition parties (Martin and Vanberg 2011).⁷ Also, while ministers can only implement a maximal position-taking strategy when the challenging costs of (weak) institutions for scrutiny exceed the policy benefits of the coalition partner, higher ministerial costs of being scrutinized and amended risk delay and gridlock, with crucial electoral costs for both the partner and the office-holding ministerial party (Bäck and Carroll 2018; Martin 2004; Tsebelis 2002).

Parliamentary institutions thus offer an imperfect mechanism for coalition partners to control ministerial discretion (Goodhart 2013). Empirically, it is difficult (if not impossible) to provide evidence for the level of imperfection as the coalition partner or opposition parties can also use parliamentary institutions to scrutinize and amend government bills (Fortunato 2019). Yet, the conventional wisdom and empirical evidence of government policy making are that the amount of parliamentary scrutiny increases with the level of policy divergence within coalition governments (Martin and Vanberg 2014; 2020a; Pedrazzani and Zucchini 2013). Furthermore, if a minister could anticipate how much scrutiny her bills will undergo in parliament, she could use her agenda control over the timing of bills to postpone bill initiation when she expects costly scrutiny, or otherwise, to initiate her bills immediately.

⁶ Coalition partners can also make use of alternative institutional instruments such as the appointment of junior ministers (Thies 2001), drawing of coalition agreements and policy guidelines (Indridason and Kristinsson 2013; Klüver and Bäck 2019; Moury 2010; Müller and Strøm 2003; 2008), and the selection of parliamentary committee chairs (Carroll and Cox 2012; Lipsmeyer and Pierce 2011), which reduce the challenging costs of coalition parties (Martin and Vanberg 2005; 2020a; Strøm, Müller, and Bergman 2008; Strøm, Müller, and Smith 2010). Furthermore, prime ministers can use the vote of confidence (Huber 1996), appoint ministers that would minimize the policy distance within the coalition (Bäck, Debus, and Müller 2016), and reshuffle ministerial portfolios (Indridason and Kam 2008) to keep hostile coalition members in line.

⁷ The partner has to convene parliamentary hearings, invite experts, and eventually mobilize opposition parties to reduce informational deficits and to amend hostile proposals and implement compromise. When coalition parties pursue different policy positions, challenging government bills may still have positive implications for the partner that offset the challenging costs by correcting for ministerial drift and negative ones for the ministerial office holder. Apart from the negative reputation ministers can get for having drafted a hostile government bill at the expense of coalition compromise, a lengthy monitoring procedure reduces the likelihood that ministers can implement their preferred policy agenda on time, thus reducing the policy gains of the minister's party.

Although ministers may not know perfectly the type of their partners at the beginning of the term, we can expect adjustments in ministerial policy-making activities over time as ministers get to know better their partners.

THEORY: MINISTERIAL LEARNING AND TIMING OF BILL INITIATION

To complement the predominant static perspective on coalition policy making, we introduce a parsimonious dynamic theory of government bill initiation timing.⁸ Even though coalition policy making is a complex procedure, we simplify our argument to the introduction of only two pieces of bills to provide an intuitive and tractable setting for modeling ministerial learning and the timing of bill initiation. For simplicity, we distinguish between a ministerial office holder and a partner within a majority coalition government.⁹

The minister is responsible for drafting two bills in her portfolio over a term.¹⁰ She introduces the first bill at the beginning of the term and then decides when—early or late in the term—to introduce the second bill.¹¹ When the government and parliamentary majorities coincide, the coalition partner plays the role of a parliamentary scrutiny “gatekeeper,” who has the choice of approving immediately or allowing for scrutiny of the bills in parliament.

Because time is a scarce resource for government policy making within a term, scrutiny can impede the policy-making process and constrain the government’s ability to approve its policy agenda (Cox and McCubbins 2007; 2011; Döring 1995; Fong and Krehbiel 2018).¹² We assume that the coalition partner can be of two types: He can be either a *competitive* type, who mainly cares about his performance in the next election and has vote-maximizing motivations, or a *cooperative* type, who is predominantly concerned about the effectiveness of coalition policy making. In other words, the

type reflects whether, in addition to policy concerns, the partner has particular individual electoral concerns for the next election.

To understand this concept, it is important to distinguish between the party as a single political actor and affiliated members as current agents of the party. While long-run ideological policy preferences of the party are likely to persist over time, the short-run vote-maximizing motivations of partisan agents might vary across portfolios and from one term to another. That is why even though we model parties as single actors, the underlying assumption is that the partner’s type reflects motivations of the current ministers as party agents and is therefore randomly drawn by nature.¹³

The legislative process develops as follows, whereby stages 1 and 2 reflect the static and stages 3 and 4 add the dynamic perspective:

1. The partner’s type (*competitive* or *cooperative*) is randomly determined by nature. To capture the information asymmetry of the coalition parties, we assume that the partner knows his own type, whereas the minister has the prior knowledge that the partner is competitive with probability q .
2. The minister introduces her first bill, which the partner either immediately approves or allows for scrutiny. If the partner approves, then the bill passes with the support of the parliamentary majority and the bill implements the policy position of the ministerial party.¹⁴ If the partner does not approve the bill immediately, then the bill undergoes a monitoring process and is passed with amendments at the expense of the policy position of the ministerial party (and more in the interests of the partner’s party).
3. The minister observes whether her first bill has been immediately approved or scrutinized and updates her beliefs about the partner’s type. She decides then whether to initiate the second bill early or late in the term. Figure 1 depicts the parties’ choices and outcomes for the second ministerial bill (the complete game tree is presented in Figure B1 of Appendix I: Theory, Data, and Method).
4. Once the second bill is introduced, the partner either immediately approves or allows for scrutiny. If the partner approves, then the bill passes with the support of the parliamentary majority and implements

⁸ To illustrate our theory, we include anecdotal evidence in Appendix A of the supplementary material.

⁹ We refer to the minister as “she” and to the partner as “he.”

¹⁰ Note that in our setting, the minister controls the policy agenda and so has a monopoly to initiate bills. If we assume instead that coalition parties compete over the agenda and simultaneously introduce bills, then logrolling incentives might arise, leading to “trading of favors” such that the partner approves ministerial bills in exchange for the minister’s approval of her bills (Aksoy 2012; Carrubba and Volden 2000; Hortala-Vallve 2011; Stratmann 1997). In this case, the anticipation of trading of favors might provide the minister with different incentives and motivate her to time bill initiation accordingly. This topic—while definitely relevant—is beyond the scope of this paper and left for future research.

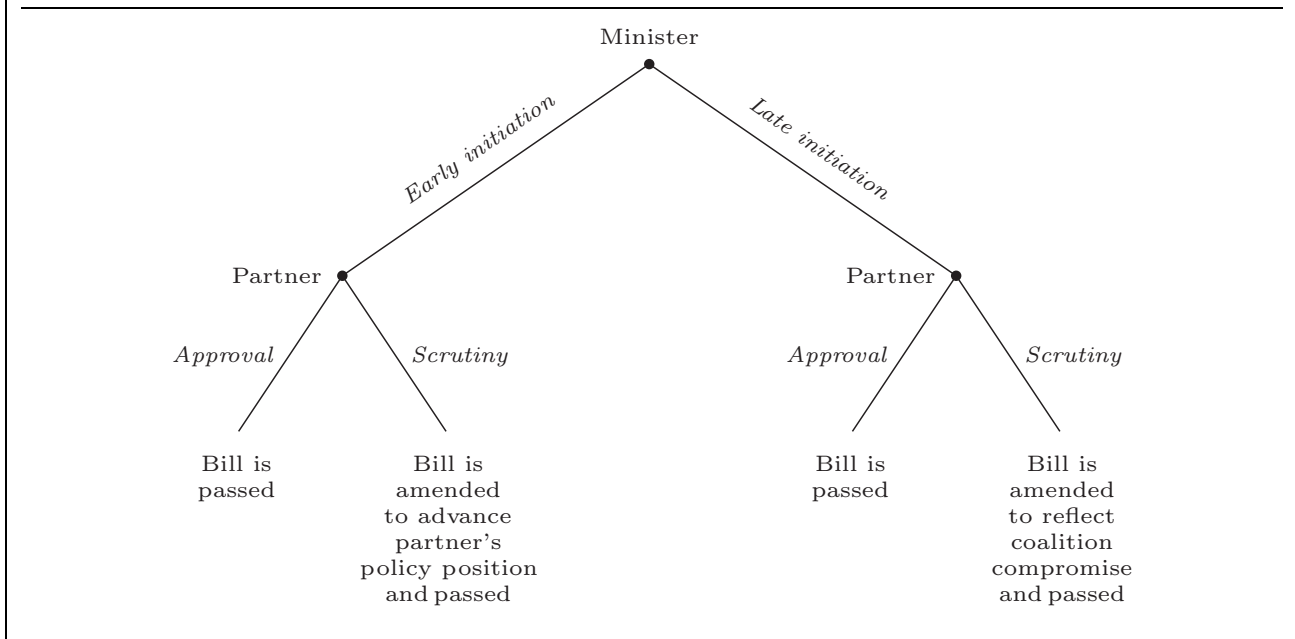
¹¹ In Appendix C, we extend our setting to allow for timing of not only the second bill but also of the first bill initiation. According to our findings presented in Appendix C, the timing of the first bill initiation (early or late in the term) has no influence on ministerial learning and timing of the second bill initiation.

¹² According to Fong and Krehbiel’s (2018) model on limited obstruction, the obstructer decides whether to let the bill pass quickly in one unit of time or to delay it via dilatory tactics so that passage of the setter’s bill takes two units of time.

¹³ Even though ministers would like to infer the partners’ types during the process of coalition formation, the *competitive* partner type has no incentive to reveal his vote-maximizing motivations during this stage—risking the success of coalition formation—and so will pretend to be perceived as a *cooperative* type. The minister realizes this and so understands that even though the partner seems to be a *cooperative* type during the coalition formation process, he can be a *competitive* type when it comes to policy making afterwards. This implies that the minister cannot fully learn the partner’s type at the time of coalition formation.

¹⁴ Following the literature on party discipline in parliamentary democracies (Bowler, Farrell, and Katz 1999; Depauw and Martin 2009; Diermeier and Feddersen 1998; Kam 2009; 2014), we assume that coalition parties control their members and so can pass bills whenever the minister and the partner have agreed on it.

FIGURE 1. Second Bill: Parties' Choices and Outcomes



the policy position of the ministerial party. If the partner does not approve the bill immediately, then the outcome depends on whether the minister has initiated the second bill early or late in the term. An early-initiated scrutinized bill is passed with amendments at the expense of the policy position of the ministerial party (and in the interests of the partner's party). Scrutiny of a late-initiated bill cannot be—due to time constraints—completed by the end of the term to advance the policy position of the partner's party but rather results in the passage of a compromise bill.¹⁵

We next formalize the payoffs of the coalition parties that account for their dilemma. Following the (spatial) literature on policy divergence of coalition partners, the parties have different policy positions that create principal-agent problems, as they can only implement government bills jointly. If a government bill passes without scrutiny, then the policy payoffs change from coalition compromise 0 toward $+X$ for the minister and $-X$ for the partner, where $X > 0$.¹⁶ However, if an

early-initiated bill gets scrutinized and subsequently amended to reflect the partner's policy position, then the policy payoff to the minister is $-\frac{X}{\alpha}$ and the policy payoff to the partner is $\frac{X}{\alpha}$, where $\alpha \geq 1$ denotes the minister's power to constrain scrutiny activities (e.g., by holding the median position, having a large seat share in parliament, etc.). In turn, the policy payoffs to both coalition parties from implementing the coalition compromise are normalized to 0.¹⁷ Therefore, if a bill is initiated late, subsequently scrutinized, and then amended to reflect the coalition compromise, then the parties' policy payoffs amount to 0.

According to Martin and Vanberg (2011), early bill initiation allows the minister to demonstrate responsiveness to her constituency, that she is working hard on their behalf; thus, she generates position-taking benefits $B > 0$ for herself. Late initiation, in turn, is associated with temporary inaction and so generates no position-taking benefits.¹⁸ As for the partner, the process of scrutinizing government bills imposes challenging costs. However, the *competitive* partner derives individual electoral benefits from scrutinized bills. We assume that these benefits compensate him for the challenging costs. In other words, for the *competitive* partner, the costs are offset by the individual electoral benefits he receives as a result of scrutinized bills. The *cooperative* partner type does not have vote-maximizing motivations but incurs the challenging costs

¹⁵ We do not model the maintenance of the status quo (i.e., passing no bills), as we assume that a ministerial proposal is a Pareto improvement over the status quo. It follows that both coalition parties have no incentives to keep the status quo policy and so we can rule this option out. However, our key results also hold for a setting in which the partner prefers the status quo policy to a ministerial proposal and late-initiated scrutinized bills remain pending at the end of the term. This model setting is available upon request.

¹⁶ This corresponds to the concept of a hostile bill, which is conventionally used in the empirical analyses of policy making of coalition governments (Martin and Vanberg 2005; 2011; 2014; 2020a). Intuitively, the parties' commitment to a previously-agreed coalition compromise is not enforceable and so the minister prefers to use her policy agenda control to promote her own policy position.

¹⁷ In other words, we assume a one-dimensional policy space and so can model parties' preferred policies as situated equidistantly around a compromise policy 0. Each party prefers policies that are closer to its most preferred policy over those that are further away.

¹⁸ One can interpret these position-taking benefits as electoral payoffs the minister anticipates from her constituency as a reward for her responsiveness.

of scrutinized bills, which we denote by C . To highlight the incentive divergence between the two types, we posit that challenging costs C are large enough that they exceed the partner's policy benefit $X + \frac{X}{\alpha}$ from the passage of the amended bill that advances his policy position instead of the initial bill.

To find a solution for our dynamic perspective on bill initiation timing, we search for a perfect Bayesian equilibrium that consists of the partner's reactions to the first and second bills, the minister's beliefs about the partner's type, and the minister's subsequent decision about early or late initiation of the second bill. Specifically, the partner's decisions to approve the bill immediately or allow it for scrutiny are optimal given his type, incentives, and expectations about early or late initiation of the second bill. In turn, the minister uses the partner's reaction to her first bill to draw inferences about the partner's (*competitive* or *cooperative*) type. Given these inferences and her incentives, the minister optimally decides whether to initiate the second bill early or late.

In Appendix B, we present the formal analysis and prove that there exists a perfect Bayesian equilibrium such that the *competitive* partner type allows for scrutiny of both bills, but the *cooperative* partner type approves both bills immediately. The minister learns that she faces a *competitive* (*cooperative*) partner after her first bill has been scrutinized (immediately approved). For $B > \frac{X}{\alpha}$, the minister initiates the second bill early in the term. Intuitively, when the minister's policy loss $\frac{X}{\alpha}$ is relatively low compared with her position-taking benefit B , then she has incentives for early initiation even if she learns that her partner is a *competitive* type who will allow for scrutiny of the second bill. However, for $B \leq \frac{X}{\alpha}$, the minister opts for late initiation after her first bill has been scrutinized and for early initiation after her first bill has been immediately approved. In this case, the minister's position-taking benefit B does not outweigh the policy loss $\frac{X}{\alpha}$. As a result, the minister prefers to hinder the scrutiny process by late bill initiation after she learns that her partner is a *competitive* type who would allow for scrutiny again. It follows that the equilibrium probability of late initiation amounts to

$$\begin{cases} 0 & \text{if } B > \frac{X}{\alpha}, \\ q & \text{if } B \leq \frac{X}{\alpha}. \end{cases}$$

That is, for $B > \frac{X}{\alpha}$, the second bill is initiated early, whereas for $B \leq \frac{X}{\alpha}$, it is initiated late when the partner is a *competitive* type (recall that the partner is *competitive* with probability q).¹⁹

¹⁹ In Appendix D, we consider a model extension in which the minister not only decides on the timing of the second bill but also can adjust the bill content in favor of the partner's policy interests at the expense of her own policy agenda. We find that after scrutiny of the first bill, the minister still prefers to initiate the second bill late for sufficiently low B even though she has an option to adjust the bill content and initiate it early in the term. This implies that our

Empirical Implications

Our theory suggests that the minister learns about her policy-making environment after observing whether her past bills have been scrutinized or immediately approved by her partner.²⁰ Compared with the one-period static view, our dynamic perspective makes different predictions for intermediate and sufficiently low levels of position-taking benefits. Only when the office holder can expect high position-taking benefits for her party, the static and the dynamic models predict early initiation. Specifically, greater experienced scrutiny reveals to the minister that she faces a *competitive* partner and that she will be constrained in her attempt to respond to her constituency, giving her incentives for late initiation of government bills. Immediate approval of bills, in turn, indicates to the minister that her partner is a *cooperative* type, and she has incentives to generate position-taking benefits from early bill initiation. This implies the following hypothesis:

Hypothesis 1. *The more scrutiny the minister's bills have experienced, the later in the term she initiates subsequent bills.*

Moreover, our theoretical analysis reveals that the relationship between experienced scrutiny and partner type is affected by the policy payoff X , the size of which depends on the policy divergence of coalition parties. As the policy divergence increases, the policy payoff X also increases. Intuitively, the more divergent the policy positions, the more policy losses the minister incurs from a type that scrutinizes and amends her bills in parliament. Therefore, after having learned that she faces a *competitive* partner, she has more incentives for late initiation of bills to hinder further scrutiny. This leads to our second hypothesis:

Hypothesis 2. *The higher the policy divergence between the coalition parties, the stronger the positive effect of experienced scrutiny on late initiation of bills.*

Furthermore, the relationship between experienced scrutiny and timing of bill initiation is affected by the minister's power α to constrain scrutiny activities. The more powerful the minister, the less likely parliamentary scrutiny and amendment of her bills are. Consequently, the minister incurs fewer policy losses, reducing her incentives to hinder further scrutiny by late initiation. This implies our third hypothesis:

predictions about the relationship between experienced scrutiny and late initiation of government bills hold even when the minister can adjust the content of her bills.

²⁰ For instance, in the scrutiny process the partner can question the ministerial office holder, introduce amendments to the ministerial proposal, and make speeches to justify his own policy position. All these behaviors help the partner signal to his voters that the party is fighting the good fight (Martin and Vanberg 2008; 2011) and allow the minister to learn about the type of partner.

Hypothesis 3. *The more powerful the minister is, the weaker the positive effect of experienced scrutiny on late initiation of bills.*

Our hypotheses are consistent with intuitions about the dynamics of coalition policy making in light of the trade-offs that the minister and her partner face. Having experienced immediate approval, the minister infers a *cooperative* partner type. She, thus, anticipates further immediate approval and so initiates subsequent bills early within the term. In turn, when she believes that she faces a *competitive* partner type who has vote-maximizing motivations at her expense, experienced scrutiny reveals a less supportive policy-making environment. Under the expectation of further scrutiny of her bills and subsequent policy losses from passing amended bills, the minister might opt for late initiation of subsequent bills. However, the more powerful the minister, the more she can counteract further scrutiny in parliament and so the lower her incentives for late initiation of bills after having experienced scrutiny.

EMPIRICAL STRATEGY

Sample Selection and Unit of Analysis

To examine our hypotheses, we have collected data from 11 European parliamentary democracies, covering all government bills from coalition governments available in the following countries' online parliamentary databases during the period 1981–2014: Belgium (1988–2010), Czech Republic (1993–2013), Denmark (1985–2011), Estonia (2007–2011), Finland (1989–2010), Germany (1981–2012), Hungary (1998–2014), Latvia (2002–2011), the Netherlands (1998–2012), Norway (1989–2013), and Poland (1997–2011). This is the most comprehensive cross-national data set on government bills assembled to date, covering a variety of parliamentary democracies, which differ in size, wealth, culture, history, and democratic foundation but are governed by coalition parties.

Our unit of analysis is an individual proposal of a “government bill” introduced into the lower house of parliaments. We have 25,477 such observations in total. For each bill, we use legal documents to identify which ministry has proposed it and, based on this, its policy area.²¹

Variables and Measurement

Dependent variable

Our dependent variable captures the relative temporal location of bill initiation within a term.²² To make the

measurement of bill initiation comparable across coalition governments with different duration, we divide the number of days from the start date of government to the date of bill initiation by the number of days of the overall observed government duration. For example, if a government started on January 1, 2010, and ended on December 31, 2013, lasting for a total government duration of four years or 1,460 days, a government bill initiated on January 1, 2011, (365 days after the government formation) is located at the 25th percentile (365/1,460) of the term. The resulting measure ranges from 0th percentile to 100th percentile, where the first days of government fall in the 0th percentile and the last days of government fall in the 100th percentile of the term.

To map percentiles into cycles of terms, we transform the percentage rate into a radius measure using the formula $r = 2\pi$, which maps from [0%,100%] to [0, 2π] on a circle. Therefore, our dependent variable can theoretically range from 0 to 2π . As presented in Table 1, our dependent variable *bill temporal location* empirically varies from 0.13 to 6.28 in our data, with small values indicating early initiations and high values indicating late initiations.²³ In substantive terms, the minimum value of 0.13 represents the first and earliest government bill, the maximum value of 6.28 (2π) the last bill initiated within the longest term in our dataset.

Figure 2 depicts the relative timing and number of government bills from the 11 parliamentary democracies to illustrate our circular outcomes in terms of timing of bill initiation. In this descriptive plot, we distinguish between four periods of a term: the first, second, third, and fourth periods. The circular plots show that the number of government bills differs across countries and across different periods of the terms. Countries such as Denmark, Finland, and Latvia have a larger number of government bills initiated than the other countries included in our data. In countries such as Denmark, Germany, Latvia, and the Netherlands, most government bills are initiated in the third period of the term, while in countries such as Belgium, Finland, and Norway, most government bills are introduced at the end of the term. Furthermore, the Czech Republic, Estonia, and Poland experience fewer government bills, most of which are equally distributed in the second and third periods of the term. The descriptive statistics suggest that we cover a variety of temporal decisions on government bill initiation of coalition governments.

Independent variables

Our first hypothesis postulates that greater experienced scrutiny of previous bills leads to late initiation of subsequent bills within the term. To measure experienced scrutiny of government bills, building on Martin

²¹ Following Bäck, Debus, and Dumont's (2011) categorization of ministerial portfolios, we classify all bills into 13 policy areas: agriculture, defense, economy, education, environment, finance, foreign, health, industry, interior, justice, labor, and social affairs. When there are multiple ministries in charge of the same bill, we identify the policy area of the bill based on the first ministry in the list.

²² Overall, about 81% of the government bills were approved, which underlines the government policy-making dominance in

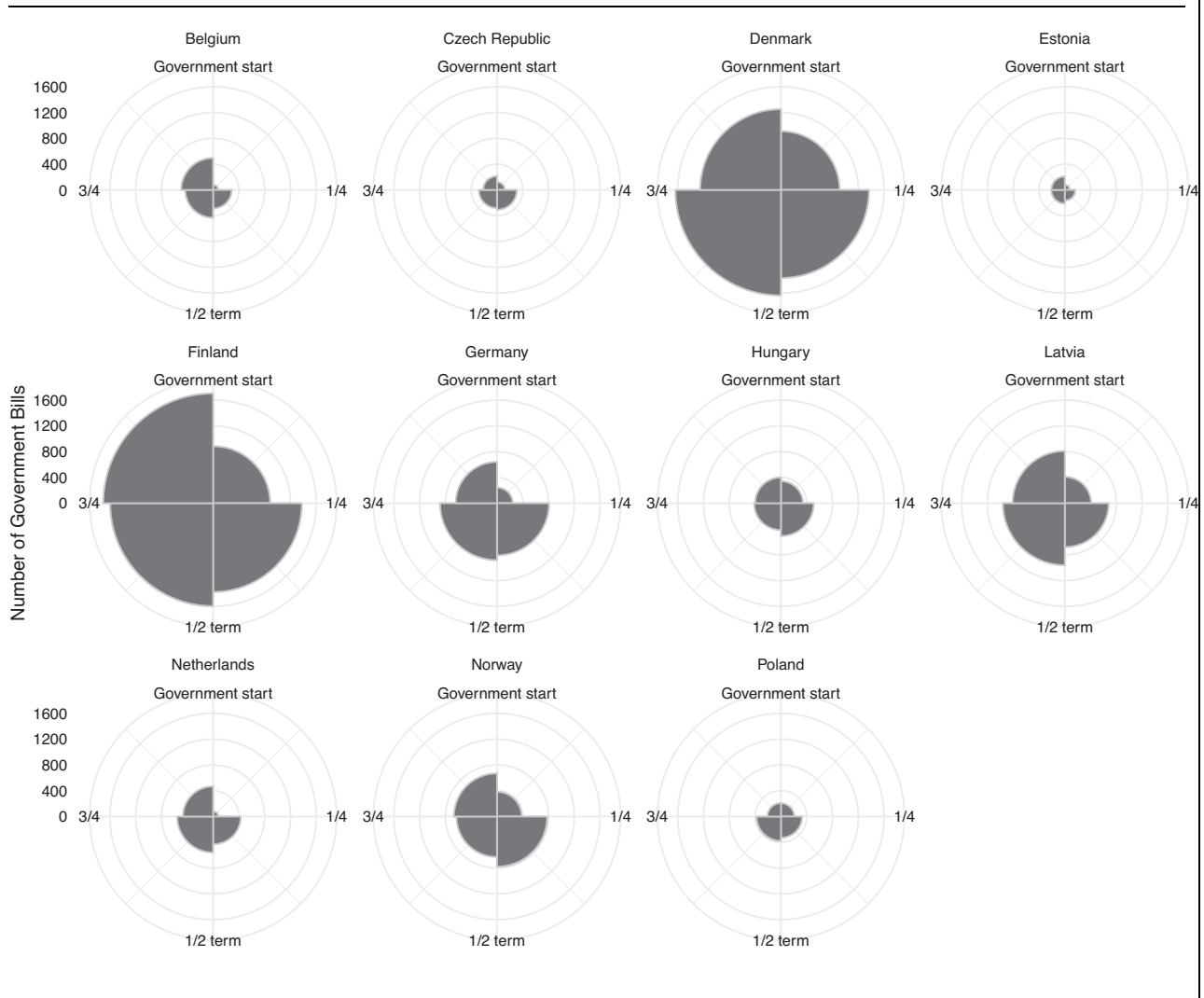
parliamentary democracies (for country-specific passage rates, see Appendix E).

²³ Descriptive statistics of our variables for each of the countries included in our analyses can be seen in Appendix E.

TABLE 1. Variables and Descriptive Statistics

	Mean	SD	Min	Max	N
Bill temporal location	3.46	1.57	0.13	6.28	25,477
Experienced scrutiny	96.95	70.49	1.00	488.33	25,477
Coalition policy divergence	2.58	2.11	0.02	17.93	25,477
Policy saliency	0.85	0.97	0.01	2.49	25,477
Minister's party size	0.25	0.13	0.01	0.59	25,477
Minister median party	0.26	0.44	0.00	1.00	25,477
Opposition policy divergence	0.18	0.16	0.00	1.08	25,477
Government duration	1,043.14	413.81	68.00	1,623	25,477

FIGURE 2. Relative Timing and Number of Government Bills within Terms



and Vanberg (2004) we consider the duration (in days) that a bill takes to be enacted from the date of bill introduction. Bills that are scrutinized tend to require more time in the parliamentary policy-making process than bills that are not subject to scrutiny. Given the circular nature of our data structure, our measurement

is calculated as follows: for bill i initiated at time T in term A in policy area K , $duration_i = \text{mean}(\text{duration of passed bills initiated in term } A, \text{ concluded before } T, \text{ in area } K)$. In other words, for any observation *experienced scrutiny* is based on the average duration of past bills in that policy area adopted up until the date of the

new bill. In our dataset, experienced scrutiny ranges from 1 to 488,²⁴ with a mean of 97 days and a standard deviation of 70 days.²⁵

According to our second hypothesis, we expect the effect of *experienced scrutiny* on late bill initiation to be stronger under higher policy divergence among coalition parties. Measuring policy divergence of coalition parties requires knowledge of the policy positions of the ministerial party in charge of the government bill and the partner parties in the coalition. To measure these area-specific policy positions, we rely on the Comparative Manifesto Project (CMP) data that cover parliamentary parties since 1945 (Volkens et al. 2019). The CMP splits raw data of party manifestos into quasi-sentences categorized into 56 categories that are used to construct party positions in those categories. Thus, given the availability of manifestos, the CMP data provides term-varying measures of partisan policy positions that parties report themselves.

Because not all categories are informative and distinct, Lowe et al. (2011) developed a scaling method based on log odds ratios of quantities of quasi-sentences. The scaled policy positions are shown to be superior to the raw measures of the Comparative Manifesto Project. We adopt this scaling approach and recalculate partisan policy positions in 13 ministerial portfolios as in Bäck, Debus, and Dumont (2011). For each term and each ministerial portfolio, the policy divergence of coalition parties is measured as the sum of portfolio-specific differences between the ministerial party and its coalition partners.²⁶ The greater the policy

distance between the minister-proponent and her partners, the higher the policy divergence among coalition parties. In our data, the variable *coalition policy divergence* ranges from a minimum value of 0.02 (almost no divergence) to a maximum divergence of 17.93.

To examine our third hypothesis, according to which we expect a weaker effect of *experienced scrutiny* on late bill initiation in the face of powerful ministers, we include two new variables: whether the minister's party holds the median policy position in parliament and the relative size of the minister's party in parliament. From the other parties' point of view, these variables approximate the constraints on their capability to scrutinize and amend ministerial bills. According to spatial models, government policy making is highly influenced by the position of the median party in parliament, as long as the median party approximates the median voter's position (Baron 1991; Laver and Schofield 1990; Morelli 1999). In this sense, a minister holding the median position in parliament should have a greater ability to avoid amendments and bring the government bill closer to her ideal policy position compared with an off-median partner (Laver and Shepsle 1996). To capture whether ministers take the median position in parliament, we consider the ordered area-specific positions of coalition parties and code *minister median party* as 1 if the minister takes the area-specific median position in parliament.

When compared with smaller parties, larger parties in parliamentary systems are usually in a privileged position to scrutinize bills and have a greater floor time for speeches in parliament (Martin and Vanberg 2008). In several parliamentary democracies, a larger seat share translates into control of more legislative committee chairs, which leads to powers to schedule public hearings and to consult policy experts and societal groups, as well as a privileged position in terms of extracting policy information (Kim and Loewenberg 2005; Martin and Vanberg 2004; 2005; Mattson and Strøm 1995). As a consequence, larger ministerial parties should be more able to avoid scrutiny and amendments to their bills. We measure the relative size of the minister's party by her party's seat share in parliament.

Control variables

Coalition parties may attach different saliency across policy areas that can facilitate coalition formation, portfolio allocation, and common policy making (Bäck, Debus, and Dumont 2011; Klüver and Spoon 2020; Klüver and Sagarzazu 2016). We use saliency to approximate the incentives to generate position-taking benefits from early bill initiation. When a government bill represents a policy in an area that is more salient to

²⁴ The minimum value of 1 raises the question of how quickly a parliament can approve a bill. The distribution of *experienced scrutiny* by country can be seen in Figure E1 of Appendix E. The comparison of the plots in Figure E1 indicates that the median value for *experienced scrutiny* is greater than 50 days in all our cases, with some countries having a median value greater than 100 days (e.g., Belgium, Czech Republic, Germany, and the Netherlands). The surprising value of 1 comes from Denmark, and although we could not rule out this observation as an entry mistake in the country's legislative data repository, we decided for keeping all the observations in our analyses.

²⁵ The zero values for *experienced scrutiny* were deleted from our dataset (1,462 cases, 5% of our observations). These values depict early initiated bills (i.e., the first initiated bills in the government's term) that were not yet approved by parliament until the first approved bill. Therefore, these are cases where no information is available for ministers regarding the passage and scrutiny of their bills, and fall outside our model's empirical implications. As a robustness check of our main results, we also conduct our main models keeping the zero values for *experienced scrutiny*. The results are robust to our main findings as described in section Results and Discussion.

²⁶ As described below, we also include the variables *policy saliency* and *minister's party size* in our models to identify how our measurement of *coalition policy divergence* affects bill initiation timing. Alternatively, *coalition policy divergence* could be weighted by *policy saliency* and the *minister's party size* (similar to our measurement of *opposition policy divergence*). By using this alternative measurement, however, we would not know whether *coalition policy divergence*, the *minister's party size*, or *policy saliency* is driving our results. Moreover, the inclusion of *minister's party size* as one of the three variables interacted in the estimation to test our third hypothesis would raise a further issue in using this alternative measurement. As a constitutive

term of the triple interaction, to avoid bias, we have to include *minister's party size* as a control in model 3 while also using it to weight our alternative measurement of *coalition policy divergence*. Therefore, we opted for the unweighted measure of *coalition policy divergence* and the inclusion of the *minister's party size* and *policy saliency* as control variables in our main analyses.

the party of the minister, we expect an early timing of bill initiation; otherwise, when the minister initiates the bill late in the term, she risks forgoing considerable position-taking benefits. Therefore, we control for area-specific saliency based on counting relative mentions of a specific policy category in a given party's manifesto related to a portfolio that the bill belongs. Following Lowe et al. (2011), we log transform the counts so that the measure is robust to extreme values.

Given that opposition parties may also vary in their incentives to scrutinize government bills and thus affect their duration when they collaborate in parliament, we control for the cohesiveness of their policy positions. Specifically, we calculate the variance of the policy positions of opposition parties in parliament. To further account for their party size and policy saliency, we weight the policy positions of opposition parties with their seat shares and the saliency opposition parties attach to different policy areas.²⁷ Because the length of terms differs across elections and countries, we also control for observed government duration, measured in days. In Table 1, we show the descriptive statistics of the variables included in our analyses.

Method

To empirically examine the timing of government bills in the cycle of a term, we consider the circular nature of our data.²⁸ Following our theory, we treat terms as new cycles of legislative activities, which avoids counting bills from previous terms as bills from a new term. Following Woldendorp, Keman, and Budge (2000) and Seki and Williams (2014), we define a new term by changes in the composition of the coalition government (either by a change in party composition or prime minister).²⁹ Unlike linear regression estimators, which ignore the bounds of the dependent variable, and aggregated measures such as counts of bills within a certain period, which risk ecological fallacy, a promising way to analyze our type of data is to use circular regression (Gill and Hangartner 2010; Mulder and Klugkist 2017).³⁰ Circular regression considers the

relative temporal location of government bills within a term when estimating how and to what extent a variable influences the timing of an event (e.g., early or late event) within a cycle.

In our analysis, circular regression enables examining the timing of bill initiation at the government level. To draw inference and quantify the uncertainty of the estimates, we apply a Bayesian version of circular regression, which incorporates priors for posterior sampling using the Metropolis–Hastings sampler (Mulder and Klugkist 2017). Our dependent variable *bill timing* is a continuous variable on a unit circle ranging from 0 to 2π , which indicates the relative temporal location of a bill on the circle of a term. Our statistical model takes the following form for the estimation of model 1, which examines our first hypothesis on late government bill initiation when the minister has experienced greater scrutiny of her previous bills:

$$\text{Bill timing} = \mu_0 + g^{-1}(\beta_1 \text{Experienced scrutiny} + \mathbf{X}\phi + \varepsilon),$$

where μ_0 on the right-hand side of the equation measures circular intercepts and $g^{-1}(\cdot)$ is a transformation function mapping values to the circular space. Although there are multiple choices available for $g^{-1}(\cdot)$ (see e.g., Fisher and Lee 1992), we follow the most common practice and assume that $g^{-1}(\cdot)$ takes the form of $2 \arctan(\cdot)$, with β s as the coefficients to be estimated (Gill and Hangartner 2010). X is a matrix of observations on our control variables with parameter estimates vector ϕ , and ε is the error term.

To account for the heterogeneity of the positive effect of experienced scrutiny on late bill initiation by the level of policy divergence between the coalition parties, we consider the interaction between *experienced scrutiny* and *coalition policy divergence*. The corresponding estimation examines our second hypothesis with the following specification (model 2):

$$\begin{aligned} \text{Bill timing} = & \mu_0 + g^{-1} \\ & (\beta_1 \text{Experienced scrutiny} + \beta_2 \text{Coalition policy divergence} \\ & + \beta_3 \text{Experienced scrutiny} \times \text{Coalition policy divergence} \\ & + \mathbf{X}\phi + \varepsilon). \end{aligned}$$

Following our theoretical model and disentangling each effect of interest, we examine hypotheses 2 and 3 separately because policy divergence and ministerial power might affect the relationship between parliamentary scrutiny and timing of bill initiation through different channels: the former directly affects the policy payoffs, whereas the latter determines extent to which the scrutiny action can be executed.³¹ Although policy divergence between the coalition parties magnifies the

ignore the bounds of the dependent variable which are within an interval of 2π by construction, linear estimators will falsely predict the effects of variables on timing.

³¹ A simultaneous model for hypotheses 2 and 3 would make the interpretation of our results cumbersome, and as demonstrated by Hainmueller, Mummolo, and Xu (2019), the issue of a lack of

²⁷ In our data, the opposition policy divergence ranges from 0 to 1.08, with a mean value of 0.18 and a standard deviation of 0.16 (for country-specific information, see the tables in Appendix E). The minimum value of 0 represents cases in which either there is only one party comprising the opposition force or opposition parties are located at the same position of our measurement, in terms of party size and policy saliency.

²⁸ For an overview of circular data, see Lee (2010).

²⁹ More specifically, a term continues in the absence of (1) a change in prime ministership, (2) a change in party composition of the government (i.e., parties moving in or out, but not reshuffles within the government), or (3) resignation of government within the electoral cycle. In this sense, every new term in our dataset must have at least one change in terms of the composition of coalition parties, consequently changing the dynamics in which the learning process was taking place in the previous government (Seki and Williams 2014).

³⁰ For a brief introduction to circular regression, see Appendix F of the supplementary material. Given the cyclical nature of our data, in Appendix F we highlight the appropriateness of using circular regression analysis instead of linear regression analysis (among other estimators). We demonstrate that because linear regression models

TABLE 2. The Effects of Experienced Scrutiny, Coalition Policy Divergence, and Powerful Ministers on Timing of Bill Initiation

	Model 1 (Hypothesis 1)	Model 2 (Hypothesis 2)	Model 3 (Hypothesis 3)
Experienced scrutiny	0.49 [0.46, 0.52]	0.36 [0.33, 0.40]	0.58 [0.52, 0.63]
Experienced scrutiny × coal. pol. divergence		0.31 [0.25, 0.37]	
Exp. scrutiny × min. party size × min. median party			-0.36 [-0.49, -0.25]
Minister median party			-0.65 [-1.02, -0.29]
Minister's party size	-0.03 [-0.05, -0.01]	-0.02 [-0.04, -0.01]	0.07 [0.02, 0.12]
Coalition policy divergence	0.19 [0.16, 0.21]	-0.04 [-0.08, 0.01]	0.23 [0.20, 0.25]
Policy saliency	-0.19 [-0.21, -0.16]	-0.21 [-0.23, -0.18]	-0.16 [-0.18, -0.13]
Opposition policy divergence	-0.07 [-0.09, -0.05]	-0.09 [-0.11, -0.07]	-0.08 [-0.10, -0.06]
Government duration	-0.26 [-0.29, -0.24]	-0.26 [-0.28, -0.23]	-0.26 [-0.29, -0.24]
Experienced scrutiny × minister's party size			-0.15 [-0.21, -0.09]
Experienced scrutiny × minister median party			0.49 [0.31, 0.69]
Minister's party size × Minister median party			0.17 [0.11, 0.23]
Intercept	0.21 [0.18, 0.25]	0.22 [0.18, 0.25]	0.41 [0.29, 0.53]

Note: Dependent Variable: Temporal location of bill initiations within a term. MCMC run for 100,000 iterations; first 1,000 iterations as burn-ins. Lower and upper bounds of 95% credible intervals in brackets. N: 25,477 government bills.

policy losses the minister incurs in case of scrutiny, the minister's powers allow her to constrain scrutiny activities to some extent. To examine our third hypothesis on the power of the minister to constrain scrutiny activities, we use two measures of parliamentary powers: minister's party holding the median policy position in parliament (*minister median party*) and the size of the minister's party in terms of their relative seat share in parliament (*minister's party size*). This results in the following model 3:

$$\text{Bill timing} = \mu_0 + g^{-1}(\beta_1 \text{Experienced scrutiny} + \beta_2 \text{Minister's party size} + \beta_3 \text{Minister median party} + \beta_4 \text{Experienced scrutiny} \times \text{Minister's party size} + \beta_5 \text{Experienced scrutiny} \times \text{Minister median party} + \beta_6 \text{Minister's party size} \times \text{Minister median party} + \beta_7 \text{Experienced scrutiny} \times \text{Minister's party size} \times \text{Minister median party} + \mathbf{X}\phi + \varepsilon).$$

To estimate the models, we run 100,000 Markov chain Monte Carlo (MCMC) iterations and take the first

1,000 iterations as burn-ins. The convergence diagnostics presented in Appendix G make us confident that all chains have appropriately converged.³²

RESULTS AND DISCUSSION

In Table 2, we present the results of our model estimations. The estimates for the independent variables depict the effect of each variable on the timing of the bill initiation (earlier or later in a term), holding all other variables constant. Positive estimates indicate that government bills are introduced later within a term, whereas negative estimates mean that they are introduced earlier within a term.

According to our hypothesis 1, we expect late initiation of government bills the greater the experienced scrutiny of previous bills within a minister's portfolio. This expectation is supported by the results depicted in model 1 of Table 2. As indicated by the estimate for *experienced scrutiny*, holding all control variables

common support for the moderator becomes more pronounced when adding interaction terms to a multiplicative interaction model.

³² Because the log-likelihood function of circular regression is not globally concave, we also show in Appendix G that our sampler is likely to have explored the global optimum of the posterior distribution rather than being trapped in some local optima.

constant, the greater the experienced scrutiny of their previous bills, the later ministers introduce subsequent bills within the term. This estimate is positive and significant (as the range of values of the estimate does not cross the value of zero between the lower and upper bounds of the 95% credible intervals within brackets). Following our theory, after ministers experience scrutiny and learn that they face a *competitive* partner type, they are more likely to initiate new government bills late in the term.

The substantive effect of *experienced scrutiny* on the timing of bill initiation (as estimated in model 1 of Table 2) is depicted graphically in Figure 3. Within the circle of Figure 3, the periods of the term are represented as percentages (from 0% at the beginning to 100% at the end of the term). The range in the figure goes from 1 to 60—that is, from the minimum to approximately the median value of *experienced scrutiny*. This range is depicted by the vertical line from the small circle to the larger circle in Figure 3. The blue curve inside the circle shows the predicted value (with a 95% credible interval) of the effect of our covariate on the timing of bill initiation, holding all other variables constant. From the fitted blue curve, we can observe that, on average, an increase in *experienced scrutiny* from 1 day to 60 days (median value) leads to later initiation of new bills by about 50% within a term.

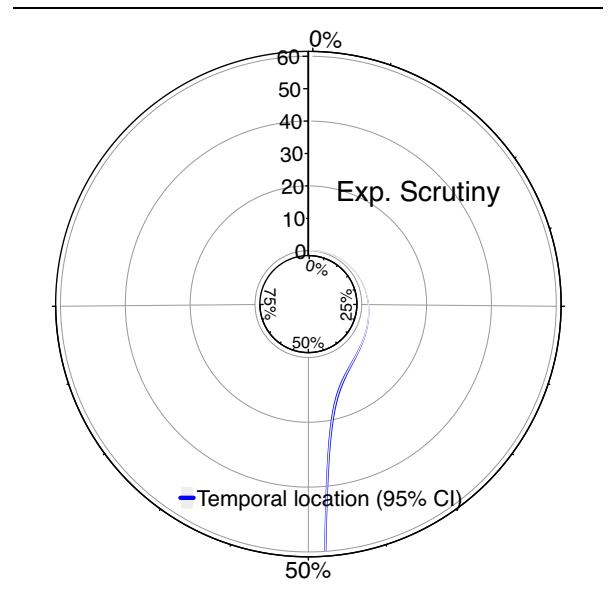
Our analysis so far has supported our first hypothesis, according to which greater experienced scrutiny of government bills results in late initiation of new bills. Based on our second hypothesis, this positive effect of *experienced scrutiny* on late bill initiation should be stronger the higher the policy divergence between the coalition parties. The result presented in model 2 of Table 2 supports this prediction. The substantive effect of this positive relationship between *experienced scrutiny* and *coalition policy divergence* is depicted with a graphical illustration of the marginal effects of *experienced scrutiny* on the timing of bill initiation (*y-axis*), conditional on the variation of *coalition policy divergence* (*x-axis*) in Figure 4.

Figure 4 highlights our finding that the effect of experienced scrutiny on late bill initiation (based on the positive fitted line with a 95% credible interval) is enhanced by a higher policy divergence within the coalition government, holding all control variables constant.³³ The positive slope depicted in Figure 4 suggests that in an environment comprised of competitive partners, late initiation of government bills becomes more predictable the higher the policy divergence among the parties that comprise the coalition government.

According to our third hypothesis, if the minister has powers to constrain or preclude scrutiny activities in parliament, we should observe a weakening in the

³³ To demonstrate that the risk of extrapolation to areas with little support of the data does not influence our conclusion, we adopt a more flexible estimation strategy in Appendix K by binning *coalition policy divergence* (the conditional covariate in Figure 4) into three equal-sized groups and estimating the nonlinear interaction effects. Figure K1 in the supplementary material illustrates the consistency of our original results by adopting a more flexible estimation strategy.

FIGURE 3. The Effect of Experienced Scrutiny on the Timing of Bill Initiation



Note: Results based on the estimates presented in model 1 of Table 2. The figure shows that, on average, an increase in *experienced scrutiny* from 1 day to 60 days (median value) leads to a later initiation by about 50% within a term.

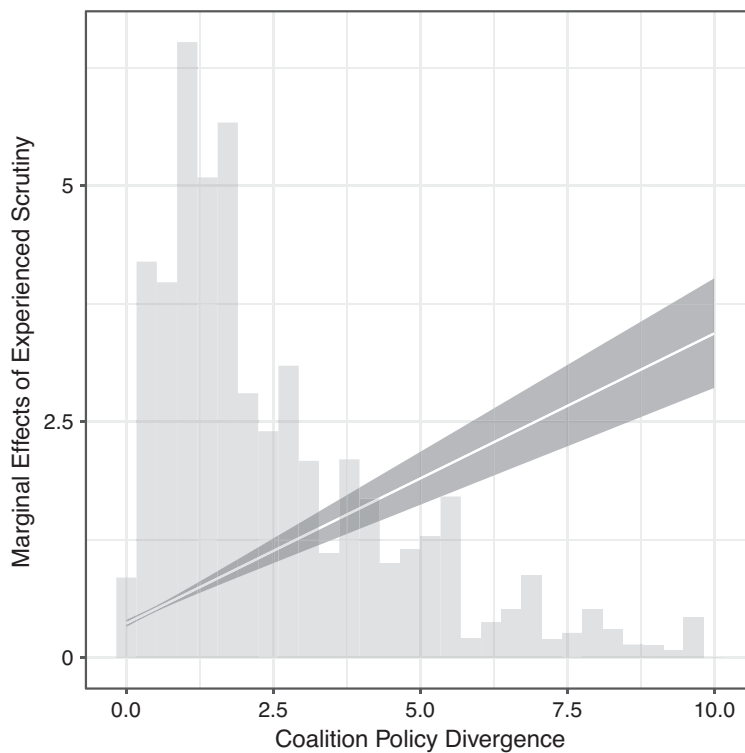
positive effect of *experienced scrutiny* on late bill initiation. To examine this prediction, we approximate the parliamentary powers of the minister by her party holding the median policy position in parliament and by her party's relative size in terms of parliamentary seat share. In support of hypothesis 3, we can see in model 3 of Table 2 that the effect of *experienced scrutiny* on late initiation is substantially reduced when we add a triple interaction to our model between *experienced scrutiny*, *minister's party size*, and *minister median party*. We can better depict this result by interpreting the marginal effects of *experienced scrutiny* on the timing of bill initiation, conditional on the variation of both *minister's party size* and *minister median party* (see Figure 5 below).³⁴

The *solid-line* slope in Figure 5 depicts the marginal effects of *experienced scrutiny* on the timing of bill initiation (with a 95% credible interval) when the

³⁴ We calculate the marginal effects from the interaction term in the following way. Consider for example the following simple case where we have estimated the equation $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_1 X_2$. To identify the conditional effects of X_1 on Y conditional on X_2 , we differentiate the equation by X_1 :

$$\frac{\partial Y}{\partial X_1} = \frac{\partial(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_1 X_2)}{\partial X_1} = \beta_1 + \beta_3 X_2.$$

The resulting conditional effect of X_1 on Y conditional on X_2 is thus $\beta_1 + \beta_3 X_2$. For circular regression, we consider linear combination of covariates within the link function $g^{-1}(\cdot)$: $g(\mu_0) + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_1 X_2$, in which the intercept term $g(\mu_0)$ does not depend on the values of X_1 . Therefore, the conditional effects of X_1 conditional on X_2 follow the above form except that the outcome Y is now transformed by the strictly increasing link function $g(\cdot)$.

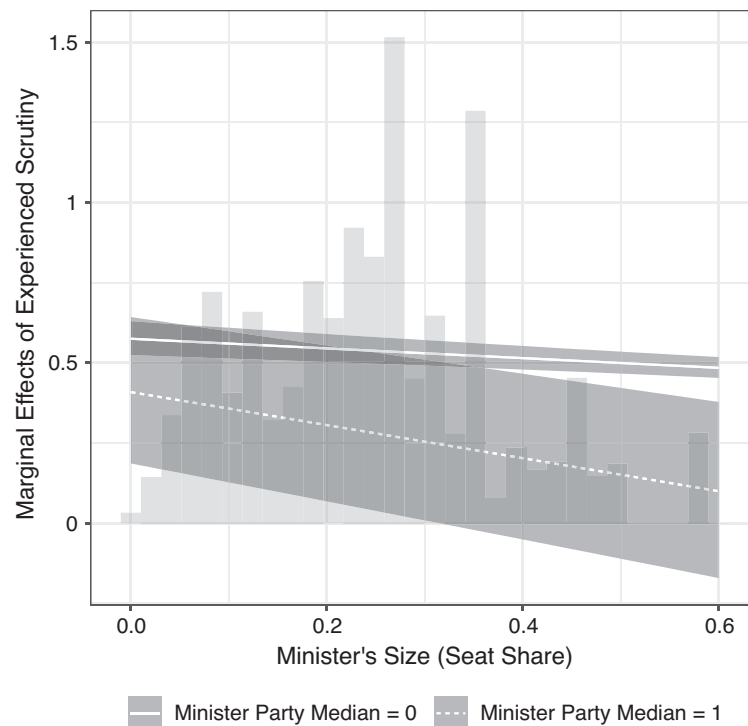
FIGURE 4. Marginal Effects of Experienced Scrutiny on Bill Initiation Timing, Conditional on Coalition Policy Divergence

Note: The higher the *coalition policy divergence*, the greater the effect of *experienced scrutiny* on late bill initiation. Results based on the estimates presented in model 2 of Table 2. The vertical bars in the background of the figure depict the distribution of the variable *coalition policy divergence*.

minister's party does not hold the median policy position in parliament, conditional on the size of the minister's party. The *dashed-line* slope depicts the marginal effects of *experienced scrutiny* on the timing of bill initiation (with a 95% credible interval) when the minister's party holds the median position in parliament (i.e., *minister median party* equals 1), conditional on the size of the minister's party. As highlighted in Figure 5, the positive effect of *experienced scrutiny* on late bill initiation becomes weaker the greater the size of the minister's party in parliament. Moreover, this effect is further weakened when the minister's party holds the median policy position in parliament. More precisely, when the party of the minister holds the median policy position in parliament, the magnitude of the effect is indistinguishable among small ministerial parties (as indicated by the two predicted lines overlapping for ministerial parties holding less than 35% of the seats). However, as the minister's party holding the median policy position in parliament becomes larger (in our case, controlling more than 35% of the seats), the positive effect of *experienced scrutiny* on late bill initiation becomes smaller, eventually nonsignificant when approaching the maximum value for minister's party size in our sample (0.59). This result supports our hypothesis 3 and reveals the

importance of considering both the median policy position and the size of the ministers' party when examining our expectation that powerful ministers are capable to incur less scrutiny and have fewer incentives to initiate bills late in the term.

The results from our control variables also present interesting and expected patterns. Holding all other variables constant, bills addressing policy areas of high saliency for the ministerial party are, on average, initiated earlier within the term (indicated by the negative and significant estimate for *policy saliency*). As these bills are probably highly visible to the constituencies of ministerial parties, this underlines their strategy of generating position-taking benefits by early bill initiation. A higher share of parliamentary seats also seems to translate into earlier initiation of bills, as indicated by the negative and significant estimate for *minister's party size* in model 1 and model 2 of Table 2. Furthermore, the greater the policy divergence between parties that comprise the opposition (*opposition policy divergence*), the earlier the minister introduces a government bill. This is also to be expected because a lower cohesiveness of opposition parties reduces the risk of scrutiny and thus allows ministers to generate position-taking benefits. The negative and significant estimate for *government duration* can be interpreted as constraints of

FIGURE 5. Marginal Effects of Experienced Scrutiny on the Timing of Bill Initiation, Conditional on the Minister's Party Size and Minister Median Party

Note: The vertical bars in the background of the figure depict the distribution of the variable *minister's size (seat share)*.

the electoral calendar and voter demands imposed on the minister. The minister cannot delay her bills indefinitely at the risk of not having time before the next election to approve her policy agenda and being penalized by her constituency in the election. Thus, as the term passes by, the likelihood that ministers will initiate government bills increases. Another explanation that we cannot dismiss is that the effect of observed government duration might be driven by very short-lived coalition governments, which inevitably have less time to initiate bills.³⁵

To test the consistency of our findings, we have conducted several robustness checks, which are presented in Appendix II: Goodness of Fit and Robustness Checks of the supplementary material. The results

from these robustness checks strengthen the main findings (presented in Table 2)³⁶ of this study on the dynamic temporal perspective on coalition policy making, giving us confidence that ministers initiate bills later within a term when their past bills have experienced greater scrutiny and that this positive effect of experienced scrutiny on late bill initiation is stronger the greater the coalition parties' incentives to implement their ideal policy positions (i.e., the higher the policy divergence between the coalition parties) and the less powerful that ministers are to preclude scrutiny activities in parliament.

CONCLUSION

We developed a conceptual framework to study the temporal dimension of democratic governance and analyzed the timing of government bill initiation in parliamentary democracies. Our dynamic temporal perspective can be applied to other political

³⁵ This raises concern on the potential endogeneity (to the policy-making process) of government duration. If government duration is endogenous to policy making, we would be incorrectly considering late initiation in short governments (e.g., one-year governments) that would otherwise be early initiations according to an ex ante expected duration (e.g., four-year governments). The termination of these governments (making them short governments) could then be a consequence, for example, of a high degree of competitive partners, obstructing the coalition from governing. In response to this concern, we run additional analyses to capture the effects of or separate the ex ante expected duration of government from the actual duration of governments in Appendix H. Our original results are consistent with these robustness checks, increasing our confidence in the independence assumption of our statistical analyses regarding endogeneity of government duration to the policy-making process.

³⁶ The country FE test for our third hypothesis is the only exception, leading to an insignificant estimate for the triple interactive term between *experienced scrutiny*, *minister's party size*, and *minister median party* (see model 1 of Table J5 in the supplementary material). This deviation suggests that particular institutional features within parliamentary democracies are a topic worthy of further exploration in future research.

phenomena and contexts in which policy makers learn about their counterparts from their experiences within a prescribed period such as parliamentary sessions, legislative terms, and other decision-making processes. Compared with the predominant one-shot analyses of their policy-making interactions, we model and examine the temporal interaction between a proposer and the type of her counterpart. We assume that the proposing policy maker does not know whether she is confronted with a *competitive* or *cooperative* partner type at the beginning. Over time, however, she may learn the partner's type from experiencing responses to her proposals and adapt her behavior by timing the initiation of subsequent proposals.

Although our analysis follows the rules of parliamentary democracies by fixing the duration of the term, during which the proposer learns about her partner's type, our theory can be extended to consider endogenous duration with the partner having an exit option that may trigger the collapse of the partnership. The equilibrium behavior will then depend on costs or benefits incurred from termination and might affect the proposer's incentives for later initiation. We believe that this topic is a promising avenue for future research on the temporal dimension of democratic governance.

According to our analysis of the timing of government bill initiation, the agenda setter forms a belief about her partner's type after experiencing scrutiny to her bills and times her further bill initiation based on (1) her belief in facing a specific partner type, (2) the policy incentives her partner has to challenge her bills, and (3) her powers to preclude the scrutiny of her bills.³⁷ Compared with existing theories on coalition governance, our dynamic temporal perspective introduces an additional learning channel to derive hypotheses on policy-making experiences of ministers and their responses to the type of partner they face during the term. The empirical results lend support to our predictions based on evidence from 11 parliamentary democracies, demonstrating that proposing ministers learn about the type of their coalition partners from experienced scrutiny and adapt their bill initiation behavior and timing over a term. Our sample differs in size, wealth, culture, history, and democratic foundation of parliamentary democracies under coalition governments. Given a large sample of government bills, our data can be further updated and applied to other political activities that allow for learning over time.

Methodologically, we demonstrate that rather than imposing strong assumptions on linear estimators, we can account for the cyclical structure of our data by using a Bayesian circular regression model. Because

³⁷ Bill complexity constitutes another factor that might influence the timing of bill initiation. On the one hand, the minister needs more time to work on complex bills and thus may introduce them later on. On the other hand, it takes the partner more time to fully examine these complex bills, which is likely to shape the minister's belief about the type of her partner and therefore the timing of bill initiation. In both cases, bill complexity leads to the late initiation of legislation. We leave this hypothesis to be addressed in future research.

democratic governance imposes temporal limits to policy-making activities, we estimated the relative temporal location of observed bill initiation to examine the empirical implications derived from our dynamic theory. We hope that the use of this method encourages further studies adopting a temporal perspective, which we believe is suited for a broader scholarship using data of cyclical nature in political science such as data on electoral, legislative, congressional, and parliamentary terms. Beyond the adequacy of our methodological approach, in the supplementary material we provide model extensions that highlight the stability of our empirical implications theoretically and also conduct several robustness checks that strengthen our main empirical findings on the timing of bill initiation.

In addition to our methodological and empirical contribution, we believe that our theoretical focus on the temporal dimension of policy making can stimulate further research on democratic governance. This temporal dimension implies that policy makers attempt to optimize their behavior by timing their activities, which—in our case, of coalition governments—depends on the type of their partnership. Similar dependencies may exist from other counterparts, such as opposition parties, bicameral actors, presidents, or courts. Furthermore, the optimal behavior of these actors may change over time and differ across policy areas wherein policy makers can experience other types of dependencies such as from the voters, interest groups, or international actors. Apart from additional applications to other phenomena, we hope that our parsimonious dynamic setting will encourage scholars to extend our theory for the study of more complex interactions of democratic governance.

SUPPLEMENTARY MATERIALS

To view supplementary material for this article, please visit <http://dx.doi.org/10.1017/S0003055421000897>.

DATA AVAILABILITY STATEMENT

Replication files, including R code and data, are openly available at the American Political Science Review Dataverse: <https://doi.org/10.7910/DVN/OFCAAE>.

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CONFLICT OF INTEREST

The authors declare no ethical issues or conflicts of interest in this research.

ETHICAL STANDARDS

The authors affirm this research did not involve human subjects.

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