Political Uncertainty and the Vote of Confidence Procedure

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Abstract

I develop a model to study the effects of political uncertainty on a prime minister's ability to use a vote of confidence procedure to determine policy outcomes. In contrast to previous studies, I model political uncertainty as an area in policy space in which the probability of the prime minister's proposal being accepted varies continuously, and find that under certain circumstances the presence of political uncertainty can increase the ability of the prime minister to extract policy rents. This novel result corresponds to an interpretation of political uncertainty as a result of an intraparty bargaining problem within the legislature, and allows the model to explain certain cases that sit oddly with previous work.

1 Introduction

Legislative institutions have an important influence on the legislative process and policy outcomes (Anderson, Butler, and Harbridge (2016), Lynch, Madonna, and Roberts (2016), McGrath, Rogowski, and Ryan (2015), Döring (2001), Cox (2000), Rasch (2000)). Beginning with Lupia and Strøm (1995), the literature addresses how institutions mediate bargaining among coalition partners, and between the government and the parliament, after government formation. This literature emphasizes the role of divergent preferences among coalition partners, information asymmetries (Martin and Vanberg, 2004, 2005; Thies, 2001), and the distributional consequences of procedural rules (Heller, 2001).

One institutional feature that is particularly salient to intragovernment bargaining is the confidence motion. By invoking a vote of confidence procedure, the prime minister can tie the survival of the government to the passage of a bill. If the motion is approved by parliament, the bill is passed exactly in the form that the government proposed. If it fails, the government falls; in systems where the prime minister has the power to dissolve parliament and call new elections, she often does so at this time. This gives the prime minister a "last-mover advantage" that can, depending on the particular institutional environment, substantially increase her power over the policymaking process (Tsebelis, 2002).

Previous work has explored the ramifications of the confidence motion. Several theoretical treatments have found that the confidence motion increases the power of the prime minister (Baron, 1998; Diermeier and Feddersen, 1998; Huber, 1996). Huber and McCarty (2001) add the qualification that the confidence vote only empowers the prime minister if it can be invoked unilaterally. Moreover, by providing incentives for the coalition partners, and factions within the parties, to coordinate on a common policy, the confidence vote procedure helps the government to present a united front (Diermeier and Feddersen, 1998; Franchino and Høyland, 2009).

The confidence vote can also be perilous, because a miscalculation on the PM's part can result in her fall from power. One way for the parliament to mitigate the PM's advantage is to make use of political uncertainty, which Huber and McCarty define as "the lack of information that party leaders often have about the precise policies that other participants in the governing coalition will support on the floor of the parliament." Political uncertainty, in this sense, has also been applied to models of interparty bargaining and government formation (Golder, 2010; Strøm, 1994).

The inclusion of political uncertainty allows for the possibility of inefficient termination. By making the PM uncertain ex ante about which policies could be passed, the parliament can make the PM more cautious in the proposals she ties to a vote of confidence, reducing her advantage (Huber and McCarty, 2001). My contribution is to show that under certain circumstances, the distributional effect of political uncertainty on the confidence vote procedure can actually *increase* the power of the PM. In Huber and McCarty (2001), political uncertainty is modeled by allowing the cost of government termination to take one of two values; this causes the PM to choose between a safe and a risky proposal, and forecloses on the possibility of the PM making small changes at the margin to optimize her response to the uncertainty. Here, I treat uncertainty by allowing the legislative player's termination cost to vary continuously. This allows the PM to optimize at the margin: a riskier proposal offers a greater potential payoff but carries a higher risk of termination. This is useful for modeling a situation in which the possible proposals can take a range of values. This result can be used to explain certain cases that sit oddly with previous work. As an example, I discuss the decision by Germany to deploy troops to Afghanistan.

This result implies a new way of thinking about political uncertainty: that it reflects a bargaining failure among coalition MP's. The case where political uncertainty favors the PM represents situations when it is too costly for parliamentary leaders to control a particular group of MP's with heterogeneous preferences. In this case the ex-ante probability that the confidence motion passes is not very sensitive to small changes in the proposal, so the PM uses the opportunity to make a more aggressive proposal than would have passed had the membership of the parliamentary majority agreed on a common position. By explaining cases in which uncertainty results from intraparty bargaining problems, this model broadens the understanding of political uncertainty and its ambiguous distributional effects; and in doing so, contributes to our understanding of how political institutions can have unanticipated consequences.

2 Schröder's gambit

It will be helpful to consider a motivating example in which a PM appears to take advantage of political uncertainty to push through an aggressive confidence proposal. In November 2001, Gerhard Schröder, the prime minister of Germany, used a confidence motion to propose sending 3,900 troops to Afghanistan (Döring and Hönnige, 2006).

The opposition parties were set to oppose the measure, and needed only eight "no" votes from Schröder's SPD-Green coalition to bring down the government. While the Green party leadership supported the deployment, many rank-and-file Green MP's were opposed. The deployment of troops was the most controversial part of the package; the proposal also included sending ambulances, which few opposed. The Afghan deployment was a means of cementing Schröder's shift to a more assertive foreign policy.

After fifteen Green MP's declared their intention to vote "no," Schröder was quick to leverage recent polls showing the SPD at an all-time high relative to their rivals the CDU/CSU, with the Greens perilously close to the 5 percent threshold for maintaining seats in the Bundestag. Meanwhile the Liberals, who were in a position to replace the Greens as coalition partners with the SPD, made an unexpectedly strong showing. Schröder used[1] the results to stress that he had nothing to lose from a new election; he called a surprise meeting on November 12th with Guido Westerwelle of the Liberal party, to extensive media coverage, to emphasize his willingness to switch partners from the Greens to the Liberals (Döring and Hönnige, 2006). Next, Schröder announced his decision to link the Afghanistan policy with a vote of confidence.[2]

Contemporary press reports indicate that the outcome of the vote was very much

[1] The ability of the prime minister to leverage favorable public opinion through a confidence vote is the subject of Becher and Christiansen (2014).

[2] The vote of confidence in Germany is somewhat peculiar in that it does not automatically trigger the dissolution of parliament and snap elections. Instead, the president serves as a veto player. In this case, the Bundespräsident Johannes Rau was a member of Schröder's party who, given the SPD's excellent poll numbers, and the availability of the Liberals as an alternate coalition partner, would have approved the snap elections (Döring and Hönnige, 2006).

in doubt: The Economist titled their article on the situation "Schröder's Gamble." The Green leadership were themselves unsure of how their members would vote, to the extent that their leader Joschka Fischer threatened to resign his post as foreign minister if the proposal did not pass, and rushed back to Germany from a meeting of the United Nations General Assembly on the eve of the vote to pressure his party's backbenchers. In the event, Schröder's confidence proposal got 336 votes, only two more than a bare majority, with four Green MP's voting against. The deployment took place, and is now viewed as a key part of Schröder's legacy.

This example is somewhat puzzling from the perspective of the Huber and McCarty model, in which the distributional effect of uncertainty is to reduce the magnitude of policy concessions that the PM can extract by using the confidence vote. In this case, had the Green Party agreed on a shared position, they could have limited Schröder to a more moderate proposal, such as sending support vehicles but not troops. As it happened, the conflict between the party leaders, who had more to lose than the rank-and-file from a breakdown of the coalition, gave Schröder the opportunity to maximize his gains. In this case, then, political uncertainty appears as a bargaining problem among coalition members with heterogeneous interests, which actually increases the power of the PM, rather than a strategic move on the part of the coalition partner to curtail the PM's ability to extract concessions.

3 Model and results

The model consists of a game between the PM, P, and the members of the PM's majority in parliament, M, which is treated here as a unitary actor. The majority M is defined as the minimal coalition whose unanimous support is required to pass a policy; in practice, this could be some crucial subset of legislators in the parties in the governing coalition. The assumption that M is known ex ante reflects the constraints associated with the government formation process, which prevent the PM from crafting majorities on a bill-by-bill basis (Huber, 1996). In the first stage, the majority in parliament propose a bill. M goes on record supporting a proposal $b_M \in B$, where B is the policy space. Following the parliamentary stage, the PM decides whether to accept parliament's proposal, or to propose a different policy by invoking a vote of confidence. If the PM accepts the bill, the game ends with the outcome b_M. If the PM instead invokes a vote of confidence, then it can only pass with the unanimous consent of all members $i \in M$.

The policy preferences of the majority are represented by a strictly quasiconcave utility function $u_M(\bullet)$, assumed to represent the preferences of her constituency. The majority have an ideal point x_M, such that $x_k = \arg\max_{x \in B} u_M(x)$, and $u_M(x_M) = 0$. Members of parliament also face position-taking incentives: if they make a proposal that deviates from their ideal point (assumed to be that of their constituency), the constituency imposes an electoral penalty. This cost is written as $\alpha[u_M(b_M)]$, where $\alpha > 0$ is an exogenous parameter representing the magnitude of position-taking incentives. In addition, the majority faces an exogenous cost $c^M \geq 0$ if the government falls because of a failed confidence vote.

The utility function faced by the majority MP's over a policy outcome y can thus be written as:

$$U_M(y, c^M, \alpha) = \begin{cases} u_M(b_M) + \alpha[u_M(b_M)] & \text{if } P \text{ accepts } b_M \\ u_M(b_P) + \alpha[u_M(b_M)] & \text{if } P \text{ proposes } b_P \text{ and } M \text{ accepts} \\ u_M(x_0) + \alpha[u_M(b_M)] - c^M & \text{if } M \text{ votes to censure.} \end{cases} \tag{1}$$

The PM has a utility function (over a policy outcome y) similar to that of the MP's. She also incurs an audience cost $e \geq 0$ if she invokes a vote of confidence, because these are considered to be drastic measures that signal that the PM is having trouble winning support for her preferred policy. This cost incentivizes the PM to accept policy compromises rather than using a vote of confidence. The PM also faces a censure cost $c^P \geq 0$ if she fails a vote of confidence, reflecting the possibility of losing influence over future policies due to her loss of office, and therefore depends in part on the PM's electoral prospects in the ensuing snap elections.[3]

$$U_P(y, c^i, \alpha) = \begin{cases} u_P(b_M) & \text{if } P \text{ accepts } b_M \\ u_P(b_P) - e & \text{if } P \text{ proposes } b_P \text{ and all } i \in M \text{ accept} \\ u_P(x_0) - e - c^P & \text{if any } i \in M \text{ votes to censure.} \end{cases} \tag{2}$$

[3] I do not include a policy-dependent position-taking term for the PM, because as the head of government, the prime minister is ostensibly responsible for realized policy outcomes, and is therefore assumed to be judged by voters on that basis.

Case without uncertainty

I first consider the case without political uncertainty.[4] Under what circumstances will the PM use a confidence measure to propose her own policy, rather than accepting the majority's proposal? This is done through backward induction. M will vote for a confidence measure if their utility from carrying the measure is higher than from bringing down the government. The set A is defined as the set of confidence measures that M will vote for. From the majority's utility function, $A = \left\{x \in B | u_M(x) \geq u_M(x_0) - c^M\right\}$. M will vote for the PM's proposal b_P if $b_P \in A$. Since the consent of the majority is needed for the proposal to pass, it will pass if and only if $b_P \in A$.

I define $\hat{x}$ as the best proposal the PM can pass with a confidence motion: $\hat{x} = \arg\max_{x \in A} u_P(x)$. The PM will use the confidence motion to propose $\hat{x}$ when she can get more utility by doing so than by accepting the majority's proposal. I define E as the set of proposals that the PM will accept from the majority, rather than using a confidence vote:

$$E = \{x \in B | u_P(x) \geq u_P(\hat{x}) - e\} \tag{3}$$

By backward induction, the PM accepts the majority's proposal b_M if she prefers it to a confidence vote, i.e. if $b_M \in E$. Otherwise she will use a confidence vote to propose $\hat{x}$. Since $\hat{x}$ is, by definition, in the set of proposals that the majority will

[4]Without political uncertainty, the model is a unidimensional version of Huber (1996), whose notation I borrow to facilitate comparison. Huber's model also includes a cabinet, whose role is to facilitate coordination among the majority in parliament. Because the cabinet plays no role in the distributional contest between the PM and the majority, which is the focus of my model, I omit the cabinet for ease of explication.

accept, the government never falls, and the PM can pay audience cost e to obtain $\hat{x}$.

The MP's know the boundaries of E, so they have a choice of making an acceptable proposal $b_M \in E$, or a provoking proposal, $b_M \in E^C$. We define D as the set of proposals that M weakly prefers to the outcome of a confidence vote. In the case without uncertainty, the MP's know the bounds of E, so they know when they make their proposal that a confidence vote will ensue, and that it will pass. This being the case, no legislator is willing to accept position-taking costs for supporting a b_M that she knows will not become law, and prefers instead to propose her ideal point; thus the signaling component on the right-hand side of the inequality is zero.

$$D = \{x \in B | u_M(x) + \alpha[u_M(x)] \geq u_M(\hat{x})\} \tag{4}$$

Huber (1996) proves that, if there is some set of proposals that all the MP's and the PM can agree is preferable to the outcome of a confidence vote — that is, if $D \bigcap E \neq \emptyset$ — then one equilibrium is for the majority to propose a policy in this set, and for the PM to accept it. Otherwise, the MP's will propose their ideal point, and the PM will successfully invoke a vote of confidence to obtain $\hat{x}$.

Case with uncertainty

I now consider the case with political uncertainty. In this version I denote the representative legislator in the majority as k, representing one legislator – or a group of legislators with the same ideal point – within the governing coalition, either within the PM's party or another party in the coalition. The non-PM player in this version of the game is the leader of a faction within the PM's party, or the leader of the coalition party, respectively. If the legislator or faction represented by k maintains ambiguity as to the precise boundaries of $A = A_k$, then the PM faces uncertainty regarding the position of $\hat{x}$, which lies on the boundary of A. The bargaining then takes place between the PM, on one side, and actors within the legislature – whether a faction within the PM's party, or another party in the coalition – on the other. I use the term "legislative player" to refer to the non-PM player, i.e. the head of the party or legislative faction that includes k.

The game proceeds as follows. First, the legislative player has the option to pay a cost Γ to learn the value of c^k, the censure cost for representative legislator k.[5] If she learns the value of c^k, it becomes common knowledge between the legislative player and the PM, and the game proceeds as in the case presented above. Otherwise, the actual value of c^k remains unknown to both the legislative player and the PM until the final stage.[6] Second, the legislative player makes a proposal, b_M. Third, the PM has the choice of either accepting b_M or using a vote of confidence procedure to make her own proposal, b_P. If she invokes a vote of confidence, then the fourth and final stage is reached, in which the legislative player learns the precise value of c^k before choosing whether to accept b_P or to censure the PM and bring down the government.

The assumption that the PM learns c^k when the legislative player pays Γ reflects

[5]For simplicity, the party or faction leaders, as well as backbench MP's within the PM's majority, are treated as a single player. This introduces a slight awkwardness in that c^k is initially known by the representative backbench MP but not by the leader, although they are treated as a single player in the game. However, this simplification allows us to focus on the strategic interaction between the PM and her majority.

[6]The value of c^k is revealed to the party leadership when k casts her vote. Moreover, the value of c^k becomes apparent to legislator k during the legislative process, as the public becomes aware of the issues through media coverage.

the prevalence of cabinet institutions, such as junior ministers and interministerial committees (Thies, 2001), and legislative institutions (Martin and Vanberg, 2005) that allow coalition partners and intraparty factions to monitor one another. Thus, the assumption is that neither the PM nor the legislative player know c^k until Γ is paid, when it becomes known to both. If Γ is not paid, it reflects a situation where the legislative player has not brought the legislator(s) k to a shared position, and does not know how they will vote. When Γ is paid, cabinet and legislative institutions allow the PM to learn c^k as well. If the censure cost were the legislative player's private knowledge, the situation could be represented by a signaling game, such as Huber and McCarty (2001). I choose here to assume common knowledge and focus on the effect of a continuous uncertainty parameter.

The cost Γ reflects the difficulty for the legislative player of resolving intraparty bargaining problems and learning the termination cost of the legislator or faction represented by k. As Strøm (1994, p. 118) points out, "parties are complex organizations of individuals with different preferences over policy, office, and votes." The legislative player, as the head of a party or faction of legislators, does not always know in advance just what bills each backbench MP would support in the event of a confidence vote. Paying Γ can be thought of as reflecting two possible mechanisms, which can occur separately or together.

First, it can represent "direct influence" (Smith, 2007) to obtain binding promises from the legislator or faction represented by k regarding what legislation they will support. These measures include "arm-twisting" (Anderson, Butler, and Harbridge, 2016, p. 605) or "sticks," such as "a reduction in campaign support, denial of the official party endorsement, or a lower position on the party list, among other punishments" (Thies, 2001, p. 582), as well as "carrots," such as side payments in the form of campaign contributions (Jenkins and Monroe, 2012). Each of these measures is costly to party or faction leaders, in terms of arm-twisting effort, loss of goodwill, or side payments. Γ reflects the cost of applying these measures to the legislator or faction k within the legislative player at the outset of the bargaining process.[7] By twisting arms to elicit binding promises from legislators, the legislative player can be certain which bills k will support in a confidence motion.

Second, the process of paying Γ can represent efforts on the part of the legislative player to understand the electoral dynamics affecting the legislator or faction k. If a confidence vote fails, an early election occurs, and the threat this poses to a political actor is a function of their expected public support (Becher and Christiansen, 2014). Legislators may have better information than party or faction leaders about whether that legislator's seat is likely to be retained. MP's often reside in the district they represent, and spend substantial time with constituents, giving them inside information about their prospects (Fenno, 1978). Because expectations about the result of an early election are a substantial part of c^k, the legislative player can gain information about c^k by investigating public opinion in the district(s) represented by the member(s) of k. This effort, however, is costly, whether in money (e.g. for polling) or in the opportunity cost of staff resources.

[7]This cost could vary according to the institutional features of the party or regime that affect party leaders' influence, such as term limits, legislative professionalism, majority agenda control, and staff budgets (Anderson, Butler, and Harbridge, 2016). It could also vary with the diversity of preferences within the party or faction, and with the number and heterogeneity of parties in the governing majority.

If the cost Γ is not paid, the political uncertainty is resolved at the final voting stage, when members cast their votes. The solution concept is subgame perfect Nash equilibrium (SPNE). We proceed by backward induction, starting at the fourth and last stage.

Fourth stage

In the fourth and final stage, the majority learns the value of c^k (if it had not already learned it by paying Γ) and decides whether or not to accept the vote of confidence proposal b_P. The set of proposals that the majority prefer to censure, A_k, is given by

$$A_k = \left\{ x \in B : u_k(x) \geq u_k(x_0) - c^k \right\} \tag{5}$$

To maximize its utility, the majority votes to accept the vote of confidence proposal if and only if $b_P \in A_k$.

Third stage

In the third stage, the PM considers whether to accept b_M or to propose some b_P. If her utility from b_M exceeds her expected utility from the best possible b_P, she will accept b_M and end the game; otherwise she will propose b_P. If uncertainty exists regarding the boundaries of A_k, and the PM uses a confidence vote to make a proposal $b_P = \bar{x}$, she faces a probability $p(\bar{x})$ that the measure will not pass. I assume that the PM has a Von Neumann-Morgenstern utility function: her utility from proposing $\bar{x} \in \mathbf{B}$ is the probability-weighted average of her utilities from the possible outcomes. I denote the PM's utility from a confidence vote in the presence of uncertainty as $\underline{U_P}(\bullet)$ in order to distinguish it from the utility in the absence of uncertainty:

$$\underline{U_P}(\bar{x}) = (1 - p(\bar{x}))\,(u_P(\bar{x}) - e) + p(\bar{x})\left(u_P(x_0) - e - c^P\right) \tag{6}$$

where the first term represents the measure passing, and the second term represents the measure not passing. Eq. (6) can be rewritten as

$$\underline{U_P}(\bar{x}) = u_P(\bar{x}) - p(\bar{x})\left[u_P(\bar{x}) - u_P(x_0) + c^P\right] - e \tag{7}$$

What proposal will maximize the PM's utility? By taking the first order condition of (7), we obtain that for the optimal proposal $\bar{x^*}$,

$$\big(1 - p(\bar{x^*})\big)u_P'(\bar{x^*}) = p'(\bar{x^*})\big(u_P(\bar{x^*}) - u_P(x_0) + c^P\big) \tag{8}$$

The term on the left is the added marginal expected utility of moving the proposal closer to her ideal point. The term on the right reflects the marginal increase in the probability of being voted out of office by making such a proposal. Thus, we see that the optimal proposal balances the PM's interest in passing a better proposal with her concerns about failing a confidence measure.

I consider the special case in which the PM's and MPs' spatial utilities are linear[8] and the majority's censure cost appears to the PM as a uniform distribution of width

[8]The case of quadratic spatial utility is treated in Appendix 1; there still exists a parameter space in which her utility from the use of the confidence vote is increased by the presence of uncertainty.

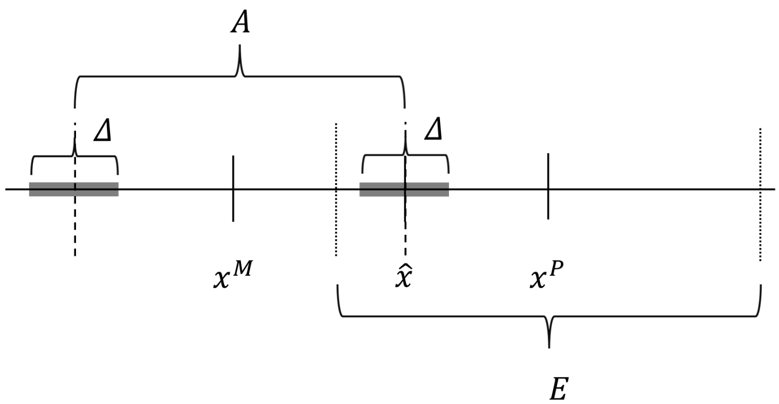

Figure 1: Model schematic for uniform distribution, $n = 1$.

Δ centered at c^{k*}. In this case, $p(\bar{x})$ is a uniform distribution of width Δ centered at $\hat{x}$.[9] This situation is schematized in Figure 1, in which the blue zone indicates the area where the true boundary of A could lie. Since the PM will always make a proposal on the line connecting x^P to x^M, I apply a normalization whereby $x^M \equiv 0$, $x^P \equiv 1$. In this case, the specific functional form for $p(\bar{x})$ is:

$$p(\bar{x}) = \begin{cases} 0 & : \quad \bar{x} \leq \hat{x} - \Delta/2 \\ \frac{\bar{x} - \hat{x} + \Delta/2}{\Delta} & : \quad \bar{x} \in (\hat{x} - \Delta/2, \hat{x} + \Delta/2) \\ 1 & : \quad \bar{x} \geq \hat{x} + \Delta/2 \end{cases} \tag{9}$$

I assume that the PM has a linear utility function $u_p(x) = x - 1$.[10] Plugging

[9]In Huber's model, $\hat{x}$ represented the PM's optimal confidence measure, which lay at the edge of A. In my model, it represents the PM's expected location of the uncertain border of A. For $\Delta = 0$, my model is the same as Huber's with $n = 1$.

[10]This corresponds to a loss function of $-|1 - x|$ for $x \leq 1$. The PM will never propose $x > 1$, because this would have a higher probability of being rejected than $x = 1$ and would bring her less

these functional forms into Eq. 7 and taking the derivative with respect to $\bar{x}$, we obtain that for the region where $p \in (0,1)$:

$$\underline{U_P}'(\bar{x}) = 1 - \frac{2\bar{x} - x_0 + c^P - \hat{x} + \Delta/2}{\Delta} \tag{10}$$

First, we determine the circumstances under which the PM's optimal confidence proposal has an interior solution.

Proposition 1. The prime minister's optimal confidence proposal has a unique interior solution when

$$\frac{3}{2}\Delta > \hat{x} - (x_0 - c^P) \tag{11}$$

Proof. We evaluate the first derivative of the expected utility at the edges of the uncertain zone. For the edge closer to the PM's ideal point, we obtain

$$\underline{U_P}'(\hat{x} + \Delta/2) = -\frac{1}{\Delta}\left(\hat{x} + \Delta/2 - x_0 + c^p\right) \tag{12}$$

Eq. (12) is negative for all $\Delta > 0$ when $\hat{x} > x_0 - c^p$, which is true when the PM prefers to make a potentially acceptable proposal rather than falling on her sword to preserve the status quo. This means that the edge closer to the PM's ideal point is never the PM's optimal confidence proposal, because the PM can always obtain more utility by moving the proposal to the left. For the edge closer to parliament's ideal point, we obtain

utility.

$$\underline{U_P}'(\hat{x} - \Delta/2) = 1 - \frac{1}{\Delta}(\hat{x} - \Delta/2 - x_0 + c^p) \tag{13}$$

This is positive if and only if Equation 11 holds.

This condition means that the PM will gain by making a proposal that has a positive probability of being rejected, so long as the reward outweighs the risk. Otherwise, she will play it safe by making the most aggressive proposal that poses zero risk of being voted down, i.e. $\bar{x^*} = \hat{x} - \Delta/2$.

When the first derivative of the expected utility is positive at the left edge and negative at the right edge, the PM prefers to make a proposal inside the uncertain zone rather than at the edges. To show that the interior solution is unique, we take the second derivative of the PM's expected utility:

$$\underline{U_P}''(\bar{x}) = -2/\Delta \tag{14}$$

Since Δ is positive, Eq. 14 is negative for all values of $\bar{x}$, indicating that the interior solution $\bar{x^*}$ is unique. By substituting the functional forms of $p(\bar{x})$ and $u_P(\bar{x})$ into Eq. 8, we can solve for the PM's optimal proposal in the presence of uncertainty[11]:

$$\bar{x^*} = \frac{\hat{x} + x_0 + \Delta/2 - c^p}{2} \tag{15}$$

□

[11]As noted above, this solution applies when the interior solution exists. Otherwise the PM proposes $\hat{x} - \Delta/2$.

Interestingly, the optimal proposal becomes monotonically closer to the PM's ideal point with increasing uncertainty Δ. The parameter Δ can be thought of as the distance the PM must travel in policy space toward the partner's ideal point in order to obtain a given increase in safety. As Δ increases, the PM must pay more in policy concessions to obtain a marginal increase in safety, while the censure cost remains constant. As safety becomes more expensive, the PM demands less of it, making a more aggressive proposal.

Second stage

In this stage, the parliamentary majority determines which proposal to make. As discussed above, D is the space of proposals that the majority would prefer to make (if accepted) rather than face the consequences of a vote of confidence. E is the space of proposals that the PM would prefer to accept rather than undertake a vote of confidence. Because it faces position-taking costs for making proposals away from its ideal point, the majority will only do so if they will be accepted by the PM. Therefore, it will only make an acceptable proposal when $D \cap E \neq \emptyset$.

We start by writing an expression for D, the space of proposals that the majority is willing to make, introducing the notation $\underline{U_M}(\bullet)$ to refer to the majority's expected utility:

$$D = \left\{ x \in B | u_k(x) + \alpha[u_k(x)] \geq \underline{U_M}(\bar{x^*}) \right\} \tag{16}$$

The majority's expected utility in the case of a vote of confidence vote, $\underline{U_M}(\bar{x^*})$, is given by:

$$\underline{U_M}(\bar{x^*}) = (1 - p(\bar{x^*}))\, u_k(\bar{x^*}) + p(\bar{x^*}) \left[u_k(x_0) - c^{k*}\right] \tag{17}$$

Plugging this and the functional form of u_k into Eq. 16, we obtain:

$$D = \left\{ x \in B | x \leq \frac{(1 - p(\bar{x^*}))(\bar{x^*}) - p(\bar{x^*}) \left[-x_0 - c^{k*}\right]}{1 + \alpha} \right\} \tag{18}$$

Next we write an expression for E, the set of proposals that the PM is willing to accept rather than invoking a vote of confidence:

$$E = \left\{ x \in B | u_P(x) \geq \underline{U_P}(\bar{x^*}) \right\} \tag{19}$$

Substituting the functional form of $u_P(x)$, and by substituting Eq. 15 into Eq. 7 to obtain the PM's utility from the optimal confidence measure, we have:

$$E = \left\{ x \in B | x \geq \bar{x^*} - p(\bar{x^*}) \left[\bar{x^*} - x_0 + c^P\right] - e \right\} \tag{20}$$

Comparing the lower bound of E to the upper bound of D, we note that the two sets overlap (i.e. $D \cap E \neq \emptyset$) under the following condition:

$$\begin{aligned} & D \cap E \neq \emptyset \Leftrightarrow \\ & \qquad \frac{(1 - p(\bar{x^*}))(\bar{x^*}) - p(\bar{x^*}) \left[-x_0 - c^{k*}\right]}{1 + \alpha} \leq \bar{x^*} - p(\bar{x^*}) \left[\bar{x^*} - x_0 + c^P\right] - e \end{aligned} \tag{21}$$

In this case the majority can make a proposal that the PM will accept, and which they would prefer to a confidence vote. They will propose the lower bound of E, i.e.

$$D \cap E \neq \emptyset \Rightarrow b_M = \bar{x^*} - p(\bar{x^*}) \left[\bar{x^*} - x_0 + c^P\right] - e \tag{22}$$

If Eq. 21 is not met, then there exists no proposal that the PM would accept and that the majority would prefer over a confidence vote. In this case, the majority zeroes out its position-taking costs by proposing its ideal point, and provokes a vote of confidence:

$$D \cap E = \emptyset \Rightarrow b_M = x_K \tag{23}$$

First stage

In this stage the majority decides whether or not to pay Γ to learn its censure cost. This decision depends on the utility that it expects to obtain in either case, which in turn depends on whether $D \cap E = \emptyset$, i.e. whether there exists an acceptable proposal that the majority is willing to make. This can depend on the existence of uncertainty. There are four cases we need to check: when the intersection is empty, or not, regardless of whether the majority pays Γ; when the intersection is empty with uncertainty but not without it; and vice versa. We proceed by calculating the majority's expected utility for $D \cap E = \emptyset$ and $D \cap E \neq \emptyset$, with and without uncertainty, and comparing them to one another.

First we calculate the majority's expected utility in the case where $D \cap E = \emptyset$, in the absence of uncertainty. In this case, the majority propose their ideal point and provoke a vote of confidence, which passes with certainty, resulting in $\hat{x}$. We denote the expected utility for the majority in this situation as $\underline{U_M}(\Delta = 0, \emptyset)$, to indicate that this is the majority's utility in the case where $D \cap E = \emptyset$ and $\Delta = 0$. The resulting utility for the majority is:

$$\underline{U_M}(\Delta = 0, \emptyset) = -\hat{x} \tag{24}$$

Next we calculate the majority's expected utility for $D \cap E = \emptyset$, in the *presence* of uncertainty. The majority still makes the provoking proposal $b_M = x_k$, but in this case there is a chance that the majority's realization of c^k will cause it to reject the PM's vote of confidence proposal. In this case the majority's expected utility is

$$\underline{U_M}(\Delta \neq 0, \emptyset) = (1 - p(\bar{x^*}))\, u_k(\bar{x^*}) + p(\bar{x^*}) \left[u_k(x_0) - c^{k*} \right] \tag{25}$$

To simplify this expression, we start by writing $\hat{x}$ in another way. Starting with the definition that $\hat{x} = \arg\max_{x \in A} u_P(x)$, where $A = \{x | u_k(x) \geq u_k(x_0) - c^{k*}\}$, and substituting the functional forms of u_P and u_k, we find that:

$$\hat{x} = x_0 + c^{k*} \tag{26}$$

Comparing Eqs. 24 and 25, plugging in the functional form of u_k, and making use of Eq. 26, we have the final expression for the difference in expected utility to the majority between positive and zero political uncertainty, in the case where $D \cap E = \emptyset$:

$$\underline{U_M}(\Delta = 0, \emptyset) - \underline{U_M}(\Delta \neq 0, \emptyset) = (1 - p(\bar{x^*}))\, (\bar{x^*} - \hat{x}) \tag{27}$$

We proceed to analyze the case in which $D \cap E \neq \emptyset$, in the absence of uncertainty. This is the case when the upper edge of D overlaps the lower edge of E, i.e. when

$$\hat{x}/(1+\alpha) \geq \hat{x} - e \tag{28}$$

Substituting Eq. 26 and simplifying, we have that, in the absence of uncertainty, $D \cap E \neq \emptyset$ when:

$$e(1+\alpha)/\alpha \geq x_0 + c^{k*} \tag{29}$$

As discussed above, in this case the majority will make the proposal at the lower edge of E, as defined in Eq. 3, i.e., $b_M = \hat{x} - e$, and the PM will accept. Using Eq. 26 and the functional form of the majority's spatial utility, we have:

$$\underline{U_M}(\Delta = 0, \neg\emptyset) = -(1+\alpha)\left[\hat{x} - e\right] \tag{30}$$

In the presence of uncertainty, the edge of E will shift, and the majority will make the acceptable proposal shown in Eq. 22. This gives:

$$\underline{U_M}(\Delta \neq 0, \neg\emptyset) = -(1+\alpha)\left[\bar{x^*} - p(\bar{x^*})(\bar{x^*} - x_0 + c^P) - e\right] \tag{31}$$

Comparing Eqs. 30 and 31 and simplifying, we have:

$$\underline{U_M}(\Delta = 0, \neg\emptyset) - \underline{U_M}(\Delta \neq 0, \neg\emptyset) = (1+\alpha)\left((\bar{x^*} - \hat{x}) - p(\bar{x^*})\left[\bar{x^*} - x_0 + c^P\right]\right) \tag{32}$$

Equations 27 and 32 show the differences in the majority's utility between their outcomes without and with uncertainty, for the cases when $D \cap E$ is and is not empty, respectively, regardless of the majority's decision to pay Γ to learn c^k (making $\Delta = 0$) or not. However, there are also parameter values under which the majority's decision to pay Γ or not affects whether the intersection is null, i.e. where $D \cap E = \emptyset$ when $\Delta = 0$ and $D \cap E \neq \emptyset$ when $\Delta \neq 0$, or vice versa.

Comparing Eq. 28 to Eq. 21, which give the conditions for $D \cap E \neq \emptyset$ in the absence and presence of uncertainty respectively, we note that there are sets of parameter values for which the former can hold and the latter not, and vice versa,[12] i.e. when the presence of uncertainty determines whether the intersection is null or not. Thus, we also need to calculate the difference in utility obtained by the majority from paying Γ in the cases when this affects whether the intersection is empty or not.

In the case when $D \cap E \neq \emptyset$ when $\Delta = 0$ but $D \cap E = \emptyset$ when $\Delta \neq 0$, we have (from Eqs. 25 and 30):

$$\begin{aligned} &\underline{U_M}(\Delta = 0, \neg\emptyset) - \underline{U_M}(\Delta \neq 0, \emptyset) = \\ &\qquad [-(1+\alpha)\,[\hat{x} - e]] - \left[(1 - p(\bar{x^*}))\, u_k(\bar{x^*}) + p(\bar{x^*})\left[u_k(x_0) - c^{k*}\right]\right] \end{aligned} \tag{33}$$

In the case when $D \cap E = \emptyset$ when $\Delta = 0$ but $D \cap E \neq \emptyset$ when $\Delta \neq 0$, we have

[12]For example, for the parameters $\Delta = 0.8$, $\alpha = 0.083$, $e = 0.03$, and others the same as for Fig. 2, we have $D \cap E = \emptyset$ in the absence, but not the presence, of uncertainty. Meanwhile for $\Delta = 0.25$, $e = 0.05$, and others the same as above, we have $D \cap E = \emptyset$ in the presence, but not the absence, of uncertainty.

(from Eqs. 24 and 31):

$$\underline{U_M}(\Delta = 0, \emptyset) - \underline{U_M}(\Delta \neq 0, \neg\emptyset) =$$
$$- \hat{x} - \left[-(1+\alpha)\left[\bar{x^*} - p(\bar{x^*})(\bar{x^*} - x_0 + c^P) - e\right]\right] \quad (34)$$

To maximize its utility, the majority will pay the exogenous cost Γ to learn c^k and thus to cause $\Delta = 0$ if and only if the cost Γ is less than or equal to the expected value of the utility it will gain by doing so. The majority will determine which situation applies, i.e. whether $D \cap E$ is empty or not, with and without uncertainty, and accordingly determine via Eqs. 27, 32, 33, 34 whether its change in utility by learning c^k is worth the cost.

Equilibrium

To summarize, the equilibrium is as follows. M will determine if $D \cap E$ is null in the presence and in the absence of uncertainty, according to Eqs. 21 and 29 respectively. It will then determine the effect of uncertainty on its expected utility, and compare the difference to Γ, according to Eqs. 27, 32, 33, and 34. If its increase in utility in the absence of uncertainty exceeds Γ, it will pay this cost and eliminate the uncertainty. The equilibrium will then depend on whether the intersection of D and E is null, according to Eq. 29. If it is null, M will propose its ideal point, and the PM will make her optimal confidence proposal in the absence of uncertainty, $\hat{x}$. If it is not null, M will make its optimal acceptable proposal in the absence of uncertainty, $x_0 + c^k - e$ (obtained by substituting the PM's linear utility, and Eq. 26, into the lower bound of E from Eq. 3).

If the increase in utility is not worth paying Γ, M will allow the uncertainty Δ to remain. The equilibrium will again depend on whether the intersection of D and E is null, depending on Eq. 21. If it is null, M will again propose its ideal point, and the PM will invoke the confidence vote to propose $\bar{x^*}$, according to Eq. 15. If it is not null, M will make its optimal acceptable proposal in the presence of uncertainty, given by Eq. 22.

The parameters affect the equilibrium outcome. Higher audience cost α makes M less willing to make an acceptable proposal, making it more likely that $D \cap E$ is null. A higher x_0 increases the PM's utility if her confidence vote fails, shrinking the space of proposals from M that she will accept under uncertainty and causing her to make more aggressive proposals. Conversely, higher c^p makes the PM more wary of using the confidence vote under uncertainty, making her more willing to accept proposals from M. Higher e makes the PM more willing to accept proposals from M rather than invoking a confidence vote, making $D \cap E = \emptyset$ less likely.

Discussion

We focus now on the equilibrium in which the PM invokes the vote of confidence. An interesting feature of the model is that in some cases, the presence of political uncertainty induces the PM to make a more aggressive confidence proposal than she would have in its absence; indeed, in some circumstances she can even gain more utility from the use of the vote of confidence in the presence of uncertainty. Propositions 2 and 3 respectively compare the PM's optimal proposal and her expected utility, in the presence versus the absence of uncertainty. Proposition 4 shows that even when uncertainty encourages the PM to make a more aggressive proposal, the opposition may choose in equilibrium to allow the uncertainty to persist. These propositions establish, in contrast to existing literature, that the effect of political uncertainty can empower the PM through the use of the confidence vote.

Proposition 2. Under certain parameter values, the solution to the PM's optimization problem in the presence of political uncertainty is closer to the PM's ideal point than is her optimal proposal in the absence of uncertainty.

Proof. In the absence of ambiguity, $\hat{x}$ was the best proposal the PM could carry with a confidence vote. By manipulating Eq. 15, we find the following relationship between $\hat{x}$ and $\bar{x^*}$:

$$\bar{x^*} < \hat{x} \Leftrightarrow x_0 + \Delta/2 < \hat{x} + c^p \tag{35}$$

$$\bar{x^*} > \hat{x} \Leftrightarrow x_0 + \Delta/2 > \hat{x} + c^p \tag{36}$$

$$\bar{x^*} = \hat{x} \Leftrightarrow x_0 + \Delta/2 = \hat{x} + c^p \tag{37}$$

□

This proposition compares the PM's optimal vote of confidence - the proposal she will make in equilibrium when the intersection of D and E is empty - in the presence ($\bar{x^*}$) vs the absence ($\hat{x}$) of uncertainty, and to show that uncertainty will under certain parameter values make her more aggressive. In the second case, where $\bar{x^*} > \hat{x}$, the PM's optimal strategy is to make an aggressive proposal that, in the absence of uncertainty, would certainly be rejected by parliament. To interpret this result, we note that $1/\Delta$ is the marginal increase in the probability of censure as the PM moves the proposal closer to her ideal point. If Δ is large, then making a marginally better proposal will not greatly increase the probability of censure. Moreover, if the PM likes the status quo, and the censure cost is low, she will be willing to risk losing the confidence vote.

The presence of ambiguity will affect the PM's utility from using the confidence vote, and thereby change the frontier of E, the set of partner proposals that she would accept rather than resorting to the confidence vote. In the interesting case where $\bar{x^*} > \hat{x}$, the uncertainty causes the PM's optimal proposal to shift toward the PM's ideal point. On the other hand, the frontier of E lies outside of $\bar{x^*}$ by a distance reflecting the costs of invoking a vote of confidence. The possibility of censure will cause the frontier of E to shift outward from the PM's ideal point relative to the confidence proposal. What is the net impact of these countervailing effects? Under certain conditions, uncertainty actually makes the confidence vote procedure a *more* powerful tool for the PM.

Proposition 3. For a range of parameter values, the prime minister's expected utility from invoking a vote of confidence in the presence of uncertainty is higher than her utility from the optimal confidence proposal in the absence of uncertainty.

Proof. In the presence of uncertainty, the PM's utility from the optimal confidence measure is found by substituting Eq. 15 into Eq. 7:

$$\underline{U_p}(\bar{x^*}) = \bar{x^*} - 1 - p(\bar{x^*})\left[\bar{x^*} - x_0 + c_P\right] - e \tag{38}$$

From Eq. 2, the PM's utility from a confidence vote in the absence of uncertainty is simply $U_p(\hat{x}) = \hat{x} - e$. Subtracting this from Eq. 38, substituting the functional form of p from Eq. 9, and simplifying, we obtain the increase in the PM's utility, due to uncertainty, from using the confidence vote:[13]

$$\underline{U_P}(\bar{x^*}) - U_P(\hat{x}) = \frac{1}{4}\left[\frac{\Delta}{4} + 3\left(x_0 - \hat{x} - c^P\right) + \frac{\left(x_0 - \hat{x} - c^P\right)^2}{\Delta}\right] \tag{39}$$

I introduce the notation

$$\xi \equiv x_0 - \hat{x} - c^P \tag{40}$$

and note that Eq. 39 is quadratic in ξ. Applying the quadratic formula, we find that $\underline{U_P}(\bar{x^*}) - U_P(\hat{x}) = 0$ when

$$\xi = \frac{-3 \pm 2\sqrt{2}}{2}\Delta \tag{41}$$

By substituting the two roots from Eq. 41 into the first derivative of Eq. 39, we find that the derivative is negative when evaluated at the lesser root, and positive when evaluated at the greater root. Because Eq. 39 is quadratic, this means that the value of $\underline{U_P}(\bar{x^*}) - U_P(\hat{x})$ is strictly positive in the range

[13]This assumes that the interior solution exists, i.e. $\Delta > 2/3(\hat{x} - x_0 + c^P)$. Otherwise, the PM proposes $\hat{x} - \Delta/2$, and her increase in utility due to uncertainty is just $-\Delta/2$, which is negative.

$$\xi \in \left(-\infty, \frac{-3-2\sqrt{2}}{2}\Delta\right) \bigcup \left(\frac{-3+2\sqrt{2}}{2}\Delta, \infty\right) \tag{42}$$

However, we note that the lower part of this range violates the condition for an interior solution to the PM's optimization problem, Eq. 11. This means that the parameter space where $\underline{U_P}(\bar{x^*}) - U_P(\hat{x})$ is strictly positive is

$$\xi > \frac{-3+2\sqrt{2}}{2}\Delta \tag{43}$$

which is equivalent to

$$\frac{3-2\sqrt{2}}{2}\Delta > c_P + \hat{x} - x_0 \tag{44}$$

$\square$

Under conditions where $\hat{x}$ is very close to x_0 and c^P is small, then for very small or very large values of Δ the PM can actually obtain higher utility from using the confidence vote in the presence of uncertainty than she can with complete information. This is demonstrated in Figure 2, which shows $\underline{U_P}(\bar{x^*}) - U_P(\hat{x})$ as a function of Δ for parameter values of $x_0 = 0.49$, $\hat{x} = 0.50$, and $c_P = 0.05$.

This result can be interpreted as follows. In part of the parameter space, characterized by a low censure cost, high uncertainty, and an $\hat{x}$ that is close to the status quo, the PM actually obtains *more* utility from using the confidence vote in the presence of political uncertainty than she did in its absence. This result is a major departure from Huber and McCarty, for whom the effect of uncertainty in the unilateral case is unambiguously to mitigate the ability of the PM to use the confidence

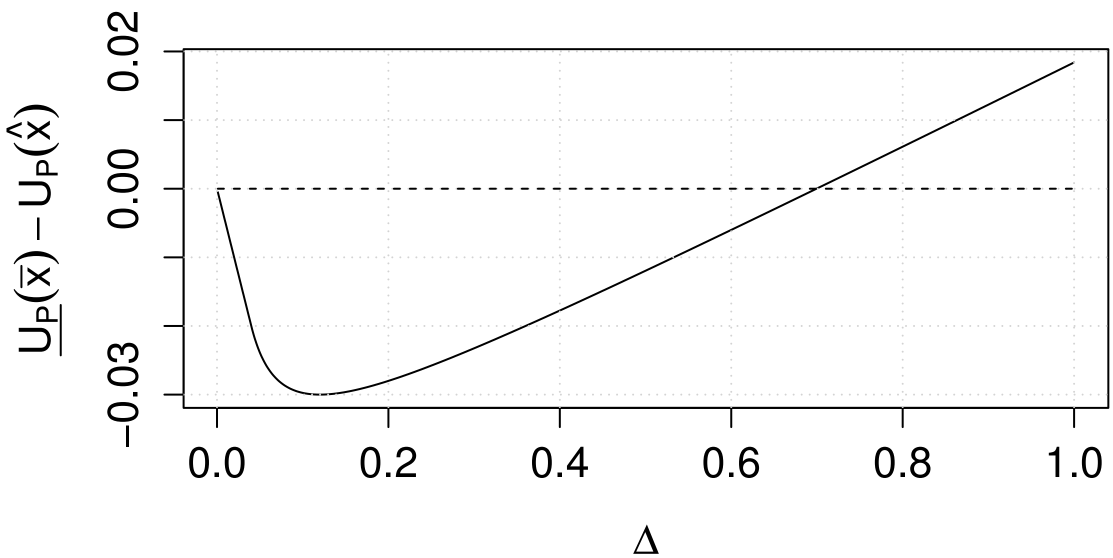

Figure 2: Increased utility to PM from using confidence vote in presence of uncertainty.

vote to extract policy concessions.[14] In my model, the presence of uncertainty can in some conditions actually *increase* the power of the confidence vote in the hands of the PM.

This result has an intuitive interpretation. In the absence of uncertainty, the PM has a choice between accepting the legislative player's proposal, or using a confidence vote to propose $\hat{x}$. In my model, the PM instead faces a binary lottery, where her proposal can be accepted, or she can be censured. Her utility is a linear combination of the utilities of these outcomes. Under the conditions in Eq. 39, her proposal is much better (higher utility) than her proposal in the absence of uncertainty; and the utility she would obtain under censure is not much worse than $\hat{x}$. In this situation the lottery between these outcomes is actually more desirable than the known outcome of $\hat{x}$. A situation of this type is shown in Figure 3, where Δ is large, and $\hat{x}$ is close to x_0.

If political uncertainty helps the PM, then why will the legislative player allow it? The answer is that it is costly for the majority to resolve their bargaining problems at the beginning of the legislative process; this cost is reflected by the term Γ. If this cost is high enough, then it is optimal for the legislative player to allow the uncertainty to persist until the final stage of the game.

Proposition 4. For sufficiently high values of the censure cost, the majority will allow political uncertainty to persist even when it increases the prime minister's ability to use the confidence vote to extract policy

[14] They mention in a footnote that a larger spread between the policy proposals that are acceptable to a strong versus a weak partner could increase the policy incentive of the PM to make an aggressive proposal, but they do not develop this line of reasoning and it does not figure in their results.

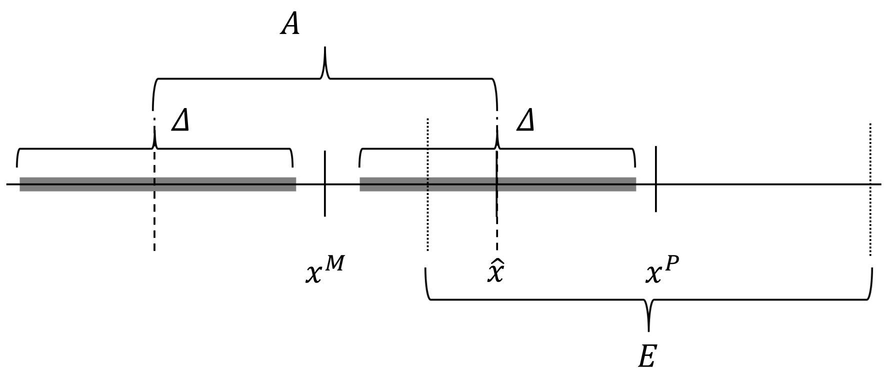

Figure 3: Model schematic for case in which prime minister's power to extract concessions with the confidence vote is augmented by the presence of political uncertainty.

concessions.

Proof. From Proposition 3, we have that the presence of political uncertainty, $\Delta \neq 0$, increases the prime minister's ability to use the confidence vote to extract policy concessions when Δ is sufficiently high, per Eq. 44.

For the prime minister to use the confidence vote, it must be the case that $D \cap E = \emptyset$. Thus, to compare the PM's ability to extract concessions with the confidence vote with and without uncertainty, we consider the case in which her strategy is to use the confidence vote both with and without uncertainty. The majority's increase (which may be negative) from the absence of uncertainty in this case is given by Eq. 27, which places an upper bound on the amount the majority would be willing to pay to eliminate political uncertainty. Therefore when

$$\Gamma > (1 - p(\bar{x^*}))\,(\bar{x^*} - \hat{x}) \tag{45}$$

the majority will be unwilling to pay to eliminate uncertainty. Because $p(\bar{x^*})$, $p(\bar{x^*})$, and $\hat{x}$ are all between 0 and 1, while $\Gamma \in \mathbb{R}_{\geq 0}$, there exist permissible values of Γ such that Eq. 45 is met.

$\square$

For example, starting from the same parameter values used for Fig. 2, and setting $\Delta = 0.8$, we have, from Eq. 39, that $\underline{U_P}(\bar{x^*}) - U_P(\hat{x}) \approx 0.01$, indicating that the PM is empowered in her use of the confidence vote by the presence of uncertainty. Calculating $\bar{x^*}$ and $p(\bar{x^*})$ from Eqs. 15 and 9 respectively, and plugging the values into Eq. 27, we have that

$$\underline{U_M}(\Delta = 0, \emptyset) - \underline{U_M}(\Delta \neq 0, \emptyset) \approx 0.0489 \tag{46}$$

Thus by Eq. 45, when $\Gamma > 0.0489$, the legislative player is not willing to pay Γ to eliminate the uncertainty.

The case where uncertainty increases the PM's ability to use the confidence vote to extract concessions is not, then, ruled out by the legislative player's ability to pay Γ to eliminate the uncertainty. Sometimes – such as when parliamentary and party institutions do not give party leaders a great deal of power, a diversity of preferences exists within the party, or the governing majority comprises a heterogeneous assortment of parties – the cost can be too high, and the partner allows the uncertainty to persist.

Equation 39 also shows the effect of the censure cost c^P. This result is in agreement with Huber and McCarty, in which a higher censure cost reduces the PM's ability to use the vote of confidence to extract policy concessions; and in contrast to Huber, in which the censure cost has no effect because the PM never falls.[15]

Proposition 5. The prime minister's expected utility from the vote of confidence procedure in the presence of uncertainty is decreasing in the censure cost.

Proof. We take the derivative of Eq. 39 with respect to c^P:

$$\frac{\partial(\underline{U_P}(\bar{x^*}) - U_P(\hat{x}))}{\partial c^P} = \frac{1}{4}\left(-3 - \frac{2(x_0 - \hat{x} - c^P)}{\Delta}\right) \tag{47}$$

From Eq. 47, we find that the PM's utility from the confidence motion with uncertainty is decreasing in the censure cost c^P iff $\Delta > \frac{2}{3}(\hat{x} + c^P - x_0)$. This is the same condition for an interior solution, indicating that the PM's utility from using the confidence motion with uncertainty is always decreasing in the censure cost.

□

If very high uncertainty can help the PM, then is it not to her advantage to be willfully ignorant? In my model this is not the case, because Δ reflects the *actual* probability distribution of censure. If the PM knew even less, i.e. she perceived a larger Δ, then she would believe that some extreme proposals had a chance of passing when in fact they did not; and that some very mild proposals were risky

[15] This result is also consistent with previous studies (Becher and Christiansen, 2014; Lupia and Strøm, 1995) on the effects of the PM's power to dissolve the government. These studies find that the PM can use dissolution threats to greater effect when she has higher popular support, and when the election timing is favorable. These circumstances correspond to low c^P.

when in fact they made unnecessary concessions. The PM, then, has an incentive to know the exact nature of the probability distribution that she faces.

4 Conclusion

Previous work has found that political uncertainty reduces the prime minister's ability to use the confidence vote to extract policy concessions. In contrast, I find that under some circumstances, political uncertainty can actually help the PM. This novel result is due to my choice of modeling uncertainty as continuous rather than discrete, which reflects the continuity of real-world policy choice sets and allows the PM to optimize at the margin.

The main substantive difference between my model and that of Huber and McCarty (2001, 353) is that, for them, the effect of uncertainty is to "mitigate the ability of the dominant bargaining player . . . to extract policy concessions from the other side. One reason this occurs is because uncertainty encourages 'safe' bargaining strategies." By contrast, I show that under certain parameter values, the presence of uncertainty can induce the prime minister to make a risky, aggressive proposal. The intuition is that, for low censure costs and high uncertainty, the benefit of moving the proposal closer to the PM's ideal point can outweigh the small increase in the probability of being censured.

Moreover, for certain parameter values, the PM actually obtains *more* utility from using the confidence measure in the presence of uncertainty than she did with complete information. This means that the space of proposals that she will accept from parliament rather than using the confidence vote is actually smaller; in other words, the presence of uncertainty can allow her to extract even larger policy rents by using the confidence vote.

This analysis has empirically verifiable implications. One substantive prediction is that bargaining problems within a coalition partner – between leaders and backbenchers – can enable the prime minister to exploit political uncertainty to obtain greater concessions using a confidence vote. If substantial ideological distance exists between the PM and the rest of the government, this could lead to a poor outcome for the coalition partner. In institutional settings that are less conducive to successful intra-party bargaining (i.e., high Γ), one might then expect for the government to mitigate this possibility by choosing a prime minister who is ideologically closer to the rest of the coalition.

One institutional feature thought to reduce the bargaining power of parties relative to individual MP's is the presence of single-member districts (SMD's), as opposed to party lists. MP's from SMD's are selected by their local constituents, rather than by party leaders, which gives them more independence from the party than MP's selected from party lists. SMD's are present in Germany's two-tiered electoral system, and may have contributed to the Greens' difficulty in directing their members in the example above. An empirical implication of my model is, then, that single-member districts would lead to the government choosing a PM who has a closer ideal point to the rest of the government, in the case of a unilateral vote of confidence procedure.

Another empirical implication comes from interpreting the PM's censure cost,

c^P, as the continuation value in a repeated game. In this case, c^P reflects the loss of opportunities to gain policy concessions in subsequent legislation. According to this interpretation, c^P should decline over the electoral term: the PM has less to lose from having to call an election early as the end of the term approaches. However, there could also be a countervailing effect, because c^P also reflects the electoral costs of resorting to a vote of confidence. This cost may be higher near the end of a term, as a mandatory election approaches; the PM could be reluctant to call a confidence vote when, even if successful, it will be fresh in voters' minds during the ensuing election. Empirical studies could shed light on which of these considerations is paramount.

References

Anderson, Sarah E, Daniel M Butler, and Laurel Harbridge. 2016. "Legislative Institutions as a Source of Party Leaders' Influence." *Legislative Studies Quarterly* 41(3): 605–631.

Baron, David P. 1998. "Comparative Dynamics of Parliamentary Governments." *American Political Science Review* 92(03): 593–609.

Becher, Michael, and Flemming Juul Christiansen. 2014. "Dissolution Threats and Legislative Bargaining." *American Journal of Political Science* .

Cox, Gary W. 2000. "On the Effects of Legislative Rules." *Legislative Studies Quarterly* pp. 169–192.

Diermeier, Daniel, and Timothy J Feddersen. 1998. "Cohesion in Legislatures and the Vote of Confidence Procedure." *American Political Science Review* 92(03): 611–621.

Döring, Herbert. 2001. "Parliamentary Agenda Control and Legislative Outcomes in Western Europe." *Legislative Studies Quarterly* pp. 145–165.

Döring, Herbert, and Christoph Hönnige. 2006. "Vote of Confidence Procedure and Gesetzgebungsnotstand: Two Toothless Tigers of Governmental Agenda Control." *German Politics* 15(1): 1–26.

Fenno, Richard F. 1978. *Home style: House Members in their districts.* Boston: Little, Brown.

Franchino, Fabio, and Bjørn Høyland. 2009. "Legislative Involvement in Parliamentary Systems: Opportunities, Conflict, and Institutional Constraints." *American Political Science Review* 103(04): 607–621.

Golder, Sona N. 2010. "Bargaining Delays in the Government Formation Process." *Comparative Political Studies* 43(1): 3–32.

Heller, William B. 2001. "Making Policy Stick: Why the Government Gets what it Wants in Multiparty Parliaments." *American Journal of Political Science* pp. 780–798.

Huber, John. 1996. "The Vote of Confidence in Parliamentary Democracies." *American Political Science Review* 90: 269–82.

Huber, John D, and Nolan McCarty. 2001. "Cabinet Decision Rules and Political Uncertainty in Parliamentary Bargaining." *American Political Science Review* 95: 345–360.

Jenkins, Jeffery A, and Nathan W Monroe. 2012. "Buying Negative Agenda Control in the U.S. House." *American Journal of Political Science* 56(4): 897–912.

Lupia, Arthur, and Kaare Strøm. 1995. "Coalition Termination and the Strategic Timing of Parliamentary Elections." *American Political Science Review* 89(03): 648–665.

Lynch, Michael S, Anthony J Madonna, and Jason M Roberts. 2016. "The Cost of Majority-Party Bias: Amending Activity under Structured Rules." *Legislative Studies Quarterly* 41(3): 633–655.

Martin, Lanny W, and Georg Vanberg. 2004. "Policing the Bargain: Coalition Government and Parliamentary Scrutiny." *American Journal of Political Science* 48(1): 13–27.

Martin, Lanny W, and Georg Vanberg. 2005. "Coalition Policymaking and Legislative Review." *American Political Science Review* 99(01): 93–106.

McGrath, Robert J, Jon C Rogowski, and Josh M Ryan. 2015. "Gubernatorial Veto Powers and the Size of Legislative Coalitions." *Legislative Studies Quarterly* 40(4): 571–598.

Rasch, Bjørn Erik. 2000. "Parliamentary Floor Voting Procedures and Agenda Setting in Europe." *Legislative Studies Quarterly* pp. 3–23.

Smith, Steven S. 2007. *Party Influence in Congress*. Cambridge University Press.

Strøm, Kaare. 1994. "The Presthus Debacle: Intraparty Politics and Bargaining Failure in Norway." *American Political Science Review* 88(01): 112–127.

Thies, Michael F. 2001. "Keeping Tabs on Partners: The Logic of Delegation in Coalition Governments." *American Journal of Political Science* pp. 580–598.

Tsebelis, George. 2002. *Veto Players: How Political Institutions Work*. New York City: Princeton University Press.