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WASHINGTON UNIVERSITY IN ST. LOUIS
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Three Essays on Separation of Powers and Competitive Elections
by
Myunghoon Kang

A dissertation presented to
The Graduate School
of Washington University in
partial fulfillment of the
requirements for the degree
of Doctor of Philosophy

May 2019
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Myunghoon Kang

Washington University in St. Louis

May 2019

Dedicated to my parents, Youngsook Choi and Gaejun Kang.

ABSTRACT OF THE DISSERTATION

Three Essays on Separation of Powers and Competitive Elections

by

Myunghoon Kang

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Professor Randall Calvert, Chair

This dissertation examines how separation of powers and competitive elections affect the policymaking process at its various stages. First, I explore how the super-majoritarian rule in the legislature, which is the consequence of separation of powers, affects voters's electoral decisions, which in turn indirectly affects the policy outcome. I demonstrate that the super-majoritarian rule of the legislative policymaking process creates not only a legislative gridlock but also incentives that lead some districts to strategically elect more ideologically extreme delegates in certain circumstances, which expands the legislative gridlock region. Second, I examine when competitive elections can restrain the president's unilateral policymaking power. The key innovation is that the president's exercise of unilateral policymaking power reduces the turnout of the president's supporters in the election, which restrain the president's unilateral action when the election is sufficiently competitive. Finally, I examine how separation of powers affect voters' welfare during the policy implementation stage. A central finding of the essay is that separation of powers can improve voters' welfare by mitigating the malign effects of electoral competition: the incumbent president's underfunding to avoid the electoral risks associated with policy implementation. Specifically, separation of powers can improve the effectiveness of policy implementation by placing the power of the purse to one who has to provide larger funds for policy implementation to win the election.

Chapter 1. Introduction

The aim of this dissertation is to analyze the consequences of the interactions between two fundamental political institutions that underlie the representative democracy in the U.S.: competitive elections and separation of powers. Those two political institutions are supposed to address the inherent tension embedded in a representative democracy. As the word *democracy* suggests, policy outcomes under representative democracy need to be aligned with citizens' preferences. To be responsive to citizens' preferences, direct democracy might be the ideal form of democracy. However, in a mass society, it is very inefficient and nearly impossible to make every political decision in the form of direct democracy. In this sense, the high efficiency and practicality of a representative democracy, where a few elected officials govern, justifies the political system of representative democracy. Moreover, if the word *representative* means that the elected officials are merely those who do not have any autonomy but make the citizens' voices present in the policymaking process as described in the delegate model of representation (see Pitkin (1967)), representative democracy is the form of democracy that enhances the efficiency of governing without loss of any responsiveness.

However, the meaning of the word *representative* is not limited to delegates. As Edmund Burke (1790 [1968]) and John Stuart Mill (1861 [1962]) argued, elected officials must be wise and autonomous enough to implement a good policy for citizens even though the implemented policy is not popular. This trustee model of representation has a long intellectual tradition traced back at least to Plato's fear of ochlocracy (see Plato (2003)). The rationale

behind the election of trustees is as follows. A policy is a tool for achieving the desired outcome for citizens. However, citizens are not well-informed about policy. Hence, those who are more knowledgeable must be elected as representatives, and they should be autonomous in the policymaking process to protect democracy from degenerating into mobocracy. This idea of the trustee model of representation has been advocated by many ancient intellectuals. For example, Cicero (1928) and Polybius (2002) believed that a mixed constitution that combines democracy, aristocracy, and monarchy (or kingship) is the ideal form of political system that will prevent the society from being corrupted into ochlocracy while it allows the people as a whole to make fundamental decisions (see Radford (2002) and Asmis (2005)).

In fact, the political institutions of the U.S. can be seen as a modern application of a mixed constitution, where the president (i.e., monarchy), the Senate (i.e., aristocracy), and the House (i.e., democracy) exist simultaneously. However, although this representative democracy as trustee model may eliminate the danger of ochlocracy, there exists a new type of danger that is absent in the delegate model of representation: the advent of tyranny or oligarchy. Ironically, this new problem originates from the solution to eliminate the danger of mobocracy. Based on the informational advantage, political elites may choose a policy that promotes their private interests but makes believe that the policy is for the public good.

Separation of powers can be seen as the principle of political institutions to address this problem. Separation of powers prevents a certain faction of political elites from concentrating powers that leads to tyranny or oligarchy. Separation of powers splits the legislative, executive, and judicial powers into three branches of government so that each branch's ambition can be used to check and balance the ambition of the other branches to prevent unfettered government power. In other words, separation of powers sets the rules that govern the behaviors of political elites, which will enforce them to promote citizens' welfare.

In sum, competitive elections and separation of powers are central political institutions that prevent representative democracy from being corrupted into either destructive mob-

rule or undemocratic tyranny. These two underlying institutions determine “who gets what, when, how” (Lasswell 1936 [1958]) in the U.S. politics and provide the legitimacy with the political outcomes as “an authoritative allocation of values for a society” (Easton 1965).

Although competitive elections and separation of powers are the hallmarks of representative democracy, such a normative claim does not guarantee that these institutions actually lead to a responsive and efficient government. This is where formal theory is required. Formal theory allows us to investigate if these institutions can work as expected. In particular, formal theory has a significant advantage in analyzing the effects of separation of powers and competitive elections on the policymaking process because these two political institutions render the policymaking a strategic game.

The main theme of the dissertation is that the interaction between competitive elections and separation of powers might be a new clue to understanding interesting puzzles we observe in U.S. politics. Elections and the separation of powers may complementarily interact to maintain representative democracy in good form, or it may produce unexpected harmful effects. This dissertation attempts to discover some aspects of these important implications of the interaction between competitive elections and separation of powers. In particular, this dissertation focuses on the three distinct aspects of the policymaking process: election and legislative gridlock, the president’s unilateral policymaking power, and funding decisions in the policy implementation stage.

In the first essay, entitled “Representation, Sophisticated Voting, and the Size of the Gridlock Region,” I explore how a super-majoritarian legislative policymaking process affects voters’s electoral decisions, which in turn indirectly affects the policy outcome. I extend the pivotal politics model by incorporating the election stage in which each of multiple heterogeneous electoral districts elects its delegate to the super-majoritarian legislative body. With this simple but critical twist to the standard model of pivotal politics, I show that the super-majoritarian rule of the legislative policymaking process creates not only a legislative

gridlock but also incentives that lead some districts to strategically elect more ideologically extreme delegates in certain circumstances, which expands the legislative gridlock region.

In the second essay, entitled “Presidential Unilateral Actions as a Tool of Voter Mobilization,” I examine when elections can restrain the president’s unilateral policymaking power. The theoretical contribution of this paper is that the president’s unilateral policymaking power is considered to be the president’s voter mobilization power as well. Specifically, the presidential unilateral action sends the message to a certain subset of potentially pivotal voters that the president cares about them, which mobilizes the targeted voters by increasing their expressive benefits of voting for the president. At the same time, however, the presidential unilateral action activates voters’ constitutional concerns, which demobilizes voters by incurring additional costs of voting for the president. Hence, if the demobilizing effect of the president’s unilateral action outweighs the mobilizing effect of it, then the president does not have an incentive to exercise his unilateral policymaking power even in the absence of checks and balances from the other branches of the government.

Finally, in the third essay, entitled “The Welfare Implications of Separation of Powers and Competitive Elections in Policy Implementation,” builds on implementation literature that views policy implementation as a continuation of the political game from the policy formation stage. A central finding of the essay is that separation of powers can improve voters’ welfare by mitigating the malign effects of electoral competition: the incumbent president’s underfunding to avoid the electoral risks associated with policy implementation. Specifically, separation of powers can improve the effectiveness of policy implementation by placing the power of the purse to one who has to provide larger funds for policy implementation to win the election. The model in this essay also shows that political stalemate caused by separation of powers does not necessarily reduce voters’ welfare. Rather, political stalemate can prevent over-funding in the policy that is not preferred by voters. This essay contributes to both democracy theory and policy implementation literature by providing the welfare grounds of

normative prescriptions for enhancing both the effectiveness of policymaking and electoral accountability.

I do not argue that these three essays present a comprehensive picture of American politics. Rather, I believe that these three essays shed light on important aspects of American politics in the context of representative democracy. After all, we established political institutions to govern our political life in both an efficient and democratic way. Harmonizing these two goals are not easy but not impossible. However, it would be possible only if we correctly understand how the two fundamental institutions interact with each other and what are the consequences. This dissertation is a small effort to contribute to the development of such an understanding.

Chapter 2. Representation, Sophisticated Voting, and the Size of the Gridlock Region¹

2.1 Introduction

Legislative gridlock is endemic to contemporary American politics. As one commentator stated, “[F]rom the federal shutdown to gun control, stalemate is America’s political norm.”² Most commentators and many scholars blame politicians for legislative stalemate. According to this view, legislative gridlock seems like the consequence of politicians’ partisan tactics in order to achieve their partisan goals at the expense of legislative productivity.

However, voters elect politicians in the first place in a representative democracy. In fact, legislative stalemate can be seen as a natural consequence of elections as long as voters have different ideal policies. However, if the degree of legislative stalemate is more severe than what appropriately represents the level of disagreement among voters, and if this exaggeration is caused by voters’ rational electoral decisions independent of any force from partisan politics, we can say at least that voters partly contribute to the malfunction of the legisla-

¹This chapter has been published at the *Journal of Theoretical Politics* 29(4), pp. 623-646.

²E.W. 2014. “Political Gridlock: Unprecedentedly Dysfunctional.” *The Economist*, September 22. <http://www.economist.com/blogs/democracyinamerica/2014/09/political-gridlock> (June 8, 2016).

ture. It thus seems important to understand the role of the electorate in determining the degree of legislative gridlock.

Since Mayhew's landmark study on the performance of legislature (1991), many scholars have delved into the causes of legislative gridlock. There are two distinct approaches in this line of research. On the one hand, scholars have focused on inter-branch partisan conflict as a main cause of legislative gridlock (Mayhew 1991, 2005; Kelly 1993; Edwards et al. 1997; Binder 1999, 2003; Coleman 1999; Howell et al. 2000; Dodd and Schraufnagel 2009). A primary debate in this regard is whether a divided government causes the stalemate and therefore exacerbates legislative productivity. Although scholars have not reached an agreement as to whether a divided government is the main culprit of legislative gridlock, they at least agree that party control is the ultimate cause of the fluctuations in the legislative gridlock.

On the other hand, several scholars have emphasized the interplay of the individual preferences of nonpartisan legislators as another main cause of legislative gridlock (Krehbiel 1996, 1998; Brady and Volden 1998). They exclude the play of partisanship and show that legislative gridlock is the consequence of individual legislators' rational behaviors under the governing institution. This approach is consistent with the counter-intuitive empirical findings from Mayhew (1991, 2005) and others (e.g., Clinton and Lapinski 2006; Chiou and Rothenberg 2008) that a divided government does not have a negative impact on legislative productivity, which implies a low level of gridlock.

Although these partisan and non-partisan approaches are substantively different from each other, they all implicitly assume that politicians cause the fluctuations of the legislative gridlock. This is because both approaches neglect the simple fact that politicians are elected by voters in the first place under a representative democracy. As a result, both approaches do not pay attention to the possible role of the electorate in exacerbating legislative stalemate.

In fact, there are several studies in which voters are conceived to be partly responsible for legislative gridlock because they elect polarized legislators (Pfiffner 2014; Binder 2015). These studies simply assume that polarization in Congress is the natural consequence of ideologically polarized voters. Although this view focuses on the role of the electorate in the degree of legislative stalemate, they view that legislative malfunction is not a systematic consequence of an institutional setting but rather a merely unfortunate mirror image of polarized voters.³

My formal model, however, provides a different approach. It shows that there is an institutional force that exacerbates legislative gridlock, and this institutional force mainly comes from voters' rational voting behavior with the supermajority rule in the legislative policy-making process. Under the supermajority rule, the policy outcome is determined by the position of the relevant pivotal legislator. Knowing this, some voters are incentivized to elect a legislator whose ideal policy is different from theirs; that is, they have incentive to elect a more ideologically extreme legislator than themselves. As a result of this sophisticated voting process, the size of the legislative gridlock region expands.

To demonstrate how this institutional force expands the size of a gridlock region, I build the model based on Krehbiel's nonpartisan model of pivotal politics (1996, 1998). Krehbiel's nonpartisan model is a good starting point since we can isolate any effect from partisan politics on legislative malfunction, which enables us to focus on the role of the electorate in determining the degree of legislative gridlock. That is, a nonpartisan model allows us to analyze voters' behaviors in the absence of any constraint placed by political parties (see Weingast and Marshall (1988) for such a legislative model without partisan politics). The key departure of the model from Krehbiel's model is that voters take into account a likely

³Note that this line of research eventually focuses on partisan politics as a main culprit of legislative dysfunction in the sense that political elites drive voter polarization. Levendusky (2010), for example, argues that elite polarization enhances voter polarization by providing cues to voters (see also Jacobson (2000) and Fleisher and Bond (2001)).

policy outcome to be determined in the legislature when they elect their representatives (see Austen-Smith 1986; Penn 2009; Harstad 2010; Klumpp 2010).⁴

All voters sophisticatedly make their decisions to maximize their utilities. As a result of this strategic consideration, voters choose either legislators whose ideal points are congruous with theirs or legislators whose ideal points are different from theirs. In this sense, all voters sophisticatedly vote but such voting behaviors can be distinguished based on whether or not their choices are congruous with their ideal points. To capture this idea, I use *congruous voting* to refer to the sophisticated voting behavior that voters elect legislators whose ideal points are congruous with their preferences. Meanwhile, I use *incongruous voting* to indicate the sophisticated voting behavior that voters elect representatives whose ideal points are incongruous with their preferences. Note that congruous voting differs from sincere voting, although both voting behaviors are observationally equivalent because sincere voting does not come from voters' sophisticated consideration. In this sense, congruous voting can be seen as sophisticated sincerity (for the concept of sophisticated sincerity and its application, see Austen-Smith (1987) and Glaeser et al. (2005)).

The main finding is that the gridlock region expands as a result of voters' sophisticated voting behaviors if the position of the status quo is neither too moderate nor too extreme. Specifically, if the previous condition is satisfied, then i) at least one voter elects a representative whose ideal policy is incongruous with her ideal points, ii) the voters who cast an incongruous vote must elect candidates more ideologically extreme than themselves as their representatives, and iii) those elected legislators by incongruous voting must be a pivotal

⁴This assumption of sophisticated voters may appear to be strong to some readers. However, many studies present empirical evidence of voters' sophisticated voting behaviors. For example, Ordeshook and Zeng (1997) provide empirical evidence that voters act strategically in the voting booth. Abramson et al. (1992) also confirm that voters' choices in the 1988 U.S. presidential primaries are consistent with sophisticated voting. Penn (2009) illustrates gay rights groups' temporary retreat from winning the same-sex marriage right as the strategic move of farsighted voters. All of these examples clearly show that voters take what will happen in the future as a consequence of a current decision into account when they make a decision. Hence, I regard the assumption to be justifiable in the sense that voters are farsighted and sophisticated.

legislator who determines the legislative policy outcome in an equilibrium. As a result, incongruous voting always results in an expanded legislative gridlock region compared to the counterfactual gridlock region that would have emerged if all of the voters had cast a congruous vote. Hence, the expansion of the gridlock region depends on whether the position of the status quo leads some voters to vote incongruously.

2.2 Related Formal Models

There are several models that show that incongruous voting can be optimal for voters (Austen-Smith 1986; Chari et al. 1997; Harstad 2010; Klumpp 2010) when voters take account of the post-election legislative bargaining process in the context of distributive politics among multi-constituencies. However, these models only focus on the consequent policy outcomes and not on the consequent gridlock region from incongruous voting. Harstad (2010) shows that a large majority requirement generally leads voters to incongruous voting, and the status quo is more likely to remain as a consequence of such voting. Klumpp (2010) shows that incongruous voting is motivated by voters not knowing which member of the legislature will propose a new bill. This uncertainty leads some voters to incongruous voting as an insurance against an extreme policy outcome. This incongruous voting, in turn, results in a conservative policy outcome, that is, a policy outcome biased toward the status quo. Hence, the heterogeneity of districts is the main factor that determines the magnitude of conservatism, that is, a smaller set of possible policy alternatives (i.e., a smaller set of alternatives capable of defeating the status quo).

In contrast to the above models, I incorporate the gridlock interval into the model. Moreover, I show that whether a voter's choice deviates from her ideal policy depends on the position of the status quo, and thus the status quo endogenously affects the width of the gridlock region. In addition, the model shows that incongruous voting occurs even without

uncertainty about a future agenda setter.

There are other sophisticated voting models in a Downsian framework in which candidates choose their policy platforms to get elected. Although these models focus on politicians' strategic decisions, there are some points relevant to the model. Aragonès and Palfrey (2002), and Krasa and Polborn (2014) present “differentiated-candidate” models. In these models, voters care about both the candidates' idiosyncratic characteristics and their policy positions. Krasa and Polborn (2016) advance their model by including both local candidates' party labels and the legislative policy outcome in a voter's utility function. The model accepts this idea that voters' utilities consist of the dual components. Voters care about the legislative policy outcome in the model. However, I include the ideological congruence between elected legislators and voters as the second component of voters' utilities instead of party labels. This is because the model rules out any possible effect of partisan politics on legislative gridlock, as discussed above. In this regard, the model also differs from the model of Krasa and Polborn (2016) in that there is no centralized nomination process conducted by political parties. Furthermore, the model incorporates the important institutional features of legislative politics in the United States: a presidential veto, a congressional veto override, and a filibuster in the Senate. By adding these components of pivotal politics, the model can examine the effect of voters' electoral decisions on the size of the gridlock region, which is not incorporated into their model.

Alesina and Rosenthal (2000), Callander (2005), and Palfrey (1984) explain that policy divergence is an equilibrium result of political parties' strategies to deter other political parties from entering the electoral competition in the context of multiple heterogeneous districts. In particular, Alesina and Rosenthal's model emphasizes that parties nominate a legislator with an extreme policy platform because this extremity of policy will be canceled out through the legislative bargaining process. These models and my model share a common feature in that they all incorporate multiple heterogeneous districts and the fact that

a voter’s payoff depends on other districts’ electoral results. However, the model shows that an extreme legislator can be elected in certain districts even in the absence of the party nomination process, which implies that the expansion of the gridlock region occurs even if voters’ rational decisions are not hindered by uncertainty or the party nomination process. This paper is organized as follows. I introduce the model in the next section. In section 4, I provide the results. I will present two main results: i) the conditions of the status quo that cause incongruous voting among voters and ii) that incongruous voting always leads the legislative gridlock interval to expand if such conditions are satisfied. A discussion of the model follows.

2.3 The Model

In the model, there is a legislative body in which a new bill is proposed by majority rule, but the proposed bill is voted on by supermajority rule. The most famous example of this setting is the U.S. federal legislature that was modeled by Krehbiel (1996). I assume a single-dimensional policy space of \mathbb{R} .⁵ There are n electoral districts, and I assume that n is an odd number for simplicity.⁶ Following Klumpp (2010), I assume that there is a continuum of voters whose ideal points are distributed on \mathbb{R} with positive density everywhere in each electoral district. I order all n electoral districts’ median points and index them in increasing order. The index can be used interchangeably to denote the order of a particular electoral district’s median point and the label of each electoral district. Let $v_i \in \mathbb{R}$ denote the electoral

⁵To be precise, I use the predictive single policy dimension that is presented by Enelow and Hinich (1984) to map multiple policy issues into a single dimensional policy space. Hence, the status quo in the model is not a single policy issue per se but the weighted projection of multiple policy issues in the predictive single dimensional policy space. To use the predictive single policy dimension, I assume the following: First, all voters’ preferences are separable across multiple issues. Second, all voters have a common perception of the status quo policies on each issue. Third, I assume that each voter weighs all issues equally so that their preferences are based on Euclidean distance. Finally, I assume that all voters share the same ideological measure. For more detail about the predictive dimension, see Enelow and Hinich (1984).

⁶I implicitly assume that n is sufficiently large to have the left and right pivotal legislators.

district i 's median point. Then, v_1 denotes the electoral district with the smallest median point, and I refer to this electoral district as electoral district 1. Let m denote the median of $N = \{1, 2, \dots, n\}$. Following Klumpp (2010), the configuration of electoral districts' medians can be denoted by the vector \mathbf{v} as follows:

$$\mathbf{v} = (v_1, v_2, \dots, v_m, \dots, v_{n-1}, v_n) \in \mathbb{R}^n$$

where $v_1 < v_2 < \dots < v_m < \dots < v_{n-1} < v_n$. For convenience, I normalize districts' median points so that the median electoral district's ideal point is 0 (i.e., $v_m = 0$).⁷ Following the standard model of pivotal politics presented by Krehbiel (1996), let r, m , and l denote the order in \mathbf{v} for any electoral district to be the right, median, and left pivotal district, respectively. Call electoral district v_r *the right pivotal district*. Similarly, call electoral district v_l *the left pivotal district*.

Each electoral district simultaneously elects a legislator. Let $c_i \in \mathbb{R}$ denote an ideal point of a legislator who is elected in district i . The legislature consists of legislators from all of the electoral districts and can be denoted by the vector \mathbf{c} as in the following example:⁸

$$\mathbf{c} = (c_3, c_2, \dots, c_n, \dots, c_m, c_{n-1}) \in \mathbb{R}^n.$$

Again, I order legislators' ideal points in increasing order in the same fashion as I did for the electoral districts. Let $K : \mathbb{R}^n \rightarrow \{1, \dots, n\}$ be a function such that $K(c_i, c_{-i}) = k$ where k is the order of an ideal point of a legislator that is from district i in the legislature formed after the election. For example, $K(c_i, c_{-i}) = 1$ means that the ideal point of an elected legislator

⁷This normalization can be easily done by subtracting v_m from all districts' ideal points and the status quo.

⁸Note that I allow the possibility that legislators elected in different electoral districts have the same ideal point whereas I assume that all electoral districts have a different median point from each other.

from district i is located at the first from the left in policy dimension \mathbb{R} , which in turn implies that district i has the most liberal legislator in the legislature \mathbf{c} . I use a superscript to denote the order of an ideal point of a legislator in the legislature \mathbf{c} . For instance, c^k denotes a legislator whose ideological order is k th in \mathbf{c} .

Similar to the definition of the right and left pivotal district, call legislator c_i such that $K(c_i, c_{-i}) = r$ the *right pivotal legislator* and legislator c_i such that $K(c_i, c_{-i}) = l$ the *left pivotal legislator* in legislature \mathbf{c} . If more than one legislator has the same ideal point at a pivotal position, then I consider both legislators as a pivotal legislator. For notational convenience, I configure the notation so that c^r, c^m, c^l denote the ideal point of the right pivotal legislator, the left pivotal legislator, the median legislator, respectively.

I assume that there is a single representative voter in each district i , whose ideal point is v_i .⁹ In addition, I assume that the ideal points of all voters are common knowledge.¹⁰ One crucial assumption that I make in the model is that voters know how the legislative outcomes are determined. In other words, voters know that a new bill is proposed by the median legislator but voted on by supermajority rule. This legislative policy-making process may motivate voters to sophisticatedly elect a legislator.

Voters care about both the incongruence term of an elected legislator and the policy outcome that is determined in the legislature. The incongruence term of an elected legislator can be measured by the congruence between the elected legislator and the district median, i.e., $-(v_i - c_i)^2$. This measurement strategy is based on the fact that voters highly evaluate a legislator who identifies himself as one of the voters and understands what the voters think (Fenno, 1977). Voters also want a legislator who can yield the best policy outcome x that

⁹This assumption means that there is a decentralized electoral process which guarantees that the electoral winner of each district maximizes the median voter's utility in each district as the median voter theorem predicts (see Klumpp (2010) for one example of such electoral process). This assumption strengthens the findings in that the gridlock is expanded by elections even if the median voter has full control in each electoral district.

¹⁰Voter i and district i are interchangeably used throughout the paper. The model is equivalent to that each of n voters simultaneously chooses her agent who will cast a vote on the proposed bill in the legislature.

replaces s_0 through the legislative policy-making process. A voter's utility function assumes the following form:¹¹

$$u_i(c_i, x(c_i, c_{-i})) = -(v_i - x)^2 - (v_i - c_i)^2.$$

I assume that the status quo policy s_0 is determined by nature before the election.

Finally, I assume that the elected legislator is policy-motivated. The elected legislator's utility function is:

$$u_{c_i}(x(c_i, c_{-i})) = -(c_i - x)^2.$$

The game proceeds as follows:

- i. Each district elects a legislator, c_i ,
- ii. The median legislator proposes a new bill, and the bill is voted on,
- iii. Payoffs are materialized, and the game ends.

¹¹Some readers may wonder if the equilibrium is affected by the absence of congruence term in a voter's utility function. In fact, there is an infinite number of equilibria if I omit the congruence term from a voter's utility function. Note, however, that the equilibria that I identified with the congruence term still exist as one specific type of multiple, possible equilibria without any congruence term. Hence, the congruence term can be seen as a more restrictive equilibrium refinement that narrows our attention to equilibria with substantive meaning. Also, a weight parameter for each component can be incorporated here, but I omit it because the basic mechanism that leads to expanding the gridlock region can be clearly shown without doing so.

2.4 Results

2.4.1 Congruous Voting and the Non-expansion of the Gridlock Region

The solution concept of the game is a subgame perfect Nash equilibrium. Since supermajority is required to pass a bill in the legislature, we can use the following Lemma 1 to identify the equilibrium policy outcome of the policy-making process in the legislature.

Lemma 1 (Krehbiel 1996). *For each status quo $s_0 \in [c^l, c^r]$, no bill passes the legislature so that the equilibrium legislative outcome is $x = s_0$. If $s_0 \notin [c^l, c^r]$, a new bill is proposed and passes the legislature so that the equilibrium legislative outcome is then*

$$x = \begin{cases} \max\{c^m, 2c^r - s_0\} & \text{if } s_0 > c^r, \\ \min\{c^m, 2c^l - s_0\} & \text{if } s_0 < c^l. \end{cases}$$

Lemma 1 follows from the standard model of pivotal politics (Krehbiel 1996). Lemma 1 states that the legislative outcome depends on the relative positions of the status quo and pivotal legislators. Since the status quo is exogenously determined in the model, the only way to affect the legislative outcome is to change the position of pivotal legislators. More specifically, the pivotal legislator closest to the status quo determines the equilibrium policy outcome. I call such a pivotal legislator *the effective pivotal legislator*.

We need to identify the Nash equilibrium permutation of legislators in which no voter has any incentive to deviate. From this reasoning, we can define the *Nash equilibrium legislature* as follows:

Definition 1. A legislature $\mathbf{c}^* = (c_i^*, c_{-i}^*)$ is the Nash equilibrium legislature if and only if $u_i(c_i^*, x(c_i^*, c_{-i}^*)) \geq u_i(c_i, x(c_i, c_{-i}^*))$ for all $c_i \neq c_i^*$ and for all $i \in \{1, 2, \dots, n\}$.

Additionally, I define a *gridlock region* in a legislature as follows:

Definition 2. In a given legislature, the interval $[c^l, c^r]$ is the gridlock region.

We need a baseline gridlock region to determine whether sophisticated voting independently expands the gridlock region. For this purpose, we can think of a counterfactual gridlock region that would be created if all voters cast an ideologically sincere vote.¹²

Definition 3. In a given legislature, the interval $[v_l, v_r]$ is the counterfactual baseline gridlock region.

If the gridlock region in the legislative body is larger than the counterfactual baseline gridlock region, we can conclude that the electoral process causes the expansion of the gridlock region. Regardless of the degree of polarization among voters, we can measure the portion of expansion of the gridlock region that is caused via the electoral process by comparing the gridlock region with the counterfactual baseline gridlock region.

There are two types of sophisticated voting behaviors: incongruous voting and congruous voting. Recall that voters care about both the legislative outcome and the congruence between legislators and themselves. These two components of a voter's utility function render incongruous voting costly. Incongruous voting may increase a voter's benefit by yielding a more preferred legislative outcome, but it also increases a voter's disutility by electing a

¹²A counterfactual gridlock region can be interpreted as a gridlock region in a legislature in which legislators are purely representatives who make their voters present again in the policy-making process. See Pitkin (1967) for the definition of such representation.

legislator who does not perfectly represent the voter. Hence, a voter would cast an incongruous vote only if incongruous voting provides enough policy benefits to compensate for the incongruence cost. Furthermore, the following Lemma 2 states that voters elect more extreme representatives than they are when they cast an incongruence vote.

Lemma 2. *No district elects a legislator $c_i < v_i$ in any equilibrium legislature when $s_0 > 0$. Similarly, no district elects a legislator $c_i > v_i$ in any equilibrium legislature when $s_0 < 0$.*

Proof. See Appendix.

From Lemma 1 and Lemma 2, we can deduce the following Lemma 3.

Lemma 3. *If $s_0 > 0$, then $c_i^* = v_i$ in any equilibrium legislature \mathbf{c}^* for all i such that $v_i \geq s_0 > 0$. Similarly, if $s_0 < 0$, then $c_i^* = v_i$ in any equilibrium legislature \mathbf{c}^* for all i such that $v_i \leq s_0 < 0$.*

To see the intuition behind Lemma 3, suppose $s_0 > 0$ without loss of generality. By Lemma 2, the ideal point of the representative from district i such that $v_i \geq s_0$ must be either greater than or equal to the status quo. If c_i is the effective pivotal legislator in the legislature, then $c_i = c^r \geq v_i \geq s_0$, which means the legislature cannot pass a new bill because the status quo is in the gridlock region. Then, the optimal choice for i is congruous voting.

If c_i is not the effective pivotal legislator, there are two possible sub-cases. First, the effective pivotal legislator's ideal point is less than the status quo (i.e., $c^r < s_0$). In this case, the only way for voter i to become a new effective pivotal legislator is to elect a representative whose ideal point is less than c^r , which is not possible by Lemma 2. Hence, voter i cannot change the policy outcome, which implies that congruous voting is optimal for voter i .

Second, it is possible that the effective pivotal legislator's ideal point is equal to or greater than the status quo (i.e., $c^r \geq s_0$). In this case, it is easy to see that the legislature cannot pass a new bill because the status quo is in the gridlock region. The only way for voter i to break this stalemate is to elect a moderate representative whose ideal point is less than the status quo, which is not possible by Lemma 2. Hence, again, the optimal choice for voter i is congruous voting. From Lemma 3, we can conclude as the following Lemma 4.

Lemma 4. *No voter votes incongruously in any equilibrium legislature if $s_0 \in [v_l, v_r]$.*

It is easy to understand Lemma 4. Without loss of generality, suppose $0 < s_0 \leq v_r$. By Lemma 3, all voters whose ideal points are greater than or equal to v_r will cast a congruous vote. Therefore, it is guaranteed that there are at least $n - r$ legislators to the right of v_r . If there are exactly $n - r$ legislators to the right of v_r , then a legislator from district r is the effective pivotal legislator (i.e., $c^r = v_r = c_r$), and the legislative outcome is s_0 since the status quo is in the gridlock region. If there are more than $n - r$ legislators to the right of v_r , then the effective pivotal legislator's ideal point must be greater than v_r . In addition, it must be that some voters whose ideal points are less than v_r elected an extreme representative to make this scenario happen. However, there is no incentive for voters whose ideal points are less than v_r to do so because the legislative outcome does not change due to the fact that s_0 is in the gridlock region. Since voters whose ideal points are less than v_r cannot change the legislative outcome in both cases, their optimal choices are congruous voting by which they can minimize the incongruence between their representatives and themselves.

The main rationale for Lemma 4 is that incongruous voting does not yield any additional benefit even if a voter manages to make her representative the pivotal legislator by incongruous voting when $s_0 \in [v_l, v_r]$. Therefore, she does not have any incentive to vote incongruously, which only incurs an incongruence cost.

However, Lemma 4 does not tell us about the existence of an incongruous voter when $s_0 \notin [v_l, v_r]$. As the following Lemma 5 states, the existence of at least one incongruous voter requires the status quo to not be too extreme.

Lemma 5. *All voters cast a congruous vote in any equilibrium legislature if $s_0 > (1 + \sqrt{5})v_r$ or $s_0 < (1 + \sqrt{5})v_l$.*

The intuition behind Lemma 5 is that the benefits from improving the policy outcome will not be substantial enough to compensate for the incongruence cost incurred by incongruous voting when the status quo is too extreme. Note that the median legislator's ideal point is 0 by Lemma 6 below. Suppose $s_0 > 2v_i$, and suppose that it is guaranteed that c_i is the effective pivotal legislator. If voter i casts a congruous vote (i.e., $c_i = v_i$), then the policy outcome is 0. Hence, incongruous voting is not profitable for voter i if the following condition holds:¹³

$$-(v_i - 0)^2 > -(v_i - 2c_i + s_0)^2 - (v_i - c_i)^2.$$

where $c_i > v_i$. Note that voter i can receive the maximum utility from incongruous voting by choosing $c_i^* = \frac{2s_0 + 3v_i}{5}$.¹⁴ Therefore, if the status quo s_0 is so extreme that the above condition holds even when she can get the maximum utility via incongruous voting from this game (i.e., $c_i = c_i^*$), then voter i always cast a congruous vote since the utility via incongruous voting is always worse than the one from congruous voting. Setting $c_i = c_i^*$, it becomes

¹³I implicitly assume that voter i prefers incongruous voting to congruous voting if the utilities from both voting behaviors are the same.

¹⁴Note that this maximum utility also requires that $c_i^{r+1} \geq \frac{2s_0 + 3v_i}{5}$.

apparent that the above condition is reduced to the following condition:

$$s_0 > (1 + \sqrt{5})v_i.$$

Hence, if $s_0 > (1 + \sqrt{5})v_i$, voter i casts a congruous vote. Note that $(1 + \sqrt{5})v_i$ is greater than $2v_i$. If only congruous voting is allowed for voter i , she cannot yield a better policy outcome than 0 by congruous voting if $s_0 > 2v_i$. However, incongruous voting expands the range of the status quo where she can possibly manipulate to obtain a policy outcome other than 0.

Now, suppose $s_0 > (1 + \sqrt{5})v_r$. In this case, c_r must be the effective pivotal legislator. To see why, suppose that c_r is not the effective pivotal legislator. Consider the case where $c_i = c^r$ with $v_i < v_r$. Lemma 2 implies that $c_i = c^r > v_r$. If $2c^{r-1} - s_0 > v_i$, then switching from incongruous voting to congruous voting yields a more preferable policy outcome for voter i . Additionally, she can minimize the incongruence cost. Therefore, congruous voting is optimal for voter i in this case. If $2c^{r-1} - s_0 \leq v_i$, switching to congruous voting guarantees that the policy benefits are at least as good as the policy benefits from 0. Moreover, she can minimize the incongruence cost. Recall that $s_0 > (1 + \sqrt{5})v_r$ implies $s_0 > (1 + \sqrt{5})v_i$, which means the utility from incongruous voting is always less than the utility from the case where the policy outcome is 0 and she chooses v_i . Therefore, congruous voting is also optimal for voter i . Therefore, we see that all voters whose ideal points are less than v_r cast a congruous vote when $s_0 > (1 + \sqrt{5})v_r$.

Now, suppose that c_r is not the effective pivotal legislator and suppose that $c_i = c^r$ with $v_i > v_r$. Then, by Lemma 2 and the above observation, it must be that $c^{r-1} < v_r < v_i \leq c_i = c^r < c_r$. Then, voter r can improve her utility by choosing $c_r = c_i$ since she can reduce the incongruence cost while maintaining the same policy outcome. Therefore, c_r must be the effective pivotal legislator. Then, the above condition implies that voter r 's optimal choice

is congruous voting, which results in that her representative becoming the unique new effective pivotal legislator whose ideal point is at v_r . Consequently, for all voters whose ideal points are greater than v_r , the only way to change the effective pivotal legislator is to elect a representative whose ideal point is less than v_r , which is impossible by Lemma 2. Therefore, there is no merit in incongruous voting for such voters, which establishes Lemma 5.

From Lemma 4 and Lemma 5, we can conclude that all voters cast a congruous vote if $s_0 \notin [(1 + \sqrt{5})v_l, v_l) \cup (v_r, (1 + \sqrt{5})v_r]$. Since all voters cast a congruous vote in this case, it is clear that the equilibrium legislature will perfectly represent all voters' ideal points. From this reasoning, we can conclude as follows:

Proposition 1. *If $s_0 \notin [(1 + \sqrt{5})v_l, v_l) \cup (v_r, (1 + \sqrt{5})v_r]$, any equilibrium legislature inherits the counterfactual baseline gridlock region as its gridlock region, that is, $[v_l, v_r]$.*

From Proposition 1, we see that the electoral process does not expand the size of the gridlock region if the status quo is too moderate or too extreme. Why do all voters cast a congruous vote? It is because there is no incentive for voters to have the effective legislator. The benefits of having the effective pivotal legislator are realized when the position of the effective pivotal legislator affects the position of the policy outcome. However, the position of the effective pivotal legislator does not have any influence on the policy outcome if the status quo is too moderate or too extreme. As such, there is no way for voters to affect the position of the policy outcome through incongruous voting. Moreover, incongruous voting incurs costs. Hence, the only way for voters to maximize their utilities is to minimize the cost of incongruence by congruous voting.

What will happen to the gridlock region if the status quo is in $s_0 \in [(1 + \sqrt{5})v_l, v_l) \cup (v_r, (1 + \sqrt{5})v_r]$? This is the question that will be addressed in the next subsection.

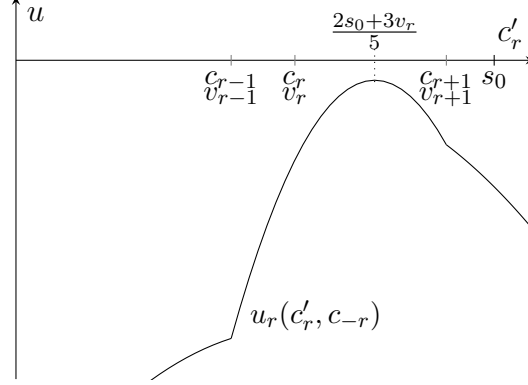


Figure 2.1: The utility levels of voter r that correspond to the deviations c'_r from $c_r = c^r$.

2.4.2 Incongruous Voting and the Expansion of the Gridlock Region

We see that all voters cast a congruous vote if the status quo is not in the interval $[(1 + \sqrt{5})v_l, v_l) \cup (v_r, (1 + \sqrt{5})v_r]$. From this result, we may ask if all voters still cast a congruous vote when the status quo is in the interval $[(1 + \sqrt{5})v_l, v_l) \cup (v_r, (1 + \sqrt{5})v_r]$. As a starting point, we may check if the congruous voting of all voters constitutes an equilibrium legislature if $s_0 \in [(1 + \sqrt{5})v_l, v_l) \cup (v_r, (1 + \sqrt{5})v_r]$. Suppose $s_0 > v_r$ and $c_i = v_i$ for all i . Then, it is easy to see that $c_i = c^i$ for all i . In addition, assume that $2c^r - s_0 > 0$ so that the legislative outcome x is greater than 0. Recall that voter r 's payoff can be maximized if she elects a representative whose ideal point is $\frac{2s_0 + 3v_r}{5}$. If $(r + 1)$ th legislator's position is greater than $\frac{2s_0 + 3v_r}{5}$, voter r has an incentive to deviate to $\frac{2s_0 + 3v_r}{5}$ since her representative is still the effective pivotal legislator, and, therefore, her deviation can effectively change the legislative outcome to maximize her payoff. Hence, we see that congruous voting by all voters does not constitute an equilibrium as depicted in Figure 2.1.

Then, does the deviation from c^r to $\frac{2s_0 + 3v_r}{5}$ that is depicted in Figure 2.1 constitute an equilibrium? The answer is positive. If a voter whose ideal point is less than v_r wants to replace the effective pivotal legislator $\frac{2s_0 + 3v_r}{5}$, she must deviate by electing a representative

whose ideal point is greater than $\frac{2s_0+3v_r}{5}$. However, this deviation by voter $r - 1$ pulls the legislative outcome more toward the status quo, which is a worse outcome for her. Therefore, incongruous voting is not optimal for such voters. Similarly, a voter whose ideal point is greater than $\frac{2s_0+3v_r}{5}$ can change the legislative outcome only via electing a representative whose ideal point is less than $\frac{2s_0+3v_r}{5}$. However, this deviation results in the new legislative outcome that is farther from her ideal point. Hence, we see that the effective pivotal legislator's ideal point must be greater than his district's ideal point in an equilibrium.

Note that the above example is a special case of the equilibrium in which the effective pivotal legislators are elected from the pivotal district. It is possible that the effective pivotal district does not necessarily have the effective pivotal legislator in an equilibrium in a certain configuration of the ideal points of electoral districts.¹⁵ However, we are not interested in specifying all of the possible patterns of an equilibrium. Rather, we want to know whether the gridlock region in any equilibrium is larger than the counterfactual baseline gridlock region. Hence, it is necessary to identify the general features of an equilibrium legislature when $s_0 \in [(1 + \sqrt{5})v_l, v_l) \cup (v_r, (1 + \sqrt{5})v_r]$. If we can show that i) at least one voter votes incongruously, ii) that the ideal point of the elected representative via incongruous voting is greater than v_r (or less than v_l) in any equilibrium, and iii) the elected representative via incongruous voting is always the effective pivotal legislator, then we can conclude that the gridlock region will be wider than the counterfactual baseline gridlock region $[v_l, v_r]$ when $s_0 \in [(1 + \sqrt{5})v_l, v_l) \cup (v_r, (1 + \sqrt{5})v_r]$. We can deduce some useful properties of an equilibrium legislature as the following Lemma 6.

Lemma 6. *In any equilibrium legislature \mathbf{c}^* with $s_0 \in (v_r, (1 + \sqrt{5})v_r]$, the following properties hold.*

¹⁵Also, it is possible that there exist multiple equilibria for a certain single configuration of the ideal points of electoral districts. However, the finding that there exists at least one incongruous voter who expands the gridlock region still holds in all the equilibria.

- (a) For all i such that $v_i \leq 0$, $c_i^* = v_i$,
- (b) For all i such that $v_i \geq s_0 > 0$, $c_i^* = v_i$,
- (c) For all i such that $s_0 > v_i > 0$, $v_i \leq c_i^* \leq \frac{2s_0+3v_i}{5}$,
- (d) For all i , $v_i \neq c_i^*$ implies $v_i = c^{r*}$,
- (e) There exists at least one district such that $v_i \neq c_i$.

Similarly, in any equilibrium legislature \mathbf{c}^* with $s_0 \in [(1 + \sqrt{5})v_l, v_l)$, the following properties hold.

- (a) For all i such that $v_i \geq 0$, $c_i^* = v_i$,
- (b) For all i such that $v_i \leq s_0 < 0$, $c_i^* = v_i$,
- (c) For all i such that $s_0 < v_i < 0$, $v_i \geq c_i^* \geq \frac{2s_0+3v_i}{5}$,
- (d) For all i , $v_i \neq c_i^*$ implies $v_i = c^{l*}$,
- (e) There exists at least one district such that $v_i \neq c_i$.

Proof. See Appendix.

Lemma 6 can be seen as an extension of the result in Klumpp (2010) to the pivotal politics model. Lemma 6 (a) states that if the distance between a voter's ideal point and the status quo is greater than the distance between the median voter's ideal point and the status quo, then the voter casts a congruous vote. Part (b) is simply a restatement of Lemma 3.

Lemma 6 (c) states that voters never vote incongruously to elect a legislator more moderate than themselves, as Lemma 2 states. Moreover, Lemma 6 (c) clearly sets the upper bound of the range of possible deviation from voters' ideal points. Lemma 6 (d) states that a legislator who is elected by incongruous voting must be the effective pivotal legislator in an equilibrium legislature. Incongruous voting is rational for them only when the gains in policy outcome by doing so sufficiently compensate for the loss in the incongruence, which

is possible only if incongruous voting leads voters to have the effective pivotal legislator.

Note that the converse of Lemma 6 (d) is not true. It is possible that more than one legislator can be at the effective pivotal position when one legislator is elected by congruous voting while the other is elected by incongruous voting. To see why, see Appendix.

Lemma 6 (e) clearly states that there exists at least one district that elects an extreme legislator compared to the district's ideal point. It is easy to see why Lemma 6 (e) holds. If there is no extreme legislator, the positions of all legislators in an equilibrium legislature will be the same as the positions of all districts' ideal points. Thus, the effective pivotal legislator will be a representative from district r . However, as I have already shown in Figure 2.1, voter r would have an incentive to elect an extreme legislator whose ideal point is $\min\{\frac{2s_0+3v_r}{5}, v_{r+1}\}$.

Note that the other pivotal legislator's ideal point remains the same as in the counterfactual baseline gridlock region that I identified in Proposition 1 (e.g., $c^l = v_l$ if $s_0 > 0$) by Lemma 6 (a) and that the legislator who is elected via incongruous voting must be the effective pivotal legislator by Lemma 6 (d). Hence, if the ideal point of the legislator who is elected by incongruous voting is greater than v_r , it is obvious that the gridlock region will be wider than the one that I identified in the previous subsection.

It is easy to understand why $c^r > v_r$ always holds. If all voters whose ideal points are less than or equal to v_r do not have an incentive to elect a legislator whose ideal point is greater than v_r , then $c^r = v_r$ is possible.¹⁶ If so, however, voter r then has an incentive to elect an extreme legislator whose ideal point lies in the interval $(v_r, \min\{\frac{2s_0+3v_r}{5}, v_{r+1}\}]$. Hence, $c^r = v_r$ cannot hold in the equilibrium legislature. Next, $c^r < v_r$ is possible only when at least one voter whose ideal point is greater than v_r elects a representative whose ideal point is less than v_r . However, Lemma 2 states that this is impossible. Therefore, it must be that

¹⁶Note that Lemma 2 states that voters whose ideal points are greater than v_r do not elect a legislator whose ideal point is less than or equal to v_r . Hence, we can safely rule out those voters from our consideration.

$c^r > v_r$.

In conclusion, we see that the gridlock region when $s_0 \in [(1 + \sqrt{5})v_l, v_l) \cup (v_r, (1 + \sqrt{5})v_r]$ is wider than the counterfactual baseline gridlock region $[v_l, v_r]$. With these understandings, we can reach the following conclusion:

Proposition 2. *With other things being the same, the gridlock region in any equilibrium legislature with $s_0 \in [(1 + \sqrt{5})v_l, v_l) \cup (v_r, [1 + \sqrt{5})v_r]$ is wider than the counterfactual baseline gridlock region $[v_l, v_r]$ as a result of incongruous voting by at least one voter.*

We see that the gridlock region is expanded compared to the counterfactual baseline gridlock region. The reason is simple: If the status quo is either too moderate or too extreme, the pivotal legislator is not, in fact, pivotal in the sense he cannot affect the legislative outcome since the status quo cannot be replaced (too moderate status quo) or the legislative outcome is to be at the median legislator's ideal position (too extreme status quo). Hence, there is no incentive for any voters to conduct costly incongruous voting to make their representatives as the pivotal legislator. Conversely, if the status quo is neither too moderate nor too extreme, the effective pivotal legislator is indeed pivotal in terms of determining the policy outcome. Hence, the cost incurred by incongruence can be sufficiently compensated by the policy benefits, and voters do not forgo this opportunity. Notice that supermajority rule creates pivotal privilege. When voters can enjoy the pivotal privilege provided by the supermajoritarian feature of the legislative process, their optimal choice is to make use of this institutional opportunity to maximize their benefits. In sum, the expansion of the size of the gridlock region is a consequence of individual voters' rational behaviors when they are given the opportunity.

2.5 Discussion and Conclusion

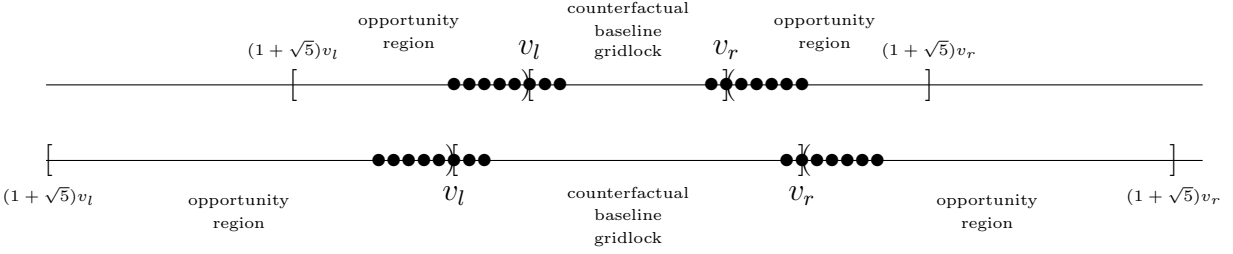
I have shown that voters bear some responsibility for the expansion of the gridlock region. If there is an opportunity in which incongruous voting is profitable, the model shows that some voters have incentive to do so at the expense of the expansion of the gridlock region, even in the absence of partisan politics. More specifically, incongruous voting and the consequent expansion of the gridlock region occurs if and only if the status quo is neither too moderate nor too extreme. If it is too extreme, more than the supermajority agrees with the median legislator's proposal. If it is too moderate, more than the supermajority agrees not to change the status quo. Following this sense, the interval of $[(1 + \sqrt{5})v_l, v_l] \cup (v_r, (1 + \sqrt{5})v_r]$ could be termed as the *opportunity region*.

With this understanding in mind, one might ask how plausible it is that the status quo is in the opportunity region. Based on the ample extant theoretical research that predicts that the status quo falls in the opportunity region as a result of various causes, I expect that it may not be unusual to encounter the status quo in the opportunity region. For example, a nature-induced shock may move the status quo into the opportunity region over time (Cox and McCubbins 2002, 2005). Similarly, the ideological configuration of voters can vary over-time, which consequently shifts both the counterfactual baseline gridlock region $[v_l, v_r]$ and the opportunity region, as modeled by Krehbiel and Callander (2014). Hacker and Pierson (2010a, 2010b) also present some real world instances of the change of the status quo policy outcome caused by technical innovations or changes in demographics, which opens the possibility that the changed status quo policy outcome falls in the opportunity region. Krehbiel et al. (2015) show that the equilibrium policy outcome can be in the opportunity region as a result of agenda-based or resource-based partisan competition game with the existence of the minority party with one chance for a proposal amendment or small endowment of resources, although their model builds on partisan politics.

Presidential unilateral action is another interesting and possible mechanism that yields the status quo in the opportunity region. This is interesting in the sense that presidents can tactically move the status quo into the opportunity region to expand the gridlock region for their political ends. Indeed, moving the status quo by unilateral action such as executive orders is one of presidents' strongest legislative strategies and highly common in modern American politics (Moe and Howell 1999a, 1999b). My model shows that the size of the gridlock regions is affected by the position of the status quo, which implies that the position of the effective pivotal legislator is determined by the position of the status quo through the electoral process. Considering that the position of the pivotal legislator is crucial in determining the position of the policy outcome, extreme presidents may use their unilateral power to move the status quo into the opportunity region before elections in order for the elected pivotal legislator to be much closer to their ideal points. This might be a venue for future research in the context of the role of the electorate in inter-branch politics.¹⁷

It has been widely perceived that the ideological polarization of voters is likely to expand the gridlock region (Binder 2003). The mass polarization causes a wide opinion gap among voters, and therefore a new policy that replaces the status quo is unlikely to pass the legislative process (see Esteban and Ray 2011; Kahan 2010). I do not deny that the ideological polarization of voters can cause the expansion of the gridlock region. This expansion, which is directly caused by mass polarization, can be measured by the expansion of the counterfactual baseline gridlock region $[v_l, v_r]$. My model shows that there is an additional expansion caused by sophisticated voting that cannot be measured by the counterfactual baseline gridlock region. The model also shows that the causality between the expansion of

¹⁷There are a few studies that focus on the role of the electorate in analyzing separation of powers (e.g., Groseclose and McCarty 2001; Nzelibe and Stephenson 2010; Stephenson and Nzelibe 2010; Howell and Wonton 2015). Most of these models focus on the role of the separation of powers in mitigating the asymmetric information about the true preferences or competence level of presidents that exists between politicians and the voters. In contrast, my model focuses on presidents' possible strategic indirect manipulations of the electoral results even in the absence of such an informational asymmetry.



Note: Each dot represents a different voter.

Figure 2.2: Ambiguous causality between mass polarization and sophisticated-voting-induced expansion of the gridlock region ($n = 15$).

the gridlock region by sophisticated voting and mass polarization is ambiguous.

To understand the ambiguous causality, consider the case where the gap between two polarized groups affects the size of the gridlock region, as shown in Figure 2.2. In this case, each pivotal district belongs to a different polarized group. In this setting, as the gap between two polarized groups becomes wider, each pivotal district’s ideal point gets more extreme. As a result, the counterfactual baseline gridlock region expands as shown in Figure 2.2. However, the effect on the additional expansion of the gridlock region that sophisticated voting causes is not clear. As shown in Figure 2.2, we see that the opportunity region on both sides expands, which suggests that it would be more probable to have the status quo in the opportunity region. However, note that the wording of “neither too moderate nor too extreme” in the model is used to indicate to the relative position between the status quo and both pivotal districts’ ideal points. Thus, any status quo in the opportunity region must indeed be getting more extreme in an absolute sense when there is a sizable distance between the two groups. If such an extreme status quo is rare in the real world, the overall effect is ambiguous.

It is noteworthy that how much the gridlock expands by sophisticated voting is heavily affected by the density of the distribution of voters. Specifically, I conjecture that high density tends to mitigate the degree of expansion of the gridlock region caused by sophisticated voting. To see why, consider the following simple example. Suppose $s_0 > 0$ and all voters

whose ideal points are less than v_r cast a congruous vote. If the density is not so high that $v_{r+1} \geq \frac{2s_0+3v_r}{5}$, then the position of the effective pivotal voter is $\frac{2s_0+3v_r}{5}$. However, if the density is so high that $v_{r+1} < \frac{2s_0+3v_r}{5}$, then the effective pivotal legislator's position can be located at $\frac{2s_0+3v_r}{5}$ only if both voter r and voter $r + 1$ choose $\frac{2s_0+3v_r}{5}$ at the same time, otherwise the pivotal legislator's position will be located in the interval $[v_{r+1}, \frac{2s_0+3v_r}{5})$. This means that coordination between r and $r + 1$ is required to attain the same gridlock as in the low density setting. As more voters' ideal points are located in the interval $(v_r, \frac{2s_0+3v_r}{5})$, the coordination would be more difficult.

One interesting case of voter distribution is the following: the existence of two polarized groups where the supermajority of voters belongs to one group, in which the counterfactual gridlock region is in the supermajority group. The model then provides the following theoretical prediction: the gridlock region is more likely to expand toward the minority group. It is more likely that the status quo is located between the two groups, assuming that both groups are sufficiently biased to each extreme. In particular, this tendency would be reinforced as the gap between the groups becomes wider. As a result, the new policy outcome is more likely to be pulled toward the supermajority group, which benefits solely the supermajority group at the expense of the minority.

However, this case would be highly unusual in the real world. Rather, the more probable case is where there exist two groups where the majority group possess only one pivotal district. In contrast to the previous case, the power of the minority group substantially increases. In particular, we may imagine the extreme case where $\{v_1, \dots, v_{r-1}\}$ is the majority group while $\{v_r, v_{r+1}, \dots, v_n\}$ is the minority group. In this case, we see that the counterfactual baseline gridlock region $[v_r, v_l]$ effectively prevents passing any unfavorable policy outcome for all voters in the minority group. In this regard, we may interpret this counterfactual baseline gridlock region as the the bulwark against the tyranny of the majority (see Ethridge 2010). Moreover, when the status quo is in the interval $(v_r, (1 + \sqrt{5})v_r]$, the

consequent expanded gridlock region by sophisticated voting favors the minority in two ways. First, the policy outcome is much closer to the ideal points of all members of the minority group than the one that would have been under congruous voting. Second, the expanded gridlock region itself means that the range of policy that can be vetoed by the minority group increased.

In fact, this reinforcement of minority power appears in the absence of mass polarization. When the status quo is in the opportunity region, the new policy outcome *takes* out of the utilities of most minority voters whose ideal points are more extreme than the status quo. However, the interaction between supermajoritarianism and elections, even if we cannot tell whether or not it is intentionally designed, *gives* the minority the reinforced power in return by expanding the gridlock region toward the minority voters. This is a very interesting *give and take* feature of politics that the model unearths. Furthermore, the model shows that it is necessary to consider the effects from the interactions between institutional rules and the role of electorate when we attempt to measure the power of the minority in legislative politics.

Politicians are actors playing dysfunctional politics on the political stage. However, in representative democracy, we should be well aware of the fact that the actors on the stage have been selected by those off of the stage, i.e., voters.

2.6 Appendix

Proof of Lemma 2

Suppose \mathbf{c} is the Nash equilibrium legislature. Without loss of generality, assume that $s_0 > 0$. Suppose that $c_i < v_i$. We wish to show that $c_i < v_i$ is strictly dominated by $c'_i = v_i$, that is, $u_i(c'_i, v_{-i}) > u_i(c_i, v_{-i})$ for all i . If $v_i \geq s_0$, then by Lemma 3, the optimal choice for i is $c_i = v_i$. If $v_i < s_0$, then there are three cases to be considered: i) $c_i = c^r$, ii) $c_i > c^r$, and

iii) $c_i < c^r$.

i) $c_i = c^r$.

First, suppose that only one district chooses c^r . If $c^r < v_i \leq c^{r+1}$, then $c'_i = v_i \leq c^{r+1}$, which implies that district i is still pivotal. Since $2c_i - s_0 < 2c'_i - s_0 = 2v_i - s_0 < v_i$, we see that $-(v_i - (c_i - s_0))^2 < -(v_i - (c'_i - s_0))^2$. Also, $-(v_i - c_i)^2 < -(v_i - c'_i)^2 = 0$. Hence, $u_i(c'_i, c_{-i}) > u_i(c_i, c_{-i})$ as required. If $c^r < c^{r+1} < v_i$, then choosing c'_i leads c^{r+1} to being pivotal. Since $2c_i - s_0 < 2c^{r+1} - s_0 < v_i$ and $-(v_i - c_i)^2 < -(v_i - c'_i)^2 = 0$, we see that $u_i(c'_i, c_{-i}) > u_i(c_i, c_{-i})$ as required.

Second, suppose that more than one district choose c^r . Choosing c'_i instead of c_i does not change the equilibrium policy outcome since c^r is still pivotal. However, $-(v_i - c'_i)^2$ will be 0, which implies that $u_i(c'_i, c_{-i}) > u_i(c_i, c_{-i})$ as required.

ii) $c_i > c^r$

Choosing c'_i instead of c_i does not change the pivotal legislator c^r . Hence, the equilibrium policy outcome is the same. However, choosing c'_i minimizes the disutility from the incongruence term, that is, $-(v_i - c'_i)^2 = 0$. Therefore, $u_i(c'_i, c_{-i}) > u_i(c_i, c_{-i})$ as required.

iii) $c_i < c^r$.

If $c_i < v_i \leq c^r$, choosing c'_i does not change the equilibrium policy outcome but minimizes the disutility from the incongruence term, that is, $-(v_i - c'_i)^2 = 0$. Hence, $u_i(c'_i, c_{-i}) > u_i(c_i, c_{-i})$ as required. Consider the case where $c_i < c^r < v_i$. If i chooses c'_i then c'_i is the new pivotal legislator. Since $2c^r - s_0 < 2c'_i - s_0 < v_i$ and $-(v_i - c_i)^2 < -(v_i - c'_i)^2 = 0$, $u_i(c'_i, c_{-i}) > u_i(c_i, c_{-i})$ as required.

In conclusion, $c_i < v_i$ does not constitute the Nash equilibrium legislature when $s_0 > 0$. Similar logic can be applied to show that $c_i > v_i$ does not constitute the Nash equilibrium legislature when $s_0 < 0$. \square

Proof of Lemma 6

Without loss of generality, suppose $s_0 > v_r$. Recall that voter i 's utility function is

$$u_i(c_i, c_{-i}) = \begin{cases} -(v_i - 2c^r + s_0)^2 - (v_i - c_i)^2 & \text{if } c_i \neq c^r, \\ -(v_i - 2c_i + s_0)^2 - (v_i - c_i)^2 & \text{if } c_i = c^r. \end{cases}$$

- (a) Let \mathbf{c} be a Nash equilibrium legislature. Note that $c_m \geq 0$ by Lemma 3. Hence all equilibrium policy outcomes must be greater than or equal to 0. In addition, by Lemma 3, we know that $c_i \geq v_i$ for all i . Let i be any voter such that $v_i \leq 0$. Suppose $c_i > v_i$ and $c_i = c^r$. Let $c'_i = v_i$. If voter i is still the effective pivotal legislator when she chooses c'_i , then it is obvious that $u_i(c'_i, c_{-i}) > u_i(c_i, c_{-i})$ since the new equilibrium policy outcome is closer to v_i than the old one and voter i minimizes the loss from the incongruence term.

If voter i is not the effective pivotal legislator anymore when she chooses c'_i , then it must be that the new effective pivotal legislator's ideal point is less than c_i . Let $c^{r'}$ denote the new effective pivotal legislator. If $v_i \geq c^m$, then the median legislator remains the same. So, we see that $\max\{2c^r - s_0, c^m\} \geq \max\{2c^{r'} - s_0, c^m\}$, which means that the new equilibrium policy is less than or equal to the old one and voter i can minimize the loss from the incongruence term. Hence, $u_i(c'_i, c_{-i}) > u_i(c_i, c_{-i})$. If $c_i < c^m$, then the median legislator is replaced by the new one such that $c^{m'} < c^m$. Hence, $\max\{2c^r - s_0, c^m\} > \max\{2c^{r'} - s_0, c^{m'}\}$, which means $u_i(c'_i, c_{-i}) > u_i(c_i, c_{-i})$.

Now, suppose $c_i > v_i$ and $c_i \neq c^r$. If $c_i < c^r$, then it is obvious that $v_i < c^r$. In this case, the only way to be the new effective pivotal legislator is to elect an extreme legislator whose ideal point is greater than c^r . However, this yields the new equilibrium policy outcome greater than or equal to the old equilibrium policy outcome. So, voter i cannot gain additional benefits from the new equilibrium policy outcome while she

incurs the new additional loss from the incongruence term by doing so. Hence, voter i never attempt to be the new effective pivotal legislator. If voter i chooses c'_i then the new equilibrium outcome remains the same if $c_i \geq c^m$. If $c_i < c^m$, then $c^{m'} < c^m$ and therefore $\max\{2c^r - s_0, c^m\} > \max\{2c^{r'} - s_0, c^{m'}\}$. In both cases, $u_i(c'_i, c_{-i}) > u_i(c_i, c_{-i})$. Consider the case where $c_i > c^r$. If voter i chooses c'_i , then it might be either $c'_i = c^{r'}$ or $c'_i < c^{r'}$. However, $c'_i = c^{r'}$ is possible only when there exist at least $r - 1$ legislators whose ideal points are less than 0, which means that at least $r - 1 - m > 0$ conservative voters must elect a legislator whose ideal point is less than theirs. Lemma 3 states it is impossible in any Nash equilibrium legislature. So, the remaining case is $c'_i < c^r$. If $c_i < c^m$ then $c'_i < c^m$ therefore $c^m = c^{m'}$. Also, $c^r = c^{r'}$. Hence, the equilibrium policy outcome remains the same. Hence, c'_i is optimal for voter i since she can minimize the loss from the incongruence term while have the same equilibrium policy outcome.

If $c_i \geq c^m$, then $c^m = c^{m'}$ only when $c'_i > c^m$. If so, the equilibrium outcome remains the same but she can minimize the loss from the incongruence term. So, $u_i(c'_i, c_{-i}) > u_i(c_i, c_{-i})$. Finally, if $c_i > c^m$ and $c'_i < c^m$, then $c^{m'} < c^m$. Then, $\max\{2c^r - s_0, c^m\} \geq \max\{2c^{r'} - s_0, c^{m'}\}$. Hence, $u_i(c'_i, c_{-i}) > u_i(c_i, c_{-i})$. In conclusion, we see that $c'_i = v_i$ is the unique strict dominant strategy. \square

(b) It follows from Lemma 2. \square

(c) Let \mathbf{c} be a Nash equilibrium legislature. Lemma 3 states that, for all i , $c_i \geq v_i$. Part (b) states that $c_i = v_i$ if $v_i \geq s_0 > 0$. So, we wish to show the upper bound of c_i for all i such that $0 < v_i < s_0$. Suppose $c_i = c^r$ and $0 < v_i < s_0$. Suppose $c_i = v_i$. Let $c'_i > v_i$. If $c_i = c^r$, voter i has an incentive to elect an extreme legislator as long as $u_i(c'_i, c_{-i}) \geq u_i(c_i, c_{-i})$. This condition holds only if $c'_i \leq \frac{4s_0 + v_i}{5}$. Also, voter i can maximize her utility by electing an extreme legislator such that $c'_i = \frac{2s_0 + 3v_i}{5} < \frac{4s_0 + v_i}{5}$. If $c^{r+1} \geq \frac{2s_0 + 3v_i}{5}$, then voter i can maximize her utility by choosing $c'_i = \frac{2s_0 + 3v_i}{5}$ since she

still remains as the effective pivotal legislator. If $c^{r+1} < \frac{2s_0+3v_i}{5}$, $c'_i = c^{r+1}$ improves her utility since $c'_i \leq \frac{4s_0+v_i}{5}$. So, for all i such that $c_i = c^r$, the upper bound of c_i is $\frac{2s_0+3v_i}{5}$. Now, suppose that $c_i < c^r$ and $c^r \geq \frac{s_0+v_i}{2}$. Then, there is no incentive for voter i to be the new equilibrium pivotal legislator since the new equilibrium policy outcome will be farther from her ideal point. Hence, the optimal choice for voter i is to elect $c_i = v_i$ since she can minimize her loss from the incongruence term while the equilibrium policy outcome remains the same.

Suppose instead that $c_i < c^r$ and $c^r < \frac{s_0+v_i}{2}$. Note that voters attempt to be the new effective pivotal legislator only when the utility from doing so is better than the utility from not doing it. Hence, we assume here that being pivotal is better for voter i . It is obvious that i will not choose $c_i > \frac{s_0+v_i}{2}$ even if there does not exist c^{r+1} between c^r and $\frac{s_0+v_i}{2}$. Since $c_i > \frac{s_0+v_i}{2}$, the equilibrium policy outcome will be greater than v_i . Let x denote this equilibrium policy outcome. However, if voter i chooses $c'_i < \frac{s_0+v_i}{2}$ that produces the equilibrium policy outcome denoted by x' such that $x' < v_i$ and $|v_i - x'| = |x - v_i|$, it is clear that $u_i(c'_i, c_{-i}) > u_i(c_i, c_{-i})$. Hence, it must be that $c_i \leq \frac{s_0+v_i}{2}$. One might suspect that voter i may choose $c_i > \frac{s_0+v_i}{2}$ when $2\left(\frac{s_0+v_i}{2}\right) - s_0 \leq c^m$. This case happens only when $v_i \leq c^m$. Since $c^r < \frac{s_0+v_i}{2}$, it follows then that $2c^r - s_0 \leq c^m$ which implies that the equilibrium policy outcome is c^m . So, voter i 's optimal choice is $c_i = v_i$.

If $c^r \leq \frac{s_0+v_i}{2}$, then voter i will choose $\min\{\frac{2s_0+3v_i}{5}, c^{r+1}\}$ to maximize her utility. If $c^r < \frac{2s_0+3v_i}{5}$, then optimal choice for voter i is to elect an extreme legislator whose ideal point is as close to c^r as possible since u_i increases as the gap between her legislator and $\frac{2s_0+3v_i}{5}$ decreases. Hence, this case does not constitute the Nash equilibrium legislature. In conclusion, we see that the upper bound of c_i for all i is $\frac{2s_0+3v_i}{5}$ and the lower bound is v_i in the Nash equilibrium legislature. \square

(d) Let \mathbf{c} be a Nash equilibrium legislature. Let i be a voter such that $c_i \neq v_i$. Suppose that

$c_i \neq c^r$. By Lemma 3, it must be that $c_i > v_i$. It is either $v_i < c_i < c^r$, or $c^r < v_i \leq c_i$, or $v_i < c^r < c_i$. If $c_i < c^r$, then $c_i = v_i$ is the optimal choice for i since she can improve her utility by minimizing the loss from the incongruence term while facing the same equilibrium outcome. If $c^r < v_i \leq c_i$, then $c_i = v_i$ is the optimal choice by the same reason. Finally, if $v_i < c^r < c_i$, she can get better outcome by choosing $c_i = c^r$ since the equilibrium outcome remains the same while she can minimize the loss from the incongruence term. Then i is pivotal, a contradiction. This completes the proof. \square

- (e) Let \mathbf{c} be a Nash equilibrium legislature. Suppose $c_i = c^r$ for all i . Then \mathbf{c} is an order preserving Nash equilibrium legislature. Since $v_i \neq v_j$ for all $i \neq j$ by assumption, voter r can improve her utility by choosing $\min\{\frac{3s_0+2v_i}{5}, c^{r+1}\}$. \square

Claim: the converse of Lemma 6 (d) is not true.

Suppose all voters whose ideal points are not v_r or v_{r+1} cast a congruous vote but voter r 's choice deviates her ideal point to maximizes her payoff (i.e., $c_r = \frac{2s_0+3v_r}{5}$). Assume that $v_{r+1} < c_r = \frac{2s_0+3v_r}{5} < v_{r+2}$. If voter $r+1$ elects $c_{r+1} = c_r$, then both representatives from district r and $r+1$ are the effective pivotal legislator and the legislative outcome will be x . If, instead, voter $r+1$ casts a congruous votes (i.e., c'_{r+1}), her representative will be the single effective pivotal legislator and the legislative outcome will be x' . Note that the benefits voter $r+1$ obtains via deviating from c_{r+1} to c'_{r+1} is $|c_r - v_{r+1}|$ while her loss is $|x - x'|$. Since her loss is clearly larger than the benefits (see (a) in Figure 8), c_{r+1} strictly dominates c'_{r+1} . Of course, voter $r+1$ would not elect a representative whose ideal point is greater than c_r since a representative from district r will be the single effective pivotal legislator and therefore the legislative outcome will remain the same at x while the distance between voter $r+1$ and her representative increases. Therefore, the optimal choice for voter $r+1$ is $c_{r+1} = c_r$. Then, there are two legislators who are effectively pivotal and both legislators are elected via incongruous voting.

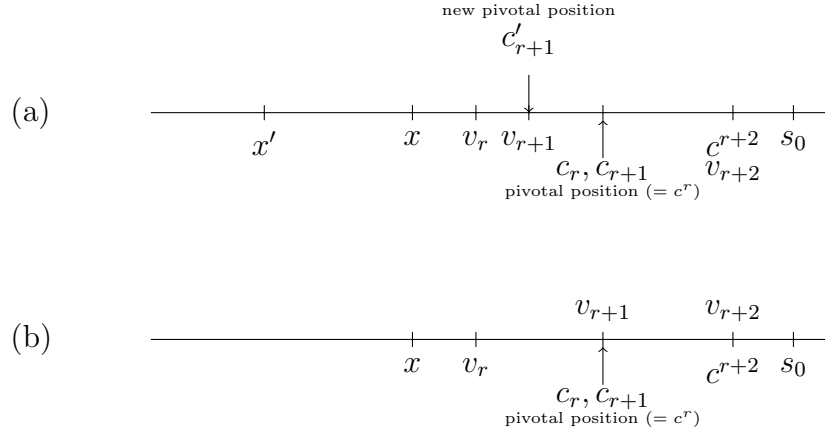


Figure 2.3: Two examples of multiple legislators at the effective pivot.

If $v_{r+1} = c_r = \frac{2s_0+3v_r}{5} < v_{r+2}$, the only way for voter $r + 1$ to change the legislative outcome is to elect a representative whose ideal point is less than c_r . However, Lemma 2 states that this is impossible. Hence, the optimal choice for voter $r + 1$ is congruous voting as depicted in (b) in Figure 8. In this case, there are two legislators at the effective pivot but only one legislator (i.e., a representative from district r) is elected via incongruous voting.

□

Chapter 3. Presidential Unilateral Action as a Tool of Voter Mobilization

3.1 Introduction

Since the work by Neustadt (1960), presidential power has been understood as the power to persuade the other government branches in the checks and balances system. However, we have seen the rise of the presidency with “power without persuasion” (Mayer 2001; Howell 2003). The ambiguity of the Constitution and the rise of the administrative state together lead to the rise of presidents relying on unilateral power (Moe and Howell 1999a, 1999b). Many scholars now argue that the checks and balances system is imperiled with the rise of the “imperial presidency” that exceeds its constitutional limits (Schlesinger 1973; Rudalevige 2005; Savage 2007).

Members of Congress lambaste the abuse of executive power. However, effective congressional action to overturn the president’s unilateral initiative rarely occurs (Rudalevige 2005; Moe and Howell 1999a, 1999b). In fact, Congress is afflicted with several inherent problems that hinder it from constraining the unilateral presidency: information asymmetries, collective action problems, transaction costs, and gridlock caused by the supermajoritarian legislative process (Krehbiel 1998; Moe and Howell 1999a, 1999b; Epstein and O’Halloran 1999; Levinson 2005). Courts also ineffectively constrain the unilateral presidency. Howell

(2003) found that courts rarely rule that presidents exceed the extent that Congress allows. Moreover, courts are also afflicted with several inherent problems that disrupt proper oversight over the executive: information asymmetries and collective action problems (Komesar 1994; Calabresi 2002; Segal and Spaeth 2002; Fallon 2005; Sunstein et al. 2006; Posner and Vermeule 2007).

Given this weak checks and balances system, it is natural to expect that presidents can invoke unilateral power whenever they desire certain outcomes. However, they do not always rely on unilateral power. They sometimes decide not to unilaterally act, or they choose an unsatisfactory compromise. One example is President Clinton's "don't ask, don't tell" (DADT) policy. He could have unilaterally acted to end the military policy that excludes homosexuals from service and was willing to end this policy. However, he was reluctant to use unilateral power to take an aggressive step and instead introduced a compromise that prohibits military personnel from discriminating against homosexual military members, while still excluding homosexuals from service. In another example, President Obama did not issue an executive order to establish the Deferred Action for Childhood Arrivals (DACA) policy until 2012, although he could have done so much earlier.

What deters the president from initiating unilateral action? To investigate this question, Posner and Vermeule (2010) focused on the role of "public constraints," which can *independently* constrain the unilateral presidency even if there are no effective checks and balances from other branches (see also Baum 2004; Kriner and Schickler 2016). The problem is that how public opinion is constructed and constrains the unilateral presidency is still a "mysterious process" (Posner and Vermeule 2010, 77).

Recently, several scholars have begun to investigate this, but the mystery appeared to become more puzzling, as they found seemingly contradictory results. Reeves and Rogowski (2016, 2018) present empirical evidence that voters' constitutional concerns automatically activate their negative evaluations of presidential unilateral action, which suggests that pres-

idents might suffer at the ballot box if they implement unilateral action. However, Christenson and Kriner (2017a) showed that the constraints from “constitutional qualms”¹⁸ are not automatic but are subject to voters’ partisanship, which suggests that presidents can invoke their unilateral power if there are sufficient voters who would support the policy implemented by unilateral action.

As Christenson and Kriner (2017a) correctly indicated, these two results are different partial portraits of the whole picture. As such, it is imperative to have a theory that presents the whole picture of a president’s reasoning on unilateral action. The purpose of this paper is to theorize how public opinion constrains the unilateral presidency in the absence of checks and balances from other branches. More specifically, I focus on elections as institutional conduits in which public opinion can force the president to commit to the principle of the separation of powers even when checks and balances from other branches are very weak or practically absent. Understanding such a role of elections enables us not only to identify when the public opinion successfully constrains the president’s unilateral action but also to recognize the strategy of Congress that attempts to indirectly constrain the president by constructing a political environment in which presidential unilateral action is deterred, instead of relying on the weak institutional channel of checks and balances.

There are many ways presidents can act unilaterally.¹⁹ However, not all presidential unilateral actions lead voters to find them controversial in terms of constitutionality. For example, President Obama’s executive order to change the logo of the Peace Corps in 2014 did not cause constitutional controversy among voters; furthermore, most voters were not even aware of the executive order. Hence, the necessary conditions for the president’s uni-

¹⁸I use “constitutional qualms” to represent voters’ propensity to disapprove of presidents’ unilateral lawmaking bypassing the legislature. The reason behind the use of this term is the Constitution that stipulates that lawmaking power is bestowed to the legislature. Therefore, we see that voters’ negative view on unilateral presidency can be traced back to their uneasiness with the violation of the constitutional principle.

¹⁹For example, executive orders, proclamations, administrative and national security directives, military orders, pardons, recess appointments, signing statements, and executive agreements (see Cooper 2002).

lateral move to be constrained by public opinion are that 1) the constitutional grounds of the unilateral action are disputable, and 2) that the unilateral action is highly visible to voters due to its controversial constitutionality. The focus of my model is on the instances of unilateral actions that satisfy these necessary conditions.²⁰

In addition to unilateral action, the president may appeal to the public using non-unilateral policymaking tools, such as public speeches or legislative proposals. Although when the president prefers unilateral action over such non-unilateral policymaking tools is beyond the scope of this paper, I note that these non-unilateral policymaking tools provide smaller expressive benefits of voting than unilateral action. Non-unilateral policymaking tools do not incur the cost from activating voters' and the president's constitutional qualms. However, this low cost weakens the credibility of the president's message that he or she cares about voters because voters know that the president can establish a policy by unilateral action. Thus, if the president abstains from unilateral action to establish a policy, voters can infer that the policy is not important enough for the president to burden the cost. For example, President Obama's reluctance to initiate unilateral action on immigration policy was interpreted by Hispanic voters as his lack of attention to them (Schier 2011).

Although there are several formal models that investigate the effects of elections on the president's strategic behavior (e.g., Persson et al. 1997; Groseclose and McCarty 2001; Stephenson and Nzelibe 2010; Fox and Stephenson 2011; Judd 2017; Howell and Wolton 2018), these models focus on the informational asymmetries between the president and a single representative voter and the role of the separation of powers in dispelling voters' uncertainty about the president.²¹ Therefore, public opinion is not a constraint but a conse-

²⁰Although which instances of unilateral actions will satisfy these necessary conditions are beyond the scope of this paper, my model below suggests that most instances of unilateral actions will meet these conditions when the opponents against the unilateral action exist in terms of either policy grounds or constitutional grounds or both, and they made its constitutional problems sufficiently visible to voters in an attempt to frustrate the unilateral action.

²¹Informational asymmetries come from the assumption that voters do not know the president's preferences or the state of the world. In contrast, I assume in my model that voters know the president's true preferences.

quence that the separation of powers provides by informing the representative voter, who is pivotal in deciding the electoral outcome, of whether the president is desirable. Furthermore, the assumption of a single pivotal representative voter in these models does not show the mobilizing effect of unilateral action due to the simple fact that the representative voter cannot abstain. In my model, however, unilateral action is considered the president's direct attempt to construct a pivotal representative voter who supports the president by mobilizing his or her supporters. For this purpose, I focus on setting a heterogeneous electorate in the absence of a checks and balances system, which allows us to consider when presidential unilateral action can successfully mobilize supporters to ensure re-election. As I will show below, whether such mobilizations will realize the president's plan depends on the given public opinion. This approach enables us to examine not only the direct constraining effects of public opinion on the president's unilateral action but also possible benign effects of unilateral action on representative democracy that I will discuss below.

The question is then how the president can make his or her supporters pivotal by initiating unilateral action. I apply a model of expressive benefits of voting (see Riker and Ordeshook 1968) in a large election to answer this question, which is the key departure of my theory from the previous literature. The basic intuition is that presidential unilateral action increases some supporters' expressive benefits of voting, which, in turn, leads them to be more likely to turn out on election day. However, presidential unilateral action also increases the cost of voting by activating voters' concerns about constitutional qualms, which leads voters to be less likely to turn out. Based on the net of mobilizing and demobilizing effects of unilateral action, the president decides whether to unilaterally act. To my knowledge, my

In addition, there is no asymmetric information regarding the state of the world. However, I show that voters still can constrain presidential power. I admit that this assumption might implicitly exclude a foreign or military policy dimension from my analysis because presidents have a firm authority to unilaterally act in this type of policy dimension due to their informational advantages (see Canes-Wrone et al. 2008; Howell et al. 2013). In this sense, my model implicitly follows the "two presidencies" thesis (see Dahl 1950; Wildavsky 1966; Canes-Wrone 2008).

model is the first attempt to investigate the supply side of the expressive benefits of voting in the context of presidential unilateral action.

Regarding the mobilizing effects, the president's unilateral action can be a useful tool for appealing to some voters by increasing voters' expressive benefits of voting.²² In a large election, voters are likely to vote according to their expressive benefits rather than their policy preferences because the probability that everyone's single vote will be pivotal in determining the electoral outcome is very small (Riker and Ordeshook 1968; Tullock 1971; Brennan and Buchanan 1984; Scheussler 2000, Feddersen and Sandroni 2006a, 2006b; Fowler 2006; Feddersen et al. 2009). In particular, Fowler (2006) and Feddersen et al. (2009) found that individuals vote for a candidate who seems to be doing the right thing in their view, even if they do not expect their votes to be a pivotal. In line with this approach, I propose that voters enjoy expressive benefits of voting for a candidate who advocates and establishes the right policy in their view. Based on this demand side of the expressive benefits of voting, I examine the supply side of the expressive benefits of voting by positing that the president can at least send a message to some voters that the president is doing the right thing by establishing a policy through unilateral power, which increases the expressive benefits of voting for a certain subset of voters.

The mobilizing effects primarily derive from the extra expressive benefits of voting of the subset of the supporters targeted by the president's unilateral action rather than those of all supporters. The partisan expressive benefits of all supporters from voting for their co-partisan candidate are already reflected in their initial level of expressive benefits of voting in my model. In other words, Republican voters receive partisan expressive benefits of voting if they vote for an incumbent Republican president regardless of whether the president initiates unilateral action. Hence, the initial partisan expressive benefits can be interpreted

²²The president can easily appeal to the audience to accomplish what he or she desires as a primary agenda setter in a nation (Canes-Wrone 2001a, 2001b; Kernell 2006).

as voters' partisan loyalty. It is well known that the effect of partisanship on voters' final vote is dominant and stable (Campbell et al. 1960; Bartels 2000; Green et al. 2002). In addition to this partisan loyalty, presidential unilateral action on a certain policy provides extra expressive benefits of voting to those supporters who deeply care about the policy. Such a presidential strategy of targeting particular constituencies is consistent with previous studies (Bueno de Mesquita et al. 2002; Rottinghaus and Warber 2015; Kriner and Reeves 2015, 2016). Therefore, the president may use unilateral power to mobilize potentially pivotal supporters rather than to steal the opposing voters to increase the odds of electoral victory.

The demobilizing effects of presidential unilateral action derive from voters' constitutional qualms (Reeves and Rogowski 2016, 2018) that lead voters to be reluctant to vote for the president who seemingly violates the principle of the separation of powers. In contrast to the mobilizing effects, the demobilizing effects occur across all supporters.

In summary, the president faces a trade-off regarding the exercise of unilateral action. Establishing a policy will be helpful for re-election in its own right but the instrument by which the policy is established (i.e., unilateral action) is costly because it activates voters' constitutional qualms. Hence, given a policy, the president will decide whether to act unilaterally to establish the policy or not according to the current magnitude of voters' constitutional qualms. As such, my model shows that the magnitude of voters' constitutional qualms is the primary variable that determines whether the president will seek a particular policy through unilateral action given the size of the group that the policy targets and the importance of the policy to the target group.

In addition, my model contributes to the literature by showing that observationally equivalent presidential decisions on unilateral actions originate from different motivations. On one hand, the president may act unilaterally to establish his or her preferred policy, although the unilateral action is not crucial to ensure electoral victory, which I call *plebiscitary* motiva-

tion. On the other hand, the president may take unilateral action because he or she cannot win the election without it, which I call *particularistic* motivation. My model shows that the motivation of the president's unilateral action varies according to whether the existing political landscape is *friendly* or *hostile* to the president's re-election prospects. Plebiscitary motivation arises in the friendly political landscape while the hostile political landscape yields particularistic motivation. Without a theory, it is hard to recognize these qualitatively different natures of motivations because the behavioral results in both cases are observationally equivalent: the president's engagement in unilateral action.

These results call for a more careful interpretation of unilateral action. The foremost concerns about presidential unilateral action are that it lacks constitutional legitimacy. However, in the case of the plebiscitary motivation that can occur in a friendly political landscape, it is possible to consider that the unilateral action acquires a different type of legitimacy through popular support expressed as the electoral victory after unilateral action. Considering that the primary reason the president acts unilaterally is to establish the president's preferred policy, since the president could have won the election without unilateral action, the president in this case appears to be what Weber calls the plebiscitary leader who "will act according to his own judgment as long as he can successfully claim [the voters'] confidence" (Mommsen 1984, 184). Moreover, it is possible to argue that such a president's freedom in policymaking allows the president to exercise unilateral powers to establish a policy that is unpopular among voters but appropriate according to the president's judgment (see Canes-Wrone and Shotts 2004). I point out that such legitimacy from popular support can compensate for the lack of constitutional legitimacy, which can be solid grounds for the affirmative view on the president's unilateral policymaking power (e.g., see Howell and Moe 2016).

In the case of the particularistic motivation that the president acts unilaterally to avoid electoral defeat, which can occur in a hostile political landscape, the president appears to be the particularistic leader (see Kriner and Reeves 2015) in the sense that the president

unilaterally acts to establish a policy that is favored by only a particular subset of the supporters to avoid the anticipated electoral defeat. On its face, this particularistic unilateral action has normatively negative implications because, in addition to the lack of constitutionality, this particularistic motivation may lead the president to establish a policy through unilateral action, although the president does not believe that the policy is the right one. However, at the same time, this particularistic motivation can be a remedy for the tyranny of the majority in the sense that a minority group's preferred policy can be implemented by unilateral action if the minority group can play the role of pivotal voters.

Overall, my model points out possible grounds for affirmative normative views on presidential unilateral action that have been neglected in previous studies that have analyzed unilateral action in isolation from electoral constraints. The president's decision regarding whether to act unilaterally depends on popular support because popular support of voters through an election provides an alternative legitimacy for the president's unilateral action that may compensate for the lack of constitutional legitimacy. Whether the president's unilateral action acquires ex-post approval by popular support depends on the magnitude of voters' constitutional qualms. If voters' weak constitutional qualms represent the voters' despair toward the Constitution that causes a political stalemate and dysfunction in the policymaking process,²³ then it is possible to interpret that unilateral action reflects voters' choices to fix a problem over to protect the Constitution. I admit that whether unilateral action provides benign or malign consequences on our democracy depends on the type of president and whether the claim of the target group is seeking important democratic values or narrow special interests. However, what I try to emphasize here is that such inconclusiveness implies that unilateral action does not necessarily provide a harmful outcome to our democracy, which shows that it is unfair to normatively criticize unilateral action solely

²³Howell and Moe (2016) claim that the constitution is the predominant culprit that causes political dysfunction and proposes to reform the constitution by bringing the president to the center of the policymaking process.

based on constitutional grounds. I hope my model ignites a lively debate on the multifaceted normative implications of unilateral action for our democracy.

3.2 The Model

There are two candidates, L and R . Without loss of generality, I assume that the incumbent president is L . Let $x \in \{x_R, x_L\}$ be a policy that L can choose, where x_R denotes R 's preferred policy and x_L denotes L 's preferred policy. I assume that x_R is the status quo. At the beginning of the first period, L must decide whether to act unilaterally to set a policy x_L . After L 's decision, the presidential election is held based on the plurality rule.²⁴ After the election, the second period begins with the elected or re-elected president. The new president can move unilaterally to replace a status quo x_R with x_L if x_R is the policy outcome in the first period, or the president can unilaterally revoke x_L to the original status quo x_R if x_L is the policy outcome in the first period. There is no election in the second period, and the game ends.

Following the conventional understanding in the literature, I propose that the president wants to leave a policy legacy. The president can enjoy any policy legacy only if the policy established by unilateral action survives in the second period. Let $\lambda \in \mathbb{R}_{++}$ denote the president's benefits from leaving a policy legacy. Note that the policy established by L 's unilateral action is vulnerable to the risk of the future president's revocation if R wins the election. There are two ways for L to leave a policy legacy. On one hand, L receives λ if L unilaterally establishes x_L and L wins the election in the upcoming election. On the other hand, if L does not unilaterally act in the first period and L wins the election, then L can act unilaterally in the second period to establish x_L and L receives $\delta\lambda$, where $\delta \in (0, 1)$ denotes the president's discount factor.

²⁴For simplicity, I assume a simple plurality election rule without any role of the electoral college.

Let $Q_P \in \mathbb{R}_{++}$ denote the cost incurred by unilateral action. One intuition behind this cost is that the president wants to be remembered as a skillful leader who was able to make a policy through the congressional legislation process as stipulated in the Constitution. There are several anecdotes showing that the president considers the reputational cost of a unilateral action when the president makes a decision. For example, President Obama’s comments clearly illustrate that presidents are not completely free from constitutional anxiety originating from executive unilateral actions. Speaking of his inaction on immigration, he said: “The idea of doing things on my own is very tempting. [...] But that’s not how our system works. That’s not how our democracy functions. That’s not how our Constitution is written” (The White House 2011).

This cost may reflect that the president does not want to undermine constitutional principles by unilateral action.²⁵ For example, President Jefferson hesitated to purchase French Louisiana despite the necessity of an urgent decision because he did not believe that the Constitution confers the necessary power to do it. One of Jefferson’s letters shows the constitutional trouble he found himself in: “Our peculiar security is in the possession of a written Constitution. Let us not make it a blank paper by construction [...] I confess, then, I think it important, in the present case, to set an example against broad construction by appealing for new power to the people.”²⁶

The president is also office-motivated. When the president wins the election, the president receives a payoff $W \in \mathbb{R}_{++}$, whereas the president receives nothing if the president loses the election. Finally, if $\lambda - Q_P \leq 0$, then the president never unilaterally acts except

²⁵If we consider the constitution a coordination device of society, then the presidents’ constitutional qualms can be interpreted as their concerns of miscoordination that can be caused by presidents’ violation of constitutional principles. The reason that the constitution can play a coordination role is that each member of a society expects the other members to abide by constitutional principles. However, if presidents who are the most visible and influential figures in politics move unilaterally, this violation of constitutional principles leads members of society to expect that constitutional principles are not upheld by everyone; thus, the Constitution loses its focal power, which can cause miscoordination. I view that this concern for miscoordination constitutes a micro-foundation of voters’ constitutional qualms. See McAdams (2015) for more details.

²⁶Thomas Jefferson. 1803. *To Wilson Cary Nicholas Monticello*, September 7.

for one special case.²⁷ I assume $\lambda - Q_P > 0$ throughout the paper, unless stated otherwise. In addition, it is clear that L does not have any incentive to revoke x_L in the second period when x_L is the policy outcome in the first period. Moreover, L will replace x_R with x_L if the policy outcome is x_R and L wins the election in the first period. Hence, L 's utility function assumes the following form:

$$U_P = \begin{cases} \lambda - Q_p + W & \text{if } L \text{ acts unilaterally and wins the election,} \\ \delta(\lambda - Q_p) + W & \text{if } L \text{ does not act unilaterally and wins the election,} \\ -Q_p & \text{if } L \text{ acts unilaterally and loses the election,} \\ 0 & \text{if } L \text{ does not act unilaterally and loses the election.} \end{cases}$$

Note that whether unilateral action is profitable for the president depends on the electoral outcome, which is dependent on voters' calculus of voting. Thus, let us turn to voters.

There are two sets of voters: V_L representing a set of voters supporting L , and V_R representing a set of voters supporting R . In addition, there is a proper subset of V_L , denoted by S_L , that consists of supporters who receive more expressive benefits from policy x_L than other voters in V_L .²⁸ I use the following notation to denote the number of voters in each group: v_L , v_R , and s_L where $v_L > 0$, $v_R > 0$ and $0 < s_L < v_L$. Let $s = \frac{s_L}{v_L}$. Consistent with empirical evidence that partisan voters abstain rather than vote for the candidate of the other party (Iyengar et al. 2012; Iyengar and Westwood 2015), I assume that every voter must decide whether to vote for the candidate they supports or abstain at the end of the first period.

There are two types of expressive benefits of voting. First, for any voter i , there are

²⁷Below, I show that the president may take unilateral action to win the election even though the president prefers the status quo.

²⁸For example, Hispanic voters are this kind of subgroup in the context of Obama's recent unilateral action on immigration policy.

expressive benefits of voting from voters' partisan loyalty, denoted by $G_i \in \mathbb{R}_{++}$, which materialize only if i votes for the co-partisan candidate. If the voter abstains, the voter receives 0. Second, if the president unilaterally acts to set a policy targeting S_L , for any voter i in S_L , voter i receives an additional expressive utility from voting, denoted by $d_i \in \mathbb{R}_{++}$ when voter i votes for L .²⁹

Let $C_i \in \mathbb{R}$ denote the net cost of voting for voter i , which means the subtraction of all other positive expressive benefits of voting (e.g., civic duty) other than voters' partisan loyalty and extra expressive benefits of voting provided by presidential unilateral action from the total cost of voting. For any voter i , C_i is independently and identically drawn from a common distribution with full support whose cumulative distribution function F is continuous and strictly increasing. L knows only the distribution. Voting for a president who acts unilaterally activates voters' constitutional qualms, which incurs the same additional cost of voting, denoted by $Q \in \mathbb{R}_{++}$, for all i regardless of i 's partisanship.

I assume that the values of G_i are the same for the members of each set V_L and V_R . For notational convenience, let $G_i = G_L$ if $i \in V_L$ and $G_i = G_R$ if $i \in V_R$. Similarly, all members of S_L share the same d_L . Although this assumption is strong, it makes the model simple and tractable to show my basic argument. These parameters are known to the president. I also assume that there are enough voters in both V_L and V_R to guarantee the law of large numbers.

Although voters receive some benefits from placing their favorite candidate in office, I omit the terms for the benefits because it does not play an important role in voters' expected

²⁹It is possible that the president's unilateral action may inspire R supporters to turn out to vote for R . In the appendix, I show that the substantive conclusion from my model still holds even if these scenarios are incorporated into the model. The main effect of the addition of the counter-mobilization of R supporters is to increase the minimally required turnout rate of L supporters for L to win the election. However, the intuition behind the results from such an effect is well captured in my model by separating the friendly and the hostile political landscape, which is a much simpler way to follow. Indeed, adding the counter-mobilization of R supporters is nothing more than to define the friendly and the hostile political landscape in a more complex way. For more detail, see the appendix.

payoffs in large elections in which the probability that each voter's vote will be pivotal in determining the winner is very small, with almost zero probability in a large election. For simplicity, I assume that the pivotal probability is 0. Finally, the game proceeds as follows:

1. Period 1.

- i. L decides whether to act unilaterally to establish a policy x_L or maintain x_R .
- ii. C_i are drawn and voters choose their actions in the election.

2. Period 2.

- i. The (re)elected president in period 1 decides whether to keep the policy outcome of the first period or change it.
- ii. Payoffs are realized and the game ends.

3.3 Profitable Unilateral Action

Since cross-voting of voters is excluded in the model, the voters' options are reduced to whether to vote for their co-partisan candidate or to abstain, which enables us to make use of the basic idea of expressive theories of voting. According to expressive voting models, voters vote if and only if the benefits from voting are greater than the costs of voting. Then, the probability that voter i will turn out is

$$\Pr(\text{turnout})_i = \begin{cases} F(G_L - Q) & \text{if } i \in V_L \setminus S_L \text{ and } L \text{ acts unilaterally,} \\ F(G_L + d_L - Q) & \text{if } i \in S_L \text{ and } L \text{ acts unilaterally,} \\ F(G_L) & \text{if } i \in V_L \text{ and } L \text{ does not act unilaterally,} \\ F(G_R) & \text{if } i \in V_R. \end{cases} \quad (3.1)$$

Recall that there are many voters so that the law of large numbers is guaranteed. Hence, each group's expected voter turnout rate conditional on the president's unilateral action, is denoted by $t_{V_L \setminus S_L}$, t_{S_L} , t_{V_L} , and t_R , which follows from (3.1):³⁰

$$\begin{aligned} t_{V_L \setminus S_L} &= F(G_L - Q) \text{ when } L \text{ unilaterally acts,} \\ t_{S_L} &= F(G_L + d_L - Q) \text{ when } L \text{ unilaterally acts,} \\ t_{V_L} &= t_{V_L \setminus S_L} = t_{S_L} = F(G_L) \text{ when } L \text{ does not act unilaterally,} \\ t_{V_R} &= F(G_R) \text{ regardless of } L\text{'s action.} \end{aligned}$$

For L 's unilateral action to be profitable, it must guarantee L 's winning in the election because losing the election deprives L of not only W but also λ since the elected R will change the policy from x_L to x_R in the second period, which produces a negative payoff, $-Q_P$. This is worse than the case in which L does not unilaterally act and loses the election, which gives 0 to L . Let t'_{V_L} denote the expected turnout rate of L supporters after L 's unilateral action, such that $t'_{V_L} = st_{S_L} + (1-s)t_{V_L \setminus S_L}$. Note that, from (3.1), t'_{V_L} is a function of Q, G_L, d_L and s such that $t'_{V_L} : \mathbb{R}_{++} \times \mathbb{R}_{++} \times \mathbb{R}_{++} \times (0, 1) \rightarrow (0, 1)$. Since I assume the plurality rule, L wins if and only if $t'_{V_L} v_L \geq t_{V_R} v_R$. In addition, it is clear that $\delta(\lambda - Q_p) < \lambda - Q_p$ when L 's unilateral action guarantees L 's winning in the election. Hence, L will initiate unilateral action as long as the unilateral action secures L 's winning, as Lemma 1 states.

Lemma 1: *Let t'_{V_L} denote the expected turnout rate of L 's supporters after L 's unilateral action such that $t'_{V_L} = st_{S_L} + (1-s)t_{V_L \setminus S_L}$. The president takes unilateral action if and only if $t'_{V_L} v_L \geq t_{V_R} v_R$.*

³⁰Rigorously speaking, this holds only if the number of voters is infinite. However, for tractability, I assume that the president follows this reasoning as an approximated voter turnout rate estimation. This assumption might be interpreted as a sort of bounded rationality of the president. A similar usage of law of large numbers can be found in Morris and Shin (2002).

Our focus then moves to when L 's unilateral action guarantees winning. If L 's unilateral action changes the electoral outcome, then it occurs through changes from t_{V_L} to t'_{V_L} . It could be either $t'_{V_L} < t_{V_L}$ or $t'_{V_L} \geq t_{V_L}$. However, identifying the direction of the change post-unilateral action turnout rate of L supporters is not sufficient to know the consequent electoral outcome because the electoral outcome also depends on the type of the political landscape. There are two types of political landscape. First, L expects to win the election even without taking unilateral action, that is, $t_{V_L}v_L \geq t_{V_R}v_R$. I call this environment a *friendly* political landscape. Second, L expects to lose the election, that is, $t_{V_L}v_L < t_{V_R}v_R$. I call this case a *hostile* political landscape.

3.3.1 Friendly Political Landscape

There are two factors that construct the friendly political landscape: a higher turnout rate of L supporters (i.e., $t_{V_L} \geq t_{V_R}$) or the larger size of L supporters (i.e., $v_L \geq v_R$) (or both). By Lemma 1, L would unilaterally act as long as L 's unilateral action does not change the expected electoral victory. For this reason, L needs to calculate the net effect of unilateral action on the turnout rate of L supporters. There are three possible sub-cases in this scenario: (i) $v_L = v_R$, (ii) $v_L > v_R$, and (iii) $v_L < v_R$. In what follows, I will show that the effectiveness of voters' constitutional qualms in constraining unilateral action varies according to the relative size of v_L and v_R because the *minimum winning turnout rate* of L supporters for L to win is determined by it, as described in Figure 3.1.

As a benchmark, let us examine the first sub-case (i.e., $v_L = v_R$). Let m denote the minimum winning turnout rate of L supporters, that is, $m = \frac{v_R}{v_L}t_{V_R}$. Since $v_R = v_L$, L wins the election as long as t_{V_L} is at least as great as t_{V_R} , which implies $m = t_{V_R}$. Since I assume that L wins the election, it must be $t_{V_L} \geq m = t_{V_R}$. Lemma 1 implies the following condition

for L to unilaterally act:³¹

$$s \geq \frac{m - t_{V_L \setminus S_L}}{t_{S_L} - t_{V_L \setminus S_L}}, \quad (3.2)$$

or equivalently,

$$s \geq \frac{F(G_R) - F(G_L - Q)}{F(G_L - Q + d_L) - F(G_L - Q)}. \quad (3.3)$$

If $t_{V_L \setminus S_L} \geq m$, then the right-hand side of (3.2) becomes non-positive,³² which implies L always acts unilaterally since $s \in (0, 1)$. Rewriting this condition with respect to F , it is easy to see that this case happens when $Q \leq G_L - G_R$. Additionally, $G_L - G_R$ is always non-negative because $t_{V_L} \geq m = t_{V_R}$ implies $G_L \geq G_R$. Regardless of the size of the target voters s and the target voters' post-unilateral action turnout rate t'_{S_L} , (3.2) always holds, which implies that L 's unilateral action is unconstrained. It is because the partisan expressive benefits of L supporters (i.e., G_L) are so high that it is still possible for L to win the election with votes from only L supporters who do not receive any extra benefits but only are disappointed by the unilateral action. In other words, L does not need to mobilize S_L by unilateral action to win the election. That means the nature of the policy established by unilateral action here does not affect the president's electoral fate at all. Thus, in this case, the president can freely choose any policy that she prefers regardless of its mobilizing effects. That is, L can choose a policy according L 's own judgment because L 's re-election is secured regardless of L 's policy choice, which allows L to claim voters' confidence in L . In this sense, L appears to be what Weber called a "plebiscitary leader." Let $\underline{Q} = G_L - G_R$ denote the lower cut-point of Q such that L can act as a plebiscitary leader if Q is equal to or less than \underline{Q} .

³¹See Claim 1 in the Appendix.

³²Since L 's unilateral action provides extra benefits to the targeted voters, $t_{S_L} - t_{V_L \setminus S_L} > 0$ always holds.

Assume now that $\underline{Q} < Q$. L acts unilaterally if supporters in S_L can be sufficiently mobilized to compensate for the loss of supporters in $V_L \setminus S_L$. Given s and d_L , let Q^* denote the maximum value of Q that satisfies the above condition (3.3).³³ Then, Q^* is the middle cut-point such that L never acts unilaterally if $Q > Q^*$. Recall that L unilaterally acts because doing so provides additional expressive utility d_L with S_L voters, and this d_L motivates the targeted supporters to turn out. However, if $Q > Q^*$, the mobilizing effect by the unilateral action cannot compensate for the demobilizing effect because of either insufficient d_L or s , or both. Hence, if $Q > Q^*$, L is satisfied with the expected electoral victory only and waits for the next period to establish the policy.

Finally, L acts unilaterally when $\underline{Q} < Q \leq Q^*$. The unilateral action here is not necessary to win the upcoming election as in the first case (i.e., $Q \leq \underline{Q}$). However, unilateral action is profitable now because of its sufficient mobilizing effects that guarantees that the president wins. Taking unilateral action in this situation is observationally equivalent to that of the first case, where the presence of sufficient mobilizing effects does not matter. However, unilateral action in this situation is qualitatively different since its profitability now depends on the presence of sufficient mobilizing effects. In other words, the reason the policy can be established via unilateral action in this case is that the target group of the policy is sufficiently large, and/or they sufficiently care about the policy given the magnitude of voters' constitutional qualms. That means, voters' constitutional qualms do not constrain the president's unilateral action itself, but voters' constitutional qualms at least limit the policy options available to the president that can be established via unilateral action. In this sense, the president in this case appears to be the "semi-plebiscitary leader."

Let us now turn to the sub-case (ii) in which $v_L > v_R$. This case is the most friendly political landscape. L has an advantage that the number of L supporters is larger than that of R supporters, which increases all cut-points \underline{Q} and Q^* (compare (a) and (b) of Figure

³³The intermediate value theorem implies that a unique Q^* such that $t'_{V_L}(Q^*; \cdot) = m$ exists.

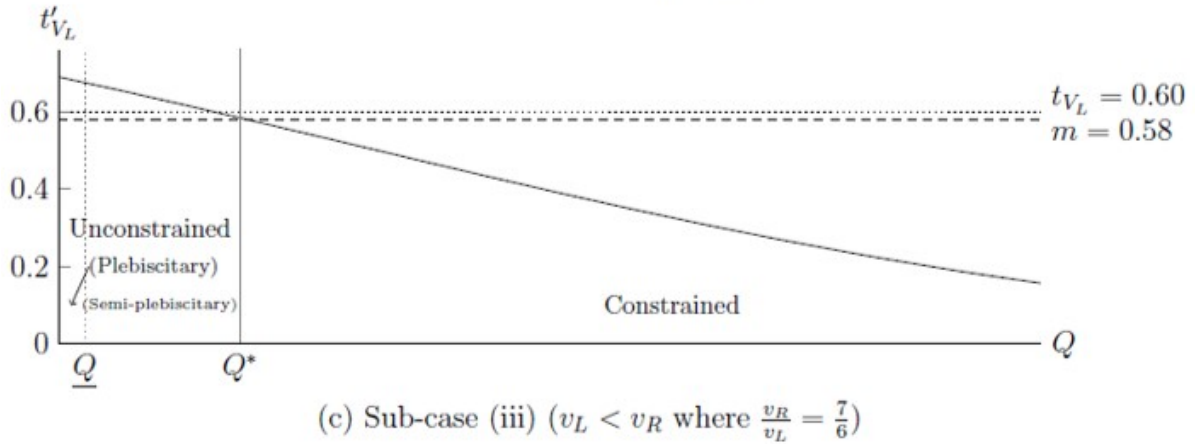
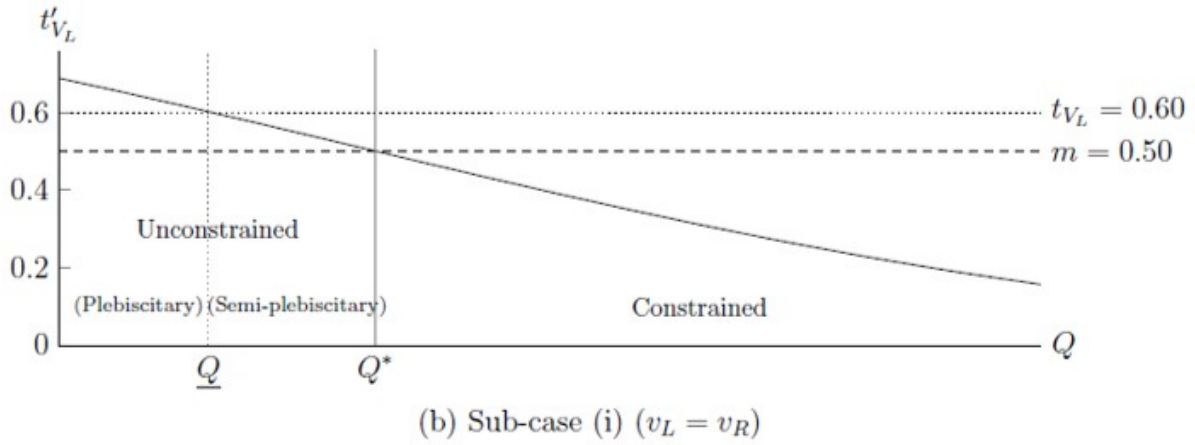
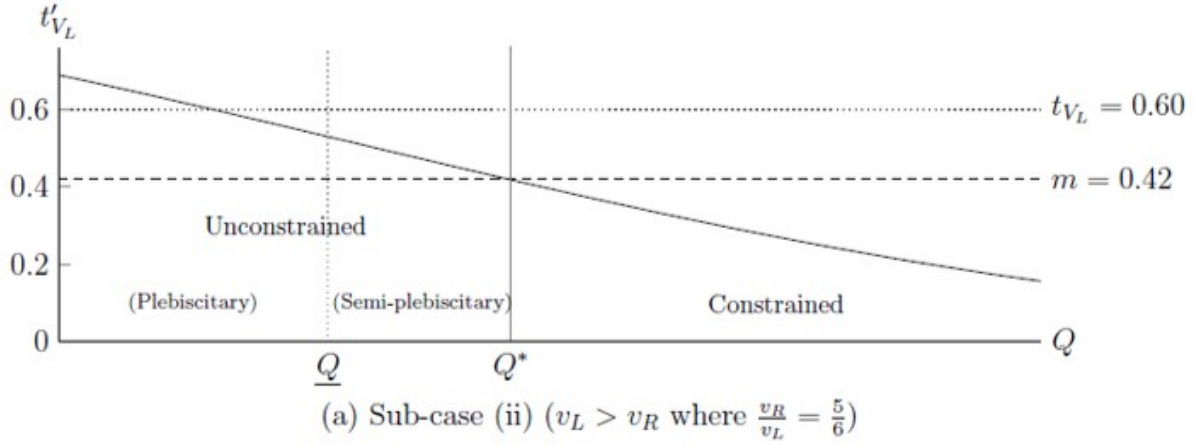


Figure 3.1: L supporters' turnout rates after unilateral action t'_{V_L} as a function of Q where $t_{V_L} = 0.6$, $t_{V_R} = 0.5$, $s = 0.3$, $d_L = 3$, and $C \sim \mathcal{N}(2, 3)$. The president never takes unilateral action if $Q > Q^*$ since t'_{V_L} becomes less than the minimum winning turnout rate m .

3.1).³⁴ It is because this advantage yields less m than that of the sub-case (i). Hence, L still can win the election even if $t_L < t_R$ because the only condition required is $t_{V_R} \geq \frac{v_R}{v_L} t_{V_R}$. This relaxation provides L with the opportunity in which L can more aggressively exercise unilateral power.

In the sub-case (iii) in which $v_L < v_R$, the constraining power of voters' constitutional qualms is enhanced, which is described in Figure 3.1 as smaller Q^* and \underline{Q} than those of the sub-case (i). The intuition behind this is that L can win the election only if L supporters' turnout rate is sufficiently larger than R supporters' turnout rate, so L has a slim buffer zone that absorbs demobilizing effects as described in the area between the dashed and the dotted horizontal lines in (c) of Figure 3.1.³⁵

In summary, we see that presidential unilateral action is not a free pass to achieve the policy goal. Rather, the president's decision on the unilateral action is dependent on the magnitude of constitutional qualms of voters. In addition, given a policy with s and d_L , the range of Q that allows the president to act unilaterally to establish the policy decreases as the fraction of the president's supporters decreases, as described in Figure 3.1. The following Proposition 1 summarizes the results:

Proposition 1: *Suppose $t_{V_L} v_L \geq t_{V_R} v_R$. Consider a policy with fixed s and d_L . Then, there exists \underline{Q} such that $\underline{Q} = G_L - G_R$, and Q^* such that $t'_{V_L}(Q^*; \cdot) = m$. The president acts unilaterally to establish the policy if $Q \leq Q^*$, while the president's unilateral action is constrained by voters' constitutional qualms if $Q > Q^*$. In addition, \underline{Q} and Q^* move toward 0 as $\frac{v_R}{v_L}$ increases.*

³⁴See Claim 2 in the Appendix.

³⁵See Claim 2 in the Appendix.

3.3.2 Hostile Political Landscape

In the hostile political landscape, the president anticipates L 's electoral defeat (i.e., $t_{V_L}v_L < t_{V_R}v_R$). There are three possible sub-cases: (i) $v_L = v_R$, (ii) $v_L > v_R$, and (iii) $v_L < v_R$. I analyze sub-case (i) only because the results of sub-cases (ii) and (iii) naturally follow what I have shown in the previous analysis of the friendly political landscape. In sub-case (i), $t_{V_L} < \underline{t}_{V_L} = t_{V_R}$, which implies that L loses the election if L does not take unilateral action. Hence, it is impossible for the president to act unilaterally to only establish a policy in a hostile political landscape.³⁶ If the president unilaterally acts, it is only because the unilateral action can change the electoral outcome by mobilizing the targeted supporters. Hence, unlike in the friendly political landscape, the president cannot freely choose a policy to be established by unilateral action. In particular, targeted supporters play a pivotal role in the election if $Q \leq Q^*$. To win the election, L must mobilize these pivotal supporters. That said, the primary purpose of the presidential unilateral action is not to gain additional policy benefits but to avoid electoral disaster. In this sense, the president's decision on unilateral action appears to be particularistic.³⁷ Furthermore, if the president deeply cares about L 's re-election, the president may take unilateral action even if the president's constitutional qualms outweigh the policy legacy concerns and/or even if the president does not prefer the policy (i.e., $|\lambda - Q_P| < |W|$, where $\lambda - Q_p \leq 0$). The president's unilateral action can thus be interpreted as pandering.

Meanwhile, as in the friendly political landscape, voters' constitutional qualms effectively constrain the president's unilateral action when $Q > Q^*$. However, the effectiveness of voters' constitutional qualms as a constraint is enhanced in the hostile political landscape. The reason is simple. In a hostile political landscape, $G_L < G_R$. Therefore, Q^* is lower than that

³⁶See Claim 3 in the Appendix.

³⁷The "particularistic presidency" refers to the president's strategic behavior that aims to mobilize swing voters who have a casting vote by providing an exclusive policy benefit to the specific constituencies (Kriner and Reeves 2015, 2016). Reeves (2011) showed that presidential unilateral action is one of tools that the president can use for this purpose.

of the friendly political landscape.

There is another interesting case that can occur only in the hostile political landscape. If the number of all L supporters is less than the number of R supporters who are expected to turn out (i.e., $t_{V_R}v_R > v_L$), L never unilaterally acts since L cannot avoid electoral disaster whatsoever. It is because the minimum winning turnout rate m must be at least 1, which is impossible. The only way that L can improve the payoff in this case is to do nothing so that L , at least, can keep the peace of constitutional mind. Note that Q is not even considered in the president's reasoning. This is an interesting case in which the presidential unilateral action is perfectly constrained without any help from the voters' constitutional concerns.³⁸ The following Proposition 2 summarizes the results:

Proposition 2: *Suppose $t_{V_L}v_L < t_{V_R}v_R$. Consider a policy with fixed s and d_L . Then, there exists Q^* such that $t'_{V_L}(Q^*; \cdot) = m$. The president acts unilaterally to establish the policy if $Q \leq Q^*$, while the president's unilateral action is constrained by voters' constitutional qualms if $Q > Q^*$. Moreover, if $t_{V_R}v_R > v_L$, then the president never acts unilaterally regardless of the value of Q . In addition, Q^* moves toward 0 as $\frac{v_R}{v_L}$ increases.*

Thus far, my model indicates that whether a given policy with fixed s and d_L will be established through the president's unilateral action depends on the magnitude of voters' constitutional qualms, which determines the electoral outcome through voter mobilization or demobilization. This intuition is consistent with what Schattschneider (1960, 2) pointed out, "The number of people involved in any conflict determines what happens; every change in the number of participants, every increase or reduction in the number of participants affects

³⁸Some readers may wonder if the president takes unilateral action in this case since establishing the policy he prefers is the only way for him to obtain positive payoffs given his electoral defeat is unavoidable. However, the president cannot obtain positive policy benefits since the policy will be revoked by R in the second period even if the president unilaterally acts in the first period.

the result.” Furthermore, my model shows that the president’s observationally equivalent engagements in unilateral action may come from different motivations. Recognizing these different motivations is important because it raises a question over whether it is legitimate to denounce the president’s use of unilateral action solely based on the violation of the constitutional principle. I will examine this question below after extending my model by incorporating independent voters.

3.4 Extension: Adding Independent Voters

I have excluded independent voters from my model so far. If we add independent voters into the model, will this addition result in a more strict constraining power of voters’ constitutional qualms? To answer this question, I now relax the assumption. Instead of the assumption that all voters are partisan, I include independent voters who do not have a partisan expressive utility of voting but have constitutional qualms. Except for this, these independent voters share the same utility components as other partisan voters.³⁹

These independent voters do not receive any partisan expressive benefits of voting. Thus, they will turn out on election day if and only if the net cost of voting is non-positive, which means they receive sufficient expressive utility from the act of voting other than partisan expressive utility. Therefore, the expected independent voter turnout rate is $F(0)$.

Call independent voters who turn out *effective independent voters*. If L acts unilaterally, then it is obvious that *all* the effective independent voters cast a ballot for R because of constitutional qualms. Otherwise, the effective independent voters are indifferent between L and R . In the latter case, I assume that half of the effective independent voters vote for L , while the other half vote for R .

With this new setting, these independent voters play the same role of R supporters

³⁹I state only the main results. See the appendix for the mathematical reasoning behind the results.

when L unilaterally acts. Then, effective independent voters increase m , which results in all cut-points of constitutional qualms moving toward 0. In addition, the existence of the independent voters makes it much easier to remove any winning possibility for the president regardless of the magnitude of voters' constitutional qualms, which is the case pointed out in the analysis of the hostile political landscape. It is because the condition for this case to happen now changes from $t_{V_R}v_R > v_L$ to $t_{V_R}v_R + v_I^* > v_L$. That is, even if the number of R supporters who turn out is less than or equal to that of L supporters (i.e., $t_{V_R}v_R \leq v_L$), since all the effective independent voters will vote for R if the president acts unilaterally, it is still possible that the president's unilateral action can be constrained regardless of the magnitude of voters' constitutional qualms if sufficient effective voters exist. Furthermore, this case now can occur even in the friendly political landscape when $v_I^* \geq v_L$. Consequently, the president is more constrained in both political landscapes because there is too much to lose by unilateral action.

The lesson is that with more existing the effective independent voters, the use of unilateral actions is more strictly constrained. The effective independent voters directly suppress the president's unilateral action, primarily by adding more votes for R . That is, the existence of the effective voters increases the minimally required L supporters' turn out rate for the president to win the election. In other words, the effective independent voters' negative reactions against unilateral action becomes the additional cost of the president's unilateral action besides the cost from L voters' constitutional qualms. Consequently, we may expect that voters' constitutional qualms become more effective in constraining the president's unilateral action.

3.5 Discussion and Conclusion

I began with a simple puzzle of why the president does not always invoke unilateral power to establish a policy that is not likely to pass in a normal legislative process although checks and balances from other branches are ineffective. To solve this puzzle, I propose to consider that the president uses unilateral action to mobilize supporters to secure re-election. Establishing a policy through unilateral action provides extra partisan benefits of voting to a subgroup of the president's supporters, which in turn increases their turnout rate. At the same time, however, unilateral action is not costless because it activates voters' constitutional qualms that lead them to abstain. Hence, the president acts unilaterally only if the mobilizing effects sufficiently outweigh the demobilizing effects so that the president's unilateral action can be legitimized in terms of the president's electoral victory. This conclusion not only explains the variation in the president's decisions on the use of unilateral action but also poses a fundamental question regarding whether it is fair to criticize unilateral action based on the lack of constitutionality only.

The president's unilateral action acquires popular support expressed in the election, and this popular support may provide democratic legitimacy that can compensate for the lack of constitutional legitimacy. In particular, if we can interpret the magnitude of voters' constitutional qualms as the degree of popular support for the Constitution, it is possible to conclude that the president's exercise of unilateral action occurs when voters deeply care more about the policy than about the constitutional principle. Moreover, it is also possible that the president is allowed to use constitutionally controversial unilateral action to establish a policy that champions constitutional rights of a certain subgroup of voters. Hence, the model implies that it may be unfair to denounce the president's unilateral action to be illegitimate based on the lack of constitutionality only.

For example, plebiscitary leadership, where the president unilaterally establishes a pol-

icy according to the president's own judgment, is possible because the president can claim voters' confidence through the election even though the president violates the constitutional principle. Together with the lack of constitutionality, this plebiscitary leadership may look problematic because the president can further his or her own interests rather than voters' interests via unilateral action. However, if the president is committed to protecting and furthering voters' interests, then it is this guaranteed electoral success that enables the president to establish a proper policy even when the chosen policy is unpopular among voters and legislators (for such "true leadership" of the president, see Canes-Wrone and Shotts 2004). Although my model does not speak to whether the president is a good or bad type, the model at least suggests that discussion on how to elect the president who can exercise true leadership via unilateral action in the first place might be more constructive than a blind denunciation of presidential unilateral action.

If we are still concerned about the possibility of a bad type president's arbitrary policy choice, the semi-plebiscitary leadership would be an ideal instance where voters' constitutional qualms constrain the president's policy choice. Although the president's unilateral action is unconstrained, the non-negligible demobilizing effects of unilateral action from voters' constitutional qualms at least force the president to choose a policy whose target group is sufficiently large to guarantee the president's re-election. Moreover, unlike in the situation with particularism, there is no incentive for the president to pander to voters because the president's re-election is guaranteed without conducting unilateral action. Hence, the president would initiate unilateral action only if a particular policy is deemed to be appropriate by both the president and a substantial fraction of voters. Again, I admit that my model is incapable of distinguishing whether the target group's claim is compatible with democratic values. However, my model suggests that unilateral action is a double-edged sword: Unilateral action can yield either benign or malign effects on our democracy, which is dependent on the nature of the target group's claim.

This double-edged unilateral action is especially eminent in the situation with particularism, which also seems problematic for our democracy. The unilateral action from the particularism not only lacks constitutionality but also may lead the president to pander to pivotal voters to win the election. However, this particularism at the same time provides an opportunity for minority groups seeking rights-based claims to have the president to establish a policy that advocates their claims through unilateral action, although the minority groups must be pivotal in deciding the electoral outcome. President Truman's desegregation of the armed forces is one example. President Truman faced a hostile political landscape considering that Truman's defeat was almost unanimously predicted by polls prior to the 1948 presidential election. However, the electoral outcome was Truman's surprising victory, as indicated by the famous incorrect headline on the *Chicago Daily Tribune* on election day: "Dewey Defeats Truman." One of the reasons for Truman's win was Executive Order 9981 that directs desegregation of the armed forces. To win the election, President Truman was encouraged to target African American voters by enacting more aggressive policies on desegregation because these African American voters were expected to play a pivotal role in his electoral success in the election as the following memorandum shows:

[T]he northern Negro voter today holds the balance of power in Presidential elections for the simple arithmetic reason that the Negroes not only vote in a bloc but are geographically concentrated in the pivotal, large and closely contested electoral states such as New York, Illinois, Pennsylvania, Ohio, and Michigan (Donaldson 1999, 26, cited by Nzelibe 2011, 424).

Moreover, many studies present ample of evidence that Truman carefully timed initiating the executive order to garner support from African American voters who were pro-Democrat, politically inactive, but whose size was large enough to be pivotal (e.g., Morgan 1970; Taylor

2013).

As such, the president's unilateral action is constitutionally illegitimate but simultaneously legitimate in terms of popular support expressed in the election because the president acts unilaterally only when there exists popular support coming from voters' weak constitutional qualms. What I emphasize here is that this dual legitimacy of unilateral action suggests that we need to pay more attention to possibly benign but neglected effects of unilateral action on our democracy. In particular, if the Constitution is the principal culprit of the dysfunctional government as Howell and Moe (2016) claimed, then it would be critical to examine the legitimacy of unilateral action from popular support in making a normative judgment on unilateral action.

Although I do not directly investigate how the degree of voters' constitutional qualms is determined, the model suggests that congressional political tactics to constrain the president may be one of the sources. In their provocative study, Posner and Vermeule (2010) claimed that the danger of executive tyranny is not worrisome even though the executive is *legally* unbound because the executive is *politically* bound. They argued that "these checks are not primarily legal. [...] Rather legislators appeal to the court of public opinion, which in turn constrains the president" (Posner and Vermeule 2010, 61). This suggests a possibility that legislators can constrain unilateral action through affecting public opinion even in the absence of effective institutional ways of checks and balances. That is, legislators may cultivate stronger constitutional qualms of voters that are enough to constrain the exercise of unilateral action by the president. For example, Kriner and Schickler (2016) and Christenson and Kriner (2017b) showed that Congress challenges unilateral action using various tools (e.g., congressional investigation) to enhance voters' constitutional qualms.

In the model, voters' constitutional qualms play a crucial role in constraining unilateral action. That is, it is more likely for the president to act unilaterally as voters' constitutional qualms become weaker. Then, the expansion of presidential power throughout U.S. history

may reflect the weakening trend of voters' constitutional qualms. This provides food for thought about the sources of the rise of the unilateral presidency. Conventionally, the ambiguity of the Constitution and the rise of the administrative state have been understood as the primary sources of the rise of the unilateral presidency (Moe and Howell 1999a, 1999b). However, these factors just added unilateral action to the president's arsenal of many policymaking tools. What makes unilateral action a profitable policymaking tool and, in turn, leads the president to actually use it is voters' weak constitutional qualms. Hence, it may be voters who finally approved and invited the unilateral presidency. Elections, through which voters' constitutional qualms constrain the unilateral presidency, have played a role of the extra-constitutional mechanism that determines whether the president's unilateral action is legitimate in dealing with newly emerged political needs.⁴⁰

3.6 Appendix

Proof of Claim 1

Unilateral action ensures the president's electoral victory if and only if

$$t'_{V_L} \geq m. \tag{3.4}$$

Since $t'_{V_L} = st_{S_L} + (1 - s)t_{V_L \setminus S_L}$, by rearranging (4), we get

$$s \geq \frac{m - t_{V_L \setminus S_L}}{t_{S_L} - t'_{V_L \setminus S_L}}. \tag{3.5}$$

The sufficient condition for that the right hand side of (5) is well-defined is $t_{S_L} - t_{V_L \setminus S_L} \neq 0$, which is satisfied since we assume that $d_L > 0$, which implies $t_{S_L} - t_{V_L \setminus S_L} > 0$.

⁴⁰Regarding the extra-constitutional mechanism, see Skowronek (2009).

The sufficient condition for that (5) always holds for all $s \in (0, 1)$ is

$$m - t_{V_L \setminus S_L} \leq 0$$

$$m \leq t_{V_L \setminus S_L}.$$

The remaining case is then $m > t_{V_L \setminus S_L}$. Note that both $t_{S_L} - t_{V_L \setminus S_L} > 0$ and $t_{V_L} - t_{V_L \setminus S_L} > 0$ imply that the right hand side of (5) is always positive. Thus, if $t_{S_L} < m$, then (5) is greater than or equal to 1, which implies that (5) never holds for all $s \in (0, 1)$. \square

Proof of Claim 2

Suppose that L wins the election and $v_L > v_R$. From the fact that F is continuous and strictly increasing, it is obvious that $F^{-1}\left(m = \frac{v_R}{v_L} t_{V_R}\right) < F^{-1}(t_{V_R}) = G_R$ since $m = \frac{v_R}{v_L} t_{V_R}$ where $\frac{v_R}{v_L} < 1$. Therefore, $G_L - F^{-1}\left(\frac{v_R}{v_L} t_{V_R}\right) > G_L - G_R$, which implies that \underline{Q} here is greater than its counterpart in the sub-case (i). Similarly, the right hand side of the inequality (3) is replaced by $\frac{v_R}{v_L} t_{V_R}$, which is less than $F(G_R)$. Note that the left hand side of the inequality (3) is a monotonically decreasing function in Q , having other parameters fixed. Hence, Q^* increases.

Now, suppose L wins but $v_L < v_R$ instead. Since we assume that L wins the election, it must be that $F^{-1}\left(m = \frac{v_R}{v_L} t_{V_R}\right) > F^{-1}(t_{V_R}) = G_R$. It must be the case that $t_{V_R} < \frac{v_L}{v_R}$ since we assume that L wins the election without the president's unilateral action. Then, the symmetric argument in the case where $v_L > v_R$ shows that Q^* and \underline{Q} go down than those of the sub-case (i). Moreover, $v_L < v_R$ implies that $\frac{v_R}{v_L} > 1$, $m > t_{V_R}$. This result substantively implies that G_L must be greater than G_R because L cannot enjoy the joy of the electoral victory if L voters turn out less than or equal to R voters under no unilateral action. In plain words, there is no situation in which L wins if L voters are outnumbered by R voters and R voters are more loyal than L voters (i.e., $G_L \leq G_R$), which is possible in

sub-case (ii). \square

Proof of Claim 3

Recall that the plebiscitary leadership is possible only when $Q \leq G_L - F^{-1}(m)$. Since $G_L < F^{-1}(m)$ in the hostile political landscape, $G_L - F^{-1}(m)$ is always negative. However, Q must be positive, which implies that this condition never holds. \square

Adding Independent Voters

Let V_I denote the set of independent voters. Let t_{V_I} denote the expected turnout rate of the independent voters such that $t_{V_I} = F(0)$. Let V_I^* denote the set of effective independent voters who will turn out such that $v_I^* = t_{V_I}v_I$. Since the independent voters do not receive any extra expressive benefits of voting from L 's unilateral action but L 's unilateral action only activates the independent voters' constitutional qualms, all effective independent voters will vote for R if L initiates unilateral action.

In the hostile political landscape, we have $t_{V_L}v_L + \frac{1}{2}v_I^* < t_{V_R}v_R + \frac{1}{2}v_I^*$. Then, $m = \frac{t_{V_R}v_R + v_I^*}{v_L}$, which is greater than that of the setting without independent voters since the unilateral action leads all the effective independent voters to vote for R . If $v_L \leq v_I^*$, then m is at least 1 regardless of the relative size between v_L and v_R . If $v_L > v_I^*$, as long as the difference between the numbers of L and R voters is less than the number of effective independent voters and G_R is sufficiently high, (i.e., $v_L - v_R \leq v_I^*$ and $G_R \geq F^{-1}\left(\frac{v_L - v_I^*}{v_R}\right)$), m is at least 1 regardless of the relative size between v_L and v_R .

Now, assume that the political landscape is not too hostile as specified in the previous paragraph. Still, the president is more constrained because the constraining power of L voters' constitutional qualms is also enhanced, which is reflected by the fact that all the cut points in every sub-case are less than their counterparts in the setting without independent voters. This is because m is greater here than that of the setting without independent voters.

In a similar vein, presidential unilateral actions are more strictly constrained in the friendly political landscape (i.e., $t_{V_L}v_L + \frac{1}{2}v_I^* \geq t_{V_R}v_R + \frac{1}{2}v_I^*$). If $v_I^* \geq v_L$, m is at least 1 regardless of the relative size between v_L and v_R . To see why, note that $m = \frac{v_R}{v_L}t_{V_R} + \frac{v_I^*}{v_L}$. If $v_L \leq v_I^*$, then $m \geq 1$. Recall that the president's unilateral actions are profitable if and only if $t'_{V_L} \geq m$. However, since $t'_{V_L} < 1$ and $m \geq 1$, this condition never holds regardless of Q . Assume that $v_L > v_I^*$ instead. Still, 1) if $t_{V_R} \geq \frac{v_I^*}{v_L}$ when $v_L = v_R$, or 2) if $t_{V_R} \geq \frac{v_L - v_I^*}{v_R}$ when $v_L > v_R$, then m is at least 1 regardless of the relative size between v_L and v_R . Note that we already assumed that $t_{V_R} < \frac{v_L}{v_R}$ when $v_L < v_R$ in the friendly political landscape. Hence, $t_{v_R} < \frac{v_L - v_I^*}{v_R}$ is trivially satisfied.

Let us turn to the cases where all the parameters are appropriately set to avoid the case in which m is at least 1 regardless of the relative size between v_L and v_R . As in the hostile political landscape, all the cut points of Q decrease regardless of the relative size of L and R voters, which results in the enhanced constraining power of voters' constitutional qualms in every sub-case compared to the setting without independent voters. This is because the minimum winning L voter turnout rate m increases compared to its counter part in the setting without independent voters. \square

When There Exists the Counter-Mobilization of R Supporters

L 's unilateral action can mainly cause the counter-mobilization of R supporters in two ways. First, some R supporters who dislike the policy L established by unilateral action may be encouraged to turn out and vote for R as a punishment to L . Second, R supporters may be inspired to turn out to punish L for his/her violation of the constitutional principles. These two cases are not mutually exclusive. However, regardless the way through which R supporters are inspired to turn out, the result is that more R supporters will turn out. This implies that the minimum winning turnout rate of L 's supporters (i.e., m) now will be higher.

Consider the friendly political landscape. Assume that $v_L = v_R$. Let m° denote the minimum winning turnout rate of L supporters when L 's unilateral action activates the counter-mobilization of R supporters. Then, there exists G_R° such that $m^\circ = F(G_R^\circ)$ since $F(G_R^\circ) = m^\circ > F(G_R) = m$. Then, we have $G_R^\circ > G_R$. Since $\underline{Q} = G_L - G_R$, the new threshold $\underline{Q}^\circ = G_L - G_R^\circ$ must be less than \underline{Q} . That is, voters' weak constitutional qualms that would have caused the plebiscitary leadership of the president in the absence of the counter-mobilization of R supporters now may prohibit the president from exercising such leadership. In addition, if the effects of the counter-mobilization of R supporters are strong enough to satisfy $G_R^\circ \geq G_L$, then the plebiscitary leadership never happens regardless of the value of Q .

If the unilateral action is not costly (i.e., $Q = 0$), then the turnout rate of L supporters after unilateral action is $sF(G_L + d_L) + (1 - s)F(G_L)$, and this is the maximum turnout rate of L supporters that the president can produce by unilateral action. Hence, if $sF(G_L + d_L) + (1 - s)F(G_L) < F(G_R^\circ)$ (i.e., $s < \frac{F(G_R^\circ) - F(G_L)}{F(G_L + d_L) - F(G_L)}$), then L never acts unilaterally. If $G_R^\circ \geq G_L + d_L$, then $s < \frac{F(G_R^\circ) - F(G_L)}{F(G_L + d_L) - F(G_L)}$ always holds because $\frac{F(G_R^\circ) - F(G_L)}{F(G_L + d_L) - F(G_L)} \geq 1$. Therefore, L never acts unilaterally regardless of the value of Q when $G_R^\circ \geq G_L + d_L$. If $G_R^\circ < G_L$, then $s \geq \frac{F(G_R^\circ) - F(G_L)}{F(G_L + d_L) - F(G_L)}$ always holds because $\frac{F(G_R^\circ) - F(G_L)}{F(G_L + d_L) - F(G_L)} < 0$. Hence, there exists a unique $Q^{*\circ}$ such that $t'_{V_L}(Q^{*\circ}; \cdot) = m^\circ$ and $\underline{Q}^\circ < Q^{*\circ}$. Note that t'_{V_L} is decreasing in Q , which implies that $Q^{*\circ} < Q^*$ because $m < m^\circ$. This result also shows that the constraining power of voter's constitutional qualms is enhanced thanks to the existence of the counter-mobilization of R supporters. The remaining case is $G_L \leq G_R^\circ < G_L + d_L$ in which there does not exist \underline{Q}° . In this case, it is possible that there does not exist $Q^{*\circ}$ such that $Q^{*\circ} > 0$ as well. For $Q^{*\circ}$ to exist, either s or d_L or both must be sufficiently large enough to satisfy $s \geq \frac{F(G_R^\circ) - F(G_L)}{F(G_L + d_L) - F(G_L)}$. That means, the counter-mobilization of R supporters forces the president to choose a policy whose target group is sufficiently large and/or deeply cares about the policy in the first place. After choosing such a policy, the president now needs to

consider whether L supporters' constitutional qualms are less than or equal to $Q^{*\circ}$.

Now, assume that $v_L > v_R$. Then, $m^\circ = \frac{v_R}{v_L}F(G_R^\circ) < F(G_R^\circ)$. If $G_L \leq F^{-1}(m^\circ)$, then the plebiscitary leadership never happens. If $G_L > F^{-1}(m^\circ)$, there exists \underline{Q}° and $Q^{*\circ}$. It is easy to see that \underline{Q}° here is larger than that of the case where $v_L = v_R$ because $G_L - F^{-1}(m^\circ) > G_L - G_R^\circ$. In addition, $Q^{*\circ}$ here is also larger than that of the case where $v_L = v_R$ because t'_{V_L} is decreasing in Q . If $G_L \leq F^{-1}(m^\circ) < G_L + d_L$, then $Q^{*\circ}$ exists if and only if $s \geq \frac{\frac{v_R}{v_L}F(G_R^\circ) - F(G_L)}{F(G_L + d_L) - F(G_L)}$. Note that this condition is also relaxed compared to the case where $v_L = v_R$. Again, $Q^{*\circ}$ here is larger compared to the case where $v_L = v_R$ because t'_{V_L} is decreasing in Q .

Assume that $v_L < v_R$. Then, $m^\circ = \frac{v_R}{v_L}F(G_R^\circ) > F(G_R^\circ)$. If $m^\circ \geq 1$, then the president never acts unilaterally. Hence, we restrict our attention to the cases in which $m^\circ < 1$. Then, by the opposite of the argument in the previous paragraph, \underline{Q}° and $Q^{*\circ}$ moves toward 0 when $v_L < v_R$. In addition, both the condition for the existence of the plebiscitary leadership and the condition for the existence of $Q^{*\circ}$ when $G_L \leq F^{-1}(m^\circ) < G_L + d_L$ are strengthened compared to the case where $v_L = v_R$.

In sum, the counter-mobilization of R supporters (i.e., G_R°) imposes an additional constrain on L 's unilateral action besides L supporters' constitutional qualms. Recall that this effects of the counter-mobilization of R supporters originates from that the minimally required turnout rate of L supporters for L to win the election increases.

Consider the hostile political landscape. Assume that $v_L \geq v_R$. Then, we have $F(G_L) < F(G_R^\circ) \leq m^\circ$, which implies that $G_L < G_R^\circ \leq F^{-1}(m^\circ)$ always holds. Hence, the plebiscitary leadership never occurs. So, there are only two possible cases: $G_L < G_R^\circ \leq F^{-1}(m^\circ) < G_L + d_L$ and $G_L + d_L < G_R^\circ \leq F^{-1}(m^\circ)$. Again, the president never acts unilaterally when $G_L + d_L < G_R^\circ \leq F^{-1}(m^\circ)$. If $G_L < G_R^\circ \leq F^{-1}(m^\circ) < G_L + d_L$, then there exists $Q^{*\circ}$ such that $t'_{V_L}(Q^{*\circ}; \cdot) = m^\circ$ and $Q^{*\circ} > 0$ if and only if $s \geq \frac{F(G_R^\circ) - F(G_L)}{F(G_L + d_L) - F(G_L)}$. Note that G_R° here is greater than that of the friendly political landscape given the same G_L , which implies

that m° here is greater than that of the friendly political landscape. Hence, we see that the condition for the existence of $Q^{*\circ}$ is much strengthened compared to the friendly political landscape and $Q^{*\circ}$ is less than that of the political landscape.

Assume now that $v_L < v_R$. Again, if $m^\circ (= \frac{v_R}{v_L} F(G_R^\circ)) \geq 1$, then the president never acts unilaterally. Hence, we restrict our attention to the cases in which $m^\circ < 1$. Note that $F(G_L) < \frac{v_L}{v_R} F(G_R)$, which implies that $G_L < G_R < G_R^\circ < F^{-1}(m^\circ)$. Hence, again, the plebiscitary leadership never happens. The remaining cases are the same as the cases in which $v_L \geq v_R$ except that the condition for the existence of $Q^{*\circ}$ is more strengthened and $Q^{*\circ}$ is much closer to 0 compared to the cases in which $v_L \geq v_R$.

Overall, we see that the existence of the counter-mobilization of R supporters does not substantially change the results of the hostile political landscape from the results of the main text. Also, the intuitions behind the results in the hostile political landscape in the main text are the same here.

Considering that the different results between in the political landscape and the hostile landscape in the main text are mainly produced by the increased minimum winning turnout rate of L supporters in the hostile political landscape, the role of the counter-mobilization of R supporters is to lead the president to play as he/she in the hostile political landscape although the president faces the friendly political landscape under certain circumstances. If we newly define the friendly and the hostile political landscape according to whether the president can exercise the plebiscitary leadership, then the intuition here is exactly the same as described in the main text but we lose the simplicity of our model. For this reason, we do not include the counter-mobilization of R supporters. \square

Chapter 4. The Welfare Implications of Separation of Powers and Competitive Elections in Policy Implementation

4.1 Introduction

Separation of powers splits the legislative, executive, and judicial powers into three branches of government so that each branch's ambition can be used to check and balance the ambition of the other branches to protect personal liberties from unfettered government power. As James Madison famously put, "[a]mbition must be made to counteract to ambition." This idea of checks and balances through separation of powers has been firmly established as the core principle of American government and is celebrated by many Americans without doubt.

Yet, it is questionable whether separation of powers is indeed indispensable for preventing tyranny in a democracy because democracy has another mechanism through which people can control the holders of powers, thereby preventing usurpation of powers: competitive elections. For example, Peter Singer claims that separation of powers is not a necessary condition for preventing the rise of tyranny by counterexamples of Britain and former British

colonies such as Australia, New Zealand, and Canada, which have never fallen into tyranny, although these countries do not have constitutional separation of powers.⁴¹

While separation of powers seems redundant in preventing usurpation of powers, there are growing concerns that separation of powers reduces the government's effective problem-solving ability (Kelly 1993; Edwards et al. 1997; Krehbiel 1998; Binder 1999, 2015; Coleman 1999; Brady and Craig 2005; Mansbridge 2012; Howell and Moe 2016). This is because separation of powers requires consent from both the legislature and executive to enact and implement a policy, which increases the likelihood of a political stalemate. In other words, separation of powers creates multiple veto points. According to Justice Antonin Scalia, “[political stalemate] is exactly the way [the framers] set it up. [The framers] wanted power contradicting power to prevent an excess of legislation.”⁴²

This poses a theoretical puzzle. Despite the fact that elected officials can be disciplined by competitive elections and separation of powers leads to the ineffectiveness of government in solving national problems, why do we still maintain separation of powers as the core principle of organizing government? Is this because Americans have intrinsic preferences for separation of powers as some scholars argue (Erikson 1988; Jacobson 1990; Ladd 1990; Fiorina 1991, 1992)? Or, are there any other welfare grounds that can justify separation of powers? In other words, can separation of powers improve voters' welfare in a way that is not redundant with competitive elections?

To address these questions, this paper presents a formal model that focuses on how separation of powers and electoral competition jointly affect voters' welfare in the policy implementation stage. The model is a single-period game in which the executive and legis-

⁴¹Singer, Peter. 2013. “The Founding Fathers' Fiscal Crisis.” *Project Syndicate*, October 2. <https://www.project-syndicate.org/commentary/peter-singerthe-constitutional-roots-of-america-s-fiscal-crisis> (December 12, 2019).

⁴²Savage, David G. 2011. “Justice Scalia: Americans ‘Should Learn to Love Gridlock.’ ” *Los Angeles Times*, October 5. <http://articles.latimes.com/2011/oct/05/news/la-pn-scalia-testifies-20111005> (February 14, 2019).

lature play a take-it-or-leave-it game over the amount of funds for policy implementation, and a representative voter chooses to either retain the incumbent president or replace the incumbent with a challenger after having observed the outcome of the implemented policy. There are two states of the world and all players are imperfectly informed about the true state of the world. There are two policy options, one of which is best carried out by the incumbent president (*the president's policy* in shorthand), while the other is best carried out by the challenger (*the challenger's policy* in shorthand). The likelihood of policy success is affected by the amount of funds. The necessary condition for policy success is the match between an implemented policy and the true state of the world.

A central finding is that separation of powers can prevent the incumbent's underfunding decision coming from electoral concerns during the policy implementation stage, thereby improving voters' welfare, but only under certain conditions under which the challenger is willing to provide sufficient funds to win the election. In other words, separation of powers can mitigate the malign effects of electoral competition, thereby helping electoral competition properly work to improve voters' welfare. Recognizing this mechanism through which separation of powers improves voters' welfare is a key contribution of the model to the literature. In addition, the model also revisits the welfare implications of a political stalemate. A political stalemate does not necessarily imply a dysfunctional government, and thereby welfare loss. The model shows that recognizing the motives behind a political stalemate is indispensable for knowing whether a political stalemate reduces or improves voters' welfare.

The key innovation of the model is to consider separation of powers in the strategic situations regarding funding decisions during the policy implementation stage. Replacing the status quo requires not only enacting a new policy in the legislative stage but also the effective implementation of it. In the policy implementation stage, separation of powers gives the power of the purse (i.e., the power to determine the amount of funds for implementing a

policy) to the legislature. Moreover, as in the legislative stage, the implementation of policy requires the consent from both bodies about the amount of funds. Hence, separation of powers creates a strategic situation in which the two bodies affect voters' welfare, which is measured in terms of the ex-ante expected utilities from the policy.

Electoral competition further complicates the two bodies' strategic considerations. Elections are a key mechanism through which voters can choose politicians who act in the best interests of voters. However, it is challenging for voters to make a correct decision because they are imperfectly informed about who the best candidate is. Under such imperfect information, voters use any information sources available to them to make more informed decisions, and policy outcomes are a good information source for this purpose. Based on this, it is natural to expect that reelection-minded policymakers consider not only the likelihood of policy success but also how the expected policy outcome affects their electoral prospects when they make policy decisions (see Dewan and Hortala-Vallve forthcoming).

How does separation of powers interact with electoral competitions? A simple and intuitive way to discover any welfare effects of separation of powers is to compare each level of voter welfare in the presence and absence of separation of powers. Let me present one example. Suppose that a voter believes that the president's policy is more likely to solve a national problem than the challenger's policy. Call the president is *popular* in such situations. The incumbent president will be reelected as long as the voter still deems the president's policy to be a correct solution after observing the policy outcome. Given this, the incumbent president faces a dilemma associated with the amount of funds. On one hand, the incumbent president may want to implement the president's policy with full funds to maximize the likelihood of policy success because it proves that the president's policy is indeed the correct one, which leads the voter to re-elect the incumbent president. In addition, the president can enjoy some utilities from the policy side.

On the other hand, as the amount of funds increases, the voter becomes more skeptical

about the president's policy if the policy outcome turns out to be a failure because blaming the lack of funds for failure is not convincing to the voter given the large amount of funds. In fact, if the amount of funds is sufficiently large and the policy fails, then the voter now believes that the challenger's policy is more likely to solve the problem, thereby replacing the incumbent president with the challenger. In other words, the voter will be *persuaded* by policy failure to change her choice from the incumbent president to the challenger.

Facing this dilemma, there are three motives for the incumbent president. First, the incumbent president may prefer full funds that maximize the likelihood of policy success because policy success guarantees both reelection and positive utilities from policy success, which I call *gambling on success*. Second, the incumbent president may prefer somewhat intermediate levels of funds to avoid possible persuasion after policy failure at the expense of maximization of the likelihood of policy success, which I call *playing safe*.⁴³ Finally, it is also possible that the incumbent president prefers not to implement any policy (through the formal veto power, delaying, or policy sabotage) if the incumbent president deeply fears the failure of the policy because a political stalemate does not provide any policy outcome that can be used by the voter to update her belief, thereby guaranteeing the incumbent president's reelection. Moreover, the incumbent president can avoid any negative utilities from policy failure as well. Although this can be considered an extreme case of playing safe, I call this *fear of failure* to emphasize that the incumbent president's fear of failure causes a political stalemate, while playing safe results in the implementation of the policy. Notice that a political stalemate can arise from another motive that the incumbent president does not have. For example, it is possible that the legislature does not provide any funds at all to block the implementation of a wrong policy, which resonates with Madison's original idea of checks and balances. This motive is clearly not associated with electoral concerns. To

⁴³I borrowed these terms (i.e., gambling on success (or failure) and playing safe) from Dewan and Hortala-Vallve (forthcoming).

emphasize this non-electoral origin of a political stalemate, I call this motive *checks and balances*.

If there is no separation of powers (e.g., a unified government), then the incumbent president can determine the amount of funds. Hence, the incumbent president's task is a simple optimization of the amount of funds. Below, I show that the optimal action for the incumbent president is to play safe if the probability that the president's policy matches the true state of the world is sufficiently large, and otherwise fear of failure leads the incumbent president to cause a political stalemate.

If there is separation of powers, however, the amount of funds is determined by the legislature. Consider the legislature controlled by the challenger's party, where the challenger can virtually decide the legislature's actions (i.e., a divided government). Note that the only way for the challenger to win the election is to persuade the voter to cast a vote for the challenger given the voter's initial belief that the president's policy is correct. This persuasion happens only after the implementation of the president's policy with a sufficiently large amount of funds turns out to be a failure.

If the challenger sufficiently cares more about office benefits than the utilities from the policy side, it is obvious that the challenger wants to decrease the likelihood of policy success as much as possible because the challenger needs policy failure to persuade the voter. Yet, at the same time, the challenger also must to provide sufficiently large funds so that the voter will not think that the failure of the president's policy comes from the lack of funds. This is not the end of the challenger's calculations. Separation of powers vests the power to carry out a policy in the executive, which implies that the challenger's grand plan to win the election is impossible unless the incumbent president actually chooses to carry out the president's policy. Therefore, the challenger must set the amount of funds to be large enough to entice the incumbent president into implementing the president's policy. Given this, it is optimal for the challenger to provide the minimal amount of funds that is sufficiently large to

persuade the voter after policy failure and to lead the president to implement the president's policy, which I call *gambling on failure*.

In this example, imposing separation of powers changes the holder of the purse, thereby changing the motive behind a funding decision, from playing safe to gambling on failure. Since gambling on failure leads to larger funds than playing safe, we see that separation of powers improves the voter's welfare. Overall, as shown in the example, separation of powers can improve the voter's welfare by giving the power of the purse to one whose motive behind a funding decision results in the implementation of a correct policy with larger funds.

In general, the voter's welfare increases as the motive behind a funding decision of the holder of the purse changes from playing safe to gambling on failure to gambling on success. Unfortunately, however, separation of powers does not always lead to a change of the motive in the direction that improves voters' welfare. To see why, consider another example in which the voter initially believes that the challenger's policy is the correct one. I say the challenger is *popular* in such situations. In this case, it is possible that the challenger wants to play safe, while the incumbent president is willing to gamble on failure. If this is the case, then it is obvious that the absence of separation of powers (i.e., giving the power of the purse to the incumbent president) improves the voter's welfare. Given these nuanced welfare effects of separation of powers, it is important to specify the conditions under which separation of powers leads to a change of the motive behind a funding decision in the direction that improves the voter's welfare, which will be presented in the remainder of this paper.

The above conclusion is valid only when a correct policy is implemented. Yet, it is possible that a wrong policy is implemented. Regarding this possibility, the model provides interesting welfare implications of a political stalemate. As introduced in the beginning of this paper, it is usually perceived that a political stalemate implies a dysfunctional government, and thereby welfare loss. However, the model clearly shows that a political stalemate does not necessarily imply welfare loss. The negative relationship between a political stale-

mate and the effectiveness of the government requires a strong assumption that a new policy always produces a better outcome than the status quo.⁴⁴ Yet, it is possible that a newly enacted policy produces a worse outcome than the status quo after its implementation.⁴⁵ In this case, a political stalemate actually improves the voter’s welfare by blocking the implementation of a wrong policy, which is often neglected but is the basic idea of Madisonian checks and balances (see Ethridge 2010; Kang 2017). Given this nuanced role of a political stalemate, the model presents a useful frame to differentiate a welfare-improving political stalemate from a welfare-losing political stalemate: the motive behind the observed political stalemate. The model demonstrates that a welfare-reducing political stalemate comes out of the fear of failure, while the motive of checks and balances leads to a welfare-improving political stalemate.

This paper is related to several streams of literature. The first stream of literature is about democratic accountability when multiple bodies’ consent is necessary to implement policy. Buisseret (2016) demonstrated the cases in which voters’ welfare is likely to be reduced by a veto player’s desire to build reputation through obstructing the implementation of policy in the presidential system. In extending Buisseret’s insight, Hirsch and Kastellec (2019) presented a theory of policy sabotage, in which a saboteur may block the implementation to signal the incumbent president’s type to the voter. While this paper also focuses

⁴⁴In fact, this strong assumption resonates with the Hobbesian view of the state of nature. To Hobbes, the state of nature is *bellum omnium contra omnes* (i.e. the war of all against all), which is the worst state. Therefore, having a strong and centralized government is always better even if the government can abuse power because any policy enacted and implemented by such a government will produce a better outcome than the state of war. According to the “two presidencies thesis” (Dahl 1950; Wildavsky 1966), this strong assumption is widely accepted regarding foreign policies, in particular, during wartime. This is because the president is assumed to have more information, and therefore, the president’s policy is more likely to be correct (Canes-Wrone et al. 2008; Howell et al. 2013). But there is no such a wide agreement about the assumption regarding domestic policies.

⁴⁵This view resonates with the Lockean view of the state of nature. To Locke, the state of nature is not necessarily the worst state because natural law exists even in the state of nature, which allows people to avoid a chaotic state. Therefore, government can be justified only if the outcome of having government is better than the state of nature, which allows the possibility that government may produce a worse outcome than the state of nature.

on the motive of blocking policy implementation with this paper, this paper emphasizes the incumbent's potential incentive for not implementing a policy for electoral purposes (e.g., unobservable policy sabotage), thereby examining the challenger's possible incentive to mitigate such a problem.

The second stream of literature is about the effects of separation of powers. One main theme of the literature is the effects of separation of powers on the extremity of policy. For example, Alesina and Rosenthal (1995, 1996, 2000) demonstrated that separation of powers leads to the moderation of policy. This paper departs by focusing on the effectiveness of policy implementation in terms of the amount of funds. Another main theme of the literature is whether separation of powers can mitigate or aggravate the principal-agent problem caused by asymmetric information. Persson et al. (1997) proposed the seminal model of separation of powers, which showed that separation of powers eliminates asymmetric information between elected politicians and voters, thereby preventing politicians' informational rent-seeking. Ting (2001) showed that asymmetric information and separation of powers creates the legislature's dilemma: whether to choose a good but wasteful policy or a bad but efficient policy. Gailmard (2017) presented the strategic foundation of separation of powers in America: solving the principal-agent problem between an imperial crown and colonial governors by giving power to colonial settlers whose interests are aligned with the imperial crown. The key departure of this paper from the literature is that there is no asymmetric information. This paper focuses on strategic motives behind funding decisions that affect common information shared by all players.

Such departure naturally connects this paper to the literature on policy reform or policy experimentation. Callander (2011a, 2011b) demonstrated the process of searching for a good policy under the common policy preferences setting, which is also used in this paper (see also Callander and Hummel 2014). There are models that analyze the effects of electoral pressures on policy reform. Majumdar and Mukand (2004) showed that a politician's

electoral concerns lead the politician to refrain from engaging in policy experimentation at the expense of information that the politician can learn through policy failure. Dewan and Hortala-Vallve (forthcoming) added the effects of the opposition's campaign to Majumdar and Mukand's model and showed that the opposition's campaign exacerbates the voters' welfare, which is also featured in Prato and Wolton (2016). In another work by Prato and Wolton (2018), implementing policy reform depends on the likelihood of the success of it and the degree of the demand for change. Although these studies nicely show how the incumbent's electoral concerns discourage the incumbent's engagement in policy reform, they do not consider the essential characteristics of separation of powers in which the opposition also actively engages in the policy implementation under separation of powers. This is the key departure of the model from the literature.

In this paper, the amount of funds is the key factor that affects voters' welfare. This aspect relates the paper to Millner et al. (2014), where the incumbent has an incentive to over-invest in a policy experiment to learn much information that will be passed to the future government. This paper extends the insight by Millner et al. by incorporating politicians' office motivation into the model. The persuasion effects after policy failure in the model relate this work to Hirsch (2016), where the principal defers to the agent's choice of the course of the policy experiment in expecting that the failure of the policy experiment will persuade the agent to agree and implement the course of the policy experiment chosen by the principal with a high effort level. While Hirsch's model focuses on an intra-organizational setting, this paper examines the persuasion effects in an inter-organizational setting where the two organizations compete in elections.

Finally, this paper contributes to the implementation research pioneered by Pressman and Wildavsky (1984), given that there are only a few studies that focus on variation in policy outcomes that come from different implementation outcomes (see Winter 2012). Specifically, following Bardach's (1977) view of policy implementation as a continuation of the political

game from the policy formation stage, in which various actors seek their interests in the implementation stage, this paper examines how separation of powers and competitive elections affect the actors' behaviors in policy implementation and thereby the outcome of the policy implementation.

4.2 The Model

There are three players: the incumbent president (P), a challenger (C), and a representative voter (V). Whether there is a separation of power or not, P chooses a policy to implement.⁴⁶ After that, the legislature determines the amount of funds. Under separation of powers, C decides the amount of funds to be provided for implementing the policy chosen by P . This assumes that the legislature is controlled by C 's party (i.e., a divided government), which is not a harmful assumption considering that a unified government where both the executive and legislature are controlled by P 's party is qualitatively equivalent to the setting where there is no separation of powers. If there is no separation of powers (i.e., a unified government), P determines the amount of funds. If no funds are provided at this stage, then there will be no implementation of the policy and the election follows. If a positive amount of funds was provided, then P must decide whether to implement the policy with the provided funds or to veto the implementation of the policy.⁴⁷ If P vetoes, then there is no policy implementation and the election follows. If P accepts, then the outcome of the

⁴⁶Although this assumption is inconsistent with the legislative power that is vested in the legislature, it does not cause a substantive change of the results because P has a final say in whether to implement a policy in the policy implementation stage. That is, if we modify the model to allow C to choose a policy instead of P , and if C 's choice is different from the equilibrium policy choice in the original model, then a political stalemate always arises, which makes the model less interesting. Moreover, this model captures the fact that the modern presidency in a large part drives the legislative agenda (Kernell 1997; Edwards and Wood 1999; Canes-Wrone 2001), and the president can unilaterally initiate a wide range of policies through the president's prerogatives (Moe and Howell 1999; Howell 2003; Howell et al. 2013).

⁴⁷The veto by P includes any type of P 's behavior that leads to the non-implementation of the policy, including but not limited to P 's formal veto on the legislature's appropriation bill or P 's policy sabotage or delay of the implementation, which leads the policy to remain on paper only, known as the implementation gap.

policy is realized and the election follows. In the election, the voter must decide whether to vote for P or C . Let $v \in \{P, C\}$ denote V 's choice in the election.

4.2.1 Policy Outcome

Let ω denote the state of the world, where there are two possible states of the world: $\omega \in \{p, c\}$. Let x denote a proposed policy to implement out of two policy options: $x \in \{p, c\}$. Let θ_x denote the common prior that x matches the true state of the world: $\theta_x = \Pr(x = \omega) \in (0, 1)$.

The outcome of x is determined as follows. If $x \neq \omega$, then x always fails. If $x = \omega$, there are other factors that affect the likelihood of the success of x : P 's competence and the amount of funds provided to implement x . First, in a similar vein of the issue ownership theory (Petrocik 1996), I assume that P is more competent in implementing p than C , while C is more competent in implementing c than P . Formally, the probability that c succeeds is discounted by $q_p \in (0, 1)$ if P implements c , while there are no such discounts if P implements p . Thus, the pre-funding probability of the success of p is θ_p , while the pre-funding probability of the success of c is $(1 - \theta_c)q_p = \theta_c q_p$.

Second, the amount of funds provided to implement x affects the probability of its success. Let $\epsilon \equiv \frac{1}{n}$, where n is a sufficiently large natural number. Let b_x denote the amount of funds for x , where $b_x \in B \equiv \{0, \epsilon, 2\epsilon, \dots, (n - 1)\epsilon, 1\}$.⁴⁸ Here, $b_x = 1$ indicates full funds, while $b_x = 0$ indicates no funds.⁴⁹ That is, the pre-funding probability of the success of x is discounted by $b_x \in B$ if $x = \omega$. Thus, the after-funding probability of the success of p is $b\theta_p$,

⁴⁸For a technical reason, I assume that B is a set of finite real numbers from 0 to 1. This assumption about B , however, does not change the key results of the paper, while it enables us to avoid the absence of an equilibrium amount of funds in some cases, which arises if we instead assume that B is the closed interval from 0 to 1.

⁴⁹Another interpretation is that $b_x = 1$ indicates all amounts of funds that are greater than or equal to a particular amount of funds that does not reduce the likelihood of policy success, while $b_x = 0$ indicates all fund amounts that are less than or equal to a particular amount of funds that necessarily cause policy failure.

while the after-funding probability of c is $b_c\theta_cq_p$, when P implements either policy. To avoid any confusion in terminology, hereafter, *appropriateness* refers to the pre-funding probability of the success of a certain policy and *likelihood* refers to the after-funding probability of the success of a certain policy.

4.2.2 Preferences

In terms of each player's policy preferences, both P and C care about policy benefits. Policy benefits consist of two parts: intrinsic and extrinsic policy benefits. Intrinsic policy benefits refer to policy benefits that are materialized by choosing one's preferred policy regardless of whether the chosen policy succeeds or fails. Intrinsic policy benefits can be interpreted as expressive benefits that can be gained by expressing one's ideology or identity by choosing a policy (Hillman 2010; Hamlin and Jennings 2011). I assume that p and c each gives the intrinsic benefits to P and C respectively.⁵⁰ In my model, only P can enjoy intrinsic policy benefits because P is the only agenda setter who can choose a policy.⁵¹ Let $\pi \in (0, 1)$ denote P 's intrinsic policy benefits from choosing p .⁵²

Extrinsic policy benefits, however, refer to policy benefits from the realized outcome of the implemented policy. Regarding extrinsic policy benefits, all players receive 1 if the implemented policy succeeds, and -1 if the implemented policy fails regardless of the identity of the policy. They receive 0 if no policy is implemented and the status quo remains. Let $y_x \in \{-1, 0, 1\}$ denote the materialized extrinsic policy benefits from policy x .

In addition to policy benefits, both P and C are assumed to be sufficiently office-

⁵⁰This is a natural assumption considering the issue ownership theory in the sense that one's superior competency in a particular policy comes from the preference for that policy.

⁵¹For this reason, I exclude C 's intrinsic policy benefits. Some readers might wonder if the results will be changed substantively if C also enjoys such intrinsic policy benefits by providing funds to its preferred policy. The only change by incorporating such intrinsic policy benefits for C is that C is more likely to provide full funds when C is popular because C 's electoral risk is offset by the intrinsic policy benefits, which does not substantively change the results. There is no change when P is popular. In this sense, my model is a more conservative setting for separation of powers to improve the voter's welfare.

⁵²Below, I discuss the role of π by showing what happens if $\pi \rightarrow 1$ or $\pi \rightarrow 0$

motivated. P receives $\alpha_p \in (2, \infty)$ if V reelects P , and 0 if V votes for C . Moreover, C receives $\alpha_c \in (2, \infty)$ only if V votes for the challenger (i.e., $v = C$), and 0 otherwise.⁵³ The utility function of P takes the following form:

$$U_p = y_x + \pi \cdot \mathbb{1}_\pi(x) + \alpha_p \cdot \mathbb{1}_p(v),$$

where

$$\mathbb{1}_\pi(x) = \begin{cases} 1 & \text{if } x = p, \\ 0 & \text{if } x \neq p, \end{cases} \quad \text{and } \mathbb{1}_p(v) = \begin{cases} 1 & \text{if } v = P, \\ 0 & \text{if } v = C. \end{cases}$$

Similarly, C 's utility function is:

$$U_c = y_x + \alpha_c \cdot \mathbb{1}_c(v),$$

where

$$\mathbb{1}_c(v) = \begin{cases} 1 & \text{if } v = C, \\ 0 & \text{if } v = P. \end{cases}$$

Finally, V cares about extrinsic policy benefits. In addition, V also enjoys some benefits $\beta \in \mathbb{R}_{++}$ if V elects a candidate whose valence is greater than the other candidate. Moreover, V uses the probability that a particular candidate's policy matches the true state of the world as the estimate of the candidate's valence. The interpretation is that V more highly values

⁵³If P and C are not sufficiently office-motivated, then the game is basically the same as a pure policy experiment in which C provides full funds to maximize the likelihood of the success of a correct policy, and P accepts to implement the correct policy with full funds.

the candidate whose competence is more appropriate to the real world. Since V votes after observing the policy outcome, V uses the posterior beliefs, denoted by θ_x^* , in the estimation. I assume that if both candidate's valence estimates are the same, V concludes that C 's valence is greater than P 's. Then, V 's utility function is

$$U_v = y_x + \beta \cdot \mathbb{1}_{\theta^*}(v),$$

where

$$\mathbb{1}_{\theta^*}(v) = \begin{cases} 1 & \text{if } v = i \text{ and } \theta_i^* > \frac{1}{2} \forall i \in \{P, C\}, \\ 1 & \text{if } v = C \text{ and } \theta_c^* = \frac{1}{2}, \\ 0 & \text{otherwise.} \end{cases}$$

4.3 No Separation of Powers

Since V cannot affect policy outcome, the optimal choice for V is to choose a candidate whose valence is greater than the other. This can be done by choosing P if $\theta_p^* > \frac{1}{2}$, and choosing C otherwise. Based on this optimal strategy for V , P can win the election if and only if $\theta_p^* > \frac{1}{2}$, while C can win the election if and only if $\theta_c^* \geq \frac{1}{2}$. Given this, the optimal strategies of P and C vary according to who is popular. Formally, P is popular when $\theta_p > \frac{1}{2}$, while C is popular when $\theta_c \geq \frac{1}{2}$. With this mind, we turn to the cases of no separation of powers, where P decides both x and b_x .

4.3.1 When P Is Popular

Recall that V will vote for P if no policy is implemented when P is popular (i.e., $\theta_p > \frac{1}{2}$). I begin the analysis with Lemma 1.

Lemma 1: P always chooses p if $\theta_p > \frac{1}{2}$.

All proofs are in the Appendix. Lemma 1 allows us to focus only on the case in which p is chosen by P . As mentioned earlier, V 's voting decision depends on the posterior belief.

Note that

$$\theta_p^* = \begin{cases} 1 & \text{if } y_p = 1, \\ \theta_p & \text{if } y_p = 0, \\ \frac{(1-b_p)\theta_p}{(1-b_p)\theta_p+(1-\theta_p)} & \text{if } y_p = -1. \end{cases}$$

From $\theta_p^* = \frac{(1-b_p)\theta_p}{(1-b_p)\theta_p+(1-\theta_p)} < \theta_p$, we see that V considers b_p when V updates the beliefs after the failure of p . Moreover, it is easy to see that θ_p^* decreases as b_p increases after the failure of p , which implies that, with a sufficiently large value of $b_p > 0$, V will believe that p is not correct if p fails (i.e., $\theta_p^* \leq \frac{1}{2}$). That is, if p fails despite sufficient funds, then V believes that p fails because of incorrect p , not because of insufficient funds. Let $\bar{b}_p \in (0, 1]$ denote a threshold value such that, given $\theta_p > \frac{1}{2}$, for all $b_p \in B$, $\frac{(1-b_p)\theta_p}{(1-b_p)\theta_p+(1-\theta_p)} \leq \frac{1}{2}$ if and only if $b_p \geq \bar{b}_p$. Call \bar{b}_p the *persuasion threshold for p* in the sense that the failure of p implemented with any $b_p \geq \bar{b}_p$ persuades V to believe that p is not correct.

Definition 1 (*Persuasion threshold for policy p*): $\bar{b}_p = 2 - \frac{1}{\theta_p}$ where $\theta_p > \frac{1}{2}$.

Recall that P is sufficiently office-motivated, which may lead P to avoid any electoral risks associated with implementing p by choosing $0 < b_p < \bar{b}_p$. (i.e., playing safe). By doing so, P can secure reelection even if p fails. Proposition 1 shows that such conjecture is indeed true, but only when p is appropriate enough for P to overcome P 's fear of failure (i.e., $\theta_p \geq \frac{3}{4}$). This condition comes from P 's minimally guaranteed utilities. That is, P can always gain $\alpha_p + \pi$ by choosing p but not implementing it. Therefore, P will implement p if and only if implementing p with $b_p < \bar{b}_p$ is expected to yield higher utilities than $\alpha_p + \pi$,

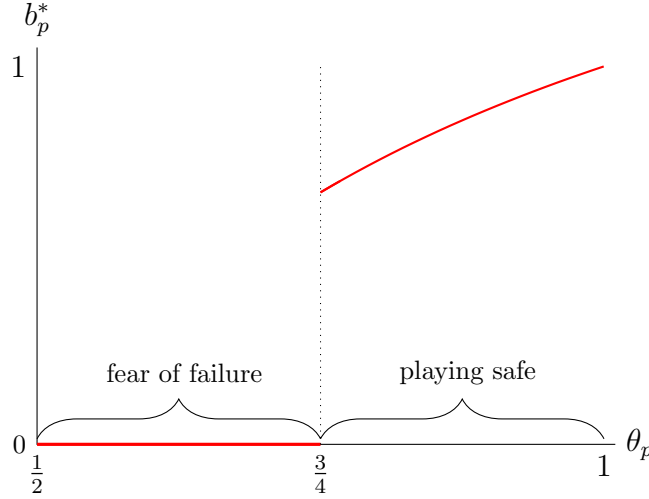


Figure 4.1: The equilibrium amount of funds b_p^* at each value of θ_p , where $\theta_p > \frac{1}{2}$, $\alpha_p = 2.3$. The motive behind the funding decision is specified in each region.

which holds if and only if $\theta_p \geq \frac{3}{4}$. Proposition 1 summarizes these results, which is visualized in Figure 1.

Proposition 1: *Suppose $\theta_p > \frac{1}{2}$ and there is no separation of powers.*

- (i) *If $\theta_p \geq \frac{3}{4}$, then P implements p with $b_p^* = \max\{b_p \in B | b_p < \bar{b}_p\}$.*
- (ii) *Otherwise, P chooses p but does not implement it.*

4.3.2 When C Is Popular

I turn to the cases in which C is popular (i.e., $\theta_c \geq \frac{1}{2}$). Recall that V will vote for C if no policy is implemented. Now, P 's competence in implementing c (i.e., q_p) affects the appropriateness of policy reform c . We can find a threshold value $\bar{b}_c \in (0, 1]$ such that the failure of c implemented with any $b_c > \bar{b}_c$ leads V to believe that c is not correct. Call such \bar{b}_c the *persuasion threshold* for c .

Definition 2 (*Persuasion threshold for policy c*): $\bar{b}_c = \frac{2\theta_c - 1}{\theta_c q_p}$.

If q_p is sufficiently low (i.e., $q < 2 - \frac{1}{\theta_c}$), V always attributes the failure of c to P 's

incompetence, which implies that V will vote for the challenger regardless of the outcome of c . Proposition 2 states the optimal strategy for P in such cases in which P is sufficiently incompetent in implementing c .

Proposition 2: *Suppose that there is no separation of powers. Suppose $\theta_q \leq \frac{1}{2}$ and $q_p < 2 - \frac{1}{\theta_c}$.*

- (i) *If $\theta_c \leq \frac{1+\alpha_p}{2+\alpha_p}$, then P implements p with full funds.*
- (ii) *If $\theta_c > \frac{1+\alpha_p}{2+\alpha_p}$ and $\theta_c q_p \geq \frac{1+\pi}{2}$, then P implements c with full funds.*
- (iii) *Otherwise, P chooses p but does not implement it.*

Proposition 2 generally states that P always provides $b_x = 1$ once P decides to implement either policy (i.e., gambling on success). This is because P does not have any electoral risks associated with implementing any policy. As captured in the first part of Proposition 2, P may see that p is sufficiently appropriate to implement. In this case, the failure of p does not cause any additional damage to P 's electoral prospects because P is doomed to lose the election if no policy is implemented. Moreover, if p succeeds, then P can gain not only policy benefits but also office benefits because the success of p will persuade V to vote for P . Therefore, gambling on success with p is optimal for P .

Similarly, the second part of Proposition 2 states that if P sees that c is more appropriate than p in terms of achieving success, then gambling on success with c is optimal for P . Since the failure of c does not change V 's voting decision, P does not gain anything from the failure of c . Hence, the only way for P to maximize utilities is to increase the likelihood of the success of c by providing $b_c = 1$.

The third part of Proposition 2 depicts the cases in which neither p nor c is appropriate enough for P to overcome his fear of failure. In such cases, P chooses p but refrains from implementing it. This is because P can gain the intrinsic policy benefits but also safely abort

its implementation.⁵⁴ This case is somewhat interesting because we see that P refrains himself from implementing the wrong policy from V 's perspective even if there is no separation of powers.

Now, consider the cases in which P 's competence q_p is sufficiently high (i.e., $q_p \geq 2 - \frac{1}{\theta_c}$). With sufficient funds, the failure of c now persuades V that p is correct, which leads V to vote for P .

Proposition 3: *Suppose that there is no separation of powers. Suppose $\theta_p \leq \frac{1}{2}$ and $q_p \geq 2 - \frac{1}{\theta_c}$.*

- (i) *If $\alpha_p < 2 + 2\pi$ and $\theta_c < \frac{\pi+4-\alpha_p}{6-\alpha_p}$, then P implements p with full funds.*
- (ii) *Otherwise, P implements c with $b_c^* = \min\{b_c \in B | b_c > \bar{b}_c\}$.*

The first part of Proposition 3 states that if P 's office-motivation is moderate and the appropriateness of p is sufficiently high, then P implements p with full funds to maximize the likelihood of the success of p . That is, P gambles on success with p . In particular, it is easy to see that P 's gambling on success with p will be more likely to happen as the intrinsic policy benefits of P (i.e., π) becomes greater than the given α_p .

Notice that the second part of Proposition 3 states that P 's strong office-motivation leads P to gamble on failure with c , that is, P always implements c with the minimum amount of funds that leads to the persuasion after the policy failure if P sufficiently cares about reelection (i.e., $\alpha_p \geq 2 + 2\pi$). Since P gambles on failure, P wants to decrease the likelihood of the success of c as much as possible by reducing the amount of funds but also at the same time P must provide more than \bar{b}_c to persuade V after the failure of c . Such gambling on failure by P still prevails even if P is somewhat moderately office-motivated (i.e., $\alpha_p < 2 + 2\pi$), but the likelihood of the success of p is too low (i.e., $\theta_p \leq \frac{2-\pi}{6-\alpha_p}$ or,

⁵⁴This case may capture P 's delaying or sabotage on the implementation of p rather than the unnatural situation where P proposes funds and vetoes P 's own proposal.

Appropriateness	Optimal policy	Optimal amount of funds	Optimal welfare level
$\theta_p > \frac{1}{2}$ and $\theta_c q_p < \frac{1}{2}$	p	1 (full funds)	$2\theta_p - 1$
$\theta_p \leq \frac{1}{2}$ and $\theta_c q_p \geq \frac{1}{2}$	c	1 (full funds)	$2\theta_c q_p - 1$
$\theta_p \leq \frac{1}{2}$ and $\theta_c q_p < \frac{1}{2}$	political stalemate	0 (no funds)	0

Table 4.1: The optimal policy to implement, optimal amount of funds, and consequent optimal welfare level of V given the appropriateness of each policy

equivalently, $\theta_c \geq \frac{4-\alpha_p+\pi}{6-\alpha_p}$). That is, it is easier for P to show the failure of c than the success of p . We are now ready to examine the consequences of P 's optimal choices on V ' welfare.

4.4 The Voter's Welfare without Separation of Powers

It is natural to measure V 's welfare in terms of her ex-ante expected benefits from a certain policy, which is determined by the likelihood of the success of the policy. Given this, a policy that is considered more appropriate by V should be implemented to maximize V 's welfare. However, even if a certain policy is deemed more appropriate by V , it is better not to implement any policy than to implement the more appropriate policy if the appropriateness of the more appropriate policy is not sufficiently high. Therefore, to maximize V 's welfare, p should be implemented only if $\theta_p > \frac{1}{2}$, while c is implemented only if $\theta_c q_p \geq \frac{1}{2}$. The additional requirement for maximizing V is that a policy that meets the first two requirements must be implemented by full funds. Table 1 shows the optimal policy to implement, optimal amount of funds, and consequent optimal welfare level of V given the appropriateness of each policy.

Then, there are three types of the sub-optimality according to its origin. First, sub-optimality can be caused by underfunding the optimal policy. Call this an *underfunding* sub-optimality. The second type of sub-optimality is the result of implementing a wrong policy that is different from the optimal policy choice (including non-implementation) from V 's perspective. Call this a *wrong-policy* sub-optimality. Third, sub-optimality can be caused by a political stalemate when the implementation of a correct policy with full funds

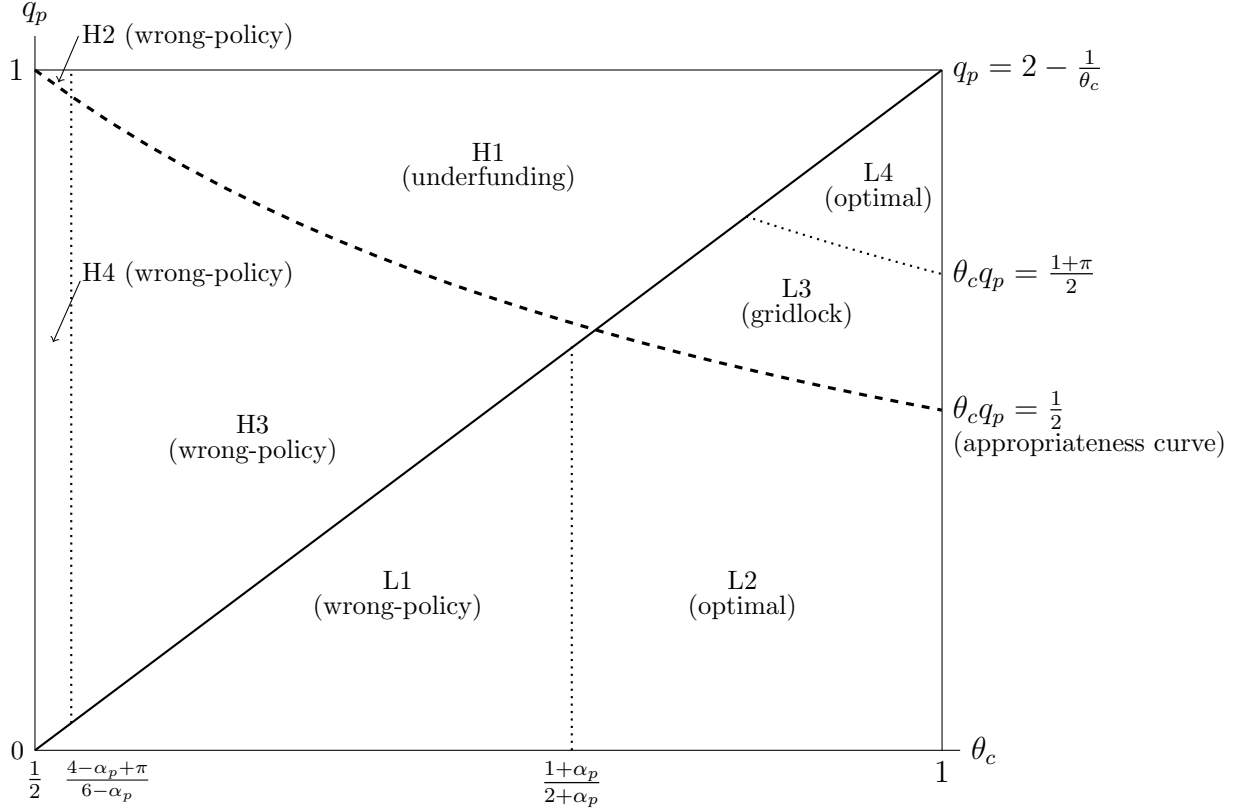
is optimal for V , which I call a *gridlock* sub-optimality.

4.4.1 When P Is Popular

When P is popular, the absence of separation of powers causes either a gridlock or an underfunding sub-optimality according to the appropriateness of p . When $\theta_p < \frac{3}{4}$, P does not implement p because of P 's fear of failure, which results in a gridlock sub-optimality. When $\theta_p \geq \frac{3}{4}$, P 's electoral concerns drive P to play safe to avoid the electoral risks associated with implementing p , which causes an underfunding sub-optimality. Although P and V 's preferences are aligned in terms of policy choice and, therefore, there is no problem of the abuse of powers by P in choosing a wrong policy, electoral competition ironically leads P to under-fund, thereby reducing V 's welfare.

4.4.2 When C Is Popular

In the cases in which C is popular, Figure 2 is a typical example that visualizes Propositions 2 and 3. In the area below the thick diagonal line that represents all points where $q_p = 2 - \frac{1}{\theta_r}$, and there is no persuasion after the failure of c regardless of the amount of funds due to P 's sufficiently low competency. The area above the same line represents the cases where the failure of c can persuade V if c was implemented with funds greater than the persuasion threshold for c . The dashed curve represents all points where $\theta_c q_p = \frac{1}{2}$, which I call the *appropriateness curve* for c . As shown in Table 1, V 's welfare is maximized by implementing c with full funds in the area above and on the appropriateness curve, while the optimal level of V 's welfare can be achieved by non-implementation of any policy (i.e., a political stalemate) in the area below the appropriateness curve. Then, we can see how the equilibrium pairs of the implemented policy and the amount of funds in various cases we specified in Proposition 2 and 3 affect V 's welfare, as described in different subregions in Figure 2 from L1 to H4.



The motive behind the funding decision (the equilibrium amount of funds):

- | | |
|--|--|
| L1: Gambling on success with p ($b_p^* = 1$) | H1: Gambling on failure with c ($b_c^* = \min\{b_c \in B b_c > \bar{b}_c\}$) |
| L2: Fear of failure (political stalemate) | H2: Gambling on success with p ($b_p^* = 1$) |
| L3: Fear of failure (political stalemate) | H3: Gambling on failure with c ($b_c^* = \min\{b_c \in B b_c > \bar{b}_c\}$) |
| L4: Gambling on success with c ($b_c^* = 1$) | H4: Gambling on success with p ($b_p^* = 1$) |

Figure 4.2: Welfare of V when C is popular (i.e., $\theta_c \geq \frac{1}{2}$) without separation of powers (setting $\alpha_p = 2.7$ and $\pi = 0.4$). The dashed curve represents the appropriateness curve (i.e., all points where $\theta_c q_p = \frac{1}{2}$). The thick diagonal line represents all points where $q_p = 2 - \frac{1}{\theta_c}$.

Let me turn to the region below the thick diagonal line in Figure 2, in which the failure of c never persuades V because of P 's incompetency in implementing c . Recall that the only way for P to win the election is to show the success of p , not to show the failure of c in this case. This region is partitioned into the four subregions, labeled from L1 to L4.

Notice that two subregions (i.e., L1 and L2) are located below the appropriateness curve, which implies that the optimal welfare can be achieved only by political stalemate (i.e., non-implementation) in these subregions. Among these two subregions, the optimal level of V 's

welfare is attained only in L2. In L2, P certainly knows that what makes c inappropriate to implement is not c 's low probability of being correct but P 's incompetency, which implies that the probability that p succeeds is also very low. Given this, P knows that the chances for re-election through the success of p are very slim, which leads P to focus on policy benefits. Since the appropriateness of p is not high enough for P to overcome the fear of failure, P chooses p but does not implement it.

Yet, this logic also implies that P would be willing to implement p to show its success, thereby winning the election, if the probability of p is somewhat high. Of course, P will provide full funds to maximize the likelihood of the success of p because P gambles on success in this case. This is why the wrong-policy sub-optimality arises in L1. Moreover, we see that the border between L1 and L2 moves toward 1 as P 's office-motivation increases (i.e., $\lim_{\alpha_p \rightarrow \infty} \frac{1+\alpha_p}{2+\alpha_p} = 1$), which means a higher θ_c is required to eliminate P 's fear of failure that causes the wrong-policy sub-optimality as P becomes more strongly office-motivated. This clearly shows the cases in which electoral competition actually reduces V 's welfare.

In contrast to L2, we see that a political stalemate causes the gridlock sub-optimality in L3. Since L3 is above the appropriateness curve, the optimal level of V 's welfare can be attained by implementing c with full funds. However, P 's fear of failure leads P to seek the guaranteed intrinsic policy benefits from p (i.e., π) from a political stalemate rather than to seek the uncertain extrinsic policy benefits from c . Notice that the political stalemate and its consequent gridlock sub-optimality is not caused by P 's electoral concerns or the absence of separation of powers. Rather, it is caused by the existence of π that requires c to be more appropriate (i.e., $\theta_c q_p \geq \frac{1+\pi}{2}$) for P to overcome his fear of failure. Below, I show that imposing separation of powers cannot address this gridlock sub-optimality. The only way to mitigate the sub-optimality is to reduce π , because, as shown in Figure 2, L3 shrinks as P 's intrinsic policy benefits from p decreases. In other words, the border between L3 and L4 moves closer to the appropriateness curve as π decreases (i.e., $\lim_{\pi \rightarrow 0} \frac{1+\pi}{2} = \frac{1}{2}$).

Finally, we see that V 's welfare is maximized in L4. Moreover, V 's welfare level here is greater than the optimal level attained in L2 (see Table 1). One immediate implication from this observation is that achieving the highest welfare level requires a sufficiently high appropriateness of c (i.e., $\theta_c q_p \geq \frac{1}{2}$), which leads P to overcome the fear of failure. This, in turn, naturally leads P to gamble on success with c , which results in the optimal welfare level.

Next, In the area above the thick diagonal line in Figure 2, P is sufficiently competent in implementing c . Recall that P now can win by showing either the success of p or the failure of c implemented with sufficiently large funds. As shown in Figure 2, P sees that showing the failure of c is easier than the success of p in most cases (i.e., H1 and H3) because the appropriateness of c will be discounted by P 's incompetency in implementing c . In addition, P can discount the appropriateness of policy more by providing somewhat little funds. Such gambling on failure with c by P results in suboptimal welfare levels in both H1 and H3. However, the type of the sub-optimality in each subregion is different. While there is an underfunding sub-optimality in H1 because V 's welfare can be maximized by implementing c with full funds, there is a wrong-policy sub-optimality in H3 because non-implementation is the only way to attain the optimal welfare level. Again, these two cases also clearly show that P 's electoral concerns produce harmful effects on V 's welfare.

Finally, H2 and H4 show that π leads P to gamble on success with p if P is not sufficiently office-motivated (i.e., $\alpha_p \leq 2 + 2\pi$), which causes a wrong-policy sub-optimality in those subregions. To see why, notice that H2 and H4 will disappear if there are no intrinsic policy benefits from p (i.e., if $\pi = 0$, then $\frac{4-\alpha_p+\pi}{6-\alpha_p} < \frac{1}{2}$ and $\alpha_p > 2 + 2\pi$). However, even if P cannot gain any intrinsic policy benefits from p , the optimal level of V 's welfare is not achieved because H2 and H4 will be merged respectively to H1 and H3.

Overall, we see that there are several subregions in which a suboptimal welfare level is attained. To obtain the optimal welfare level, a political stalemate (i.e., non-implementation)

is necessary in H3, H4, and L1, while c should be implemented with full funds in H1, H2, and L3 in Figure 2. Naturally, we may ask if imposing separation of powers can lead to such changes in funding decision, thereby improving V 's welfare, which is examined now.

4.5 Imposing Separation of Powers

The only change in the model caused by imposing separation of powers is that C now determines the amount of funds, which renders the model into a take-it-or-leave-it game between C and P . Recall that the optimal strategy for V is to vote for P if $\theta_p^* > \frac{1}{2}$, and for C otherwise.

4.5.1 When P Is Popular

Lemma 1 allows us to focus only on C 's funding decision after p is chosen by P . When P is popular, the only way for C to win the election is to gamble on failure with p , that is, showing the failure of p , thereby persuading V to vote for C . Therefore, the first condition for C 's electoral victory is, of course, the failure of p , which makes C want to provide as little funds as possible to minimize the likelihood of the success of p . Yet, at the same time, C must provide at least as much funds as the persuasion threshold for p . Furthermore, C also provides funds that are large enough for P to overcome the fear of failure, thereby implementing p . This is because P does not need to implement p to win the election. That means, P implements p as long as the likelihood of the success of p is high enough to overcome P 's fear of failure. Lemma 2 states P 's optimal strategy.

Lemma 2: *Suppose that there is separation of powers. Suppose $\theta_p > \frac{1}{2}$.*

- (i) *If $b_p \geq \bar{b}_p$, then P implements p if and only if $\theta_p \geq \frac{1+\alpha_p}{2+\alpha_p}$ and $b_p \geq \frac{1+\alpha_p}{(2+\alpha_p)\theta_p}$.*
- (ii) *If $b_p < \bar{b}_p$, then P implements p if and only if $\frac{3}{4} \leq \theta_p < \frac{1+\alpha_p}{2+\alpha_p}$*

(iii) *Otherwise, P chooses p but does not implement it regardless of b_p .*

The first part of Lemma 2 states that P is willing to implement p despite the electoral risks associated with its implementation only when the appropriateness of p is sufficiently high, and the amount of funds is sufficiently large. If p is not sufficiently appropriate, P will not implement p if there are electoral risks associated with its implementation (the second part of Lemma 2), or P will not implement p whatsoever regardless of the amount of funds (the third part of Lemma 2). Given such P 's optimal strategy, C will choose the optimal decision, which, in turn, determines the equilibrium outcome.

Proposition 4: *Suppose that there is separation of powers. Suppose $\theta_p > \frac{1}{2}$.*

- (i) *If $\theta_p \geq \frac{1+\alpha_p}{2+\alpha_p}$, then p is implemented with $b_p^* = \min\{b_p \in B | b_p \geq \max\{\bar{b}_p, \frac{1+\alpha_p}{(2+\alpha_p)\theta_p}\}\}$.*
- (ii) *If $\frac{3}{4} < \theta_p < \frac{1+\alpha_p}{2+\alpha_p}$, then p is implemented with $b_p^* = \max\{b_p \in B | b_p < \bar{b}_p\}$.*
- (iii) *If $\theta_p \leq \frac{3}{4}$, then p is chosen by P but never implemented.*

The first part of Proposition 4 describes the equilibrium outcome where C gambles on failure with p . In this case, C must provide the minimal funds sufficient to persuade V after the failure of p and to leads P to implement p , that is, $b_p^* = \min\{b_p \in B | b_p \geq \max\{\bar{b}_p, \frac{1+\alpha_p}{(2+\alpha_p)\theta_p}\}\}$. The second part of Proposition 4 states that C 's optimal funding decision is to provide funds less than the persuasion threshold for p when $\frac{3}{4} \leq \theta_p < \frac{1+\alpha_p}{2+\alpha_p}$. In this case, P 's firm decision to play safe forces C to give up any attempt to affect C 's electoral prospects through policy outcome. However, unlike the third case of Proposition 4 where P does not implement p whatsoever, P is now open to implementing p if there are no electoral risks associated with its implementation. Since C also believes that p is correct, C wants to provide funds that leads P to implement p , that is, $b_p < \bar{b}_p$. Moreover, since extrinsic policy benefits from the success of p is the only way for C to gain positive utilities, C now wants to maximize the likelihood of the success of p . Therefore, the equilibrium amount of funds determined by

C is $b_p^* = \max\{b_p \in B | b_p < \bar{b}_p\}$. Finally, the third part of Proposition 4 depicts the case in which the appropriateness of c is not enough to lead P to overcome the fear of failure, therefore, P does not implement p regardless of b_p .

4.5.2 When C Is Popular

In the cases in which C is popular, $\theta_c \geq \frac{1}{2}$. Recall that P can win the election by showing either the success of p or the failure of c . However, C does not have any incentive to implement p because there is no need to persuade V by showing the failure of p . Moreover, C wants to block the implementation of p because it is wrong.

Lemma 3: *Suppose that there is separation of powers. C always blocks p (i.e., $b_p^* = 0$) if P chooses p .*

Lemma 3 states that C will block p in the sense of Madisonian checks and balances. The immediate implication from Lemma 3 is that P 's choices are reduced to whether to choose c and implement it or to choose p that will be blocked by C , which means that P cannot affect his electoral prospects by showing the success of p . Therefore, P chooses p if and only if P sees c is not likely to succeed. As in the previous section, the likelihood of the success of c is affected by P 's competency in handling c .

Consider the cases in which P 's competence is so low that the failure of c does not persuade V to vote for P (i.e., $q_p < 2 - \frac{1}{\theta_c}$).

Proposition 5: *Suppose that there is separation of powers. Suppose $\theta_c \geq \frac{1}{2}$ and $q_p < 2 - \frac{1}{\theta_c}$.*

- (i) *If $\theta_c q_p \geq \frac{1+\pi}{2}$, then C provides full funds and P chooses and implements c .*
- (ii) *Otherwise, P chooses p and C blocks it (i.e., $b_c^* = 0$).*

The intuition behind Proposition 5 is as follows. Since C does not have any electoral risks associated with the implementation of c , C 's funding decision is basically the same as the

pure policy experiment in which only the appropriateness of c matters (i.e., $\theta_r q_p$). Thus, it is in C 's best interest to provide full funds to c if the appropriateness of c is at least $\frac{1}{2}$. Meanwhile, there is no way for P to avoid his electoral defeat because the failure of c does not persuade V and P cannot show the success of p by Lemma 3. Hence, if P wants to implement c , then P prefers full funds because the success of c is the only way for P to gain positive utilities. Therefore, c will be implemented with full funds. The question here is regarding when P prefers the implementation of c . The expected utilities from implementing c with full funds is greater than or equal to π if $\theta_r q_p \geq \frac{1+\pi}{2}$. Therefore, P chooses and implements c with full funds if $\theta_r q_p \geq \frac{1+\pi}{2}$, while P seeks the intrinsic policy benefits from choosing p otherwise.

Next, I examine the cases in which P 's competence in implementing c is sufficiently high so that P can win the election by showing the failure of c . There are electoral risks associated with the implementation of c for C if the amount of funds is greater than the persuasion threshold of c .

Proposition 6: *Suppose that there is separation of powers. Suppose $\theta_c \geq \frac{1}{2}$ and $q_p \geq 2 - \frac{1}{\theta_c}$.*

- (i) *If $\theta_c \geq \frac{3+\pi}{4}$, then c is implemented with $b_c^* = \max\{b_c \in B | b_c \leq \bar{b}_c\}$.*
- (ii) *If $\theta_c < \frac{3+\pi}{4}$ and $\theta_c q_p \geq \frac{1+\alpha_c}{2+\alpha_c}$, then C provides full funds and P chooses and implements c .*
- (iii) *Otherwise, P chooses p and C blocks it (i.e., $b_c^* = 0$).*

The first part of Proposition 6 describes C 's choice of playing safe with c due to the electoral risks associated with its implementation. That is, C wants to implement c with the largest amount of funds that does not lead the failure of c to persuade V . Yet, again, C must entice P into implementing c with the chosen amount of funds. Although the amount of funds is not large enough for the failure of c to persuade V , it is still better than non-implementation for P to implement c as long as the amount of funds is greater than or equal

to $\frac{1+\pi}{2\theta_c q_p}$. Hence, C can play safe as long as the following inequality holds: $\frac{1+\pi}{2\theta_c q_p} \leq \bar{b}_c$, which requires that $\theta_c \geq \frac{3+\pi}{4}$. Therefore, the optimal choice of C is to play safe when $\theta_c \geq \frac{3+\pi}{4}$, that is, choosing $b_c^* = \max\{b_c \in B | b_c \leq \bar{b}_c\}$.

The second part of Proposition 6 is where C cannot play safe but the likelihood of the success of c is high enough for C to gamble on success with c if full funds are provided. In such cases, the appropriateness of c is already so high that P sees that showing the failure of c is unlikely. However, as shown in Proposition 3, it is still better for P to gamble on failure with c than to satisfy with the intrinsic policy benefits from p . Therefore, P is also willing to gamble on failure with c with full funds. Finally, the last part of Proposition 6 describes the cases in which C prefers a political stalemate to the implementation of c with any amount of funds, in which C 's fear of failure leads C to block any policy by providing no funds. Knowing this, it is optimal for P to choose p because P can gain the intrinsic policy benefits by doing so.

4.6 Welfare Effects of Separation of Powers

In this section, I present V 's welfare under separation of powers. It would be a more efficient and natural way to present the results by focusing on how separation of powers changes V 's welfare under the setting without separation of powers.

4.6.1 When P Is Popular

In the cases in which P is popular, Figure 3 visualizes Propositions 1 and 4. The red dashed line represents the equilibrium amounts of funds when there is no separation of powers (i.e., Proposition 1), while the blue line represents the equilibrium amounts of funds when there is separation of powers (i.e., Proposition 4). When the appropriateness of p is sufficiently large (i.e., $\theta_p \geq \frac{3}{4}$), p is implemented with larger funds when there is separation of powers. In this

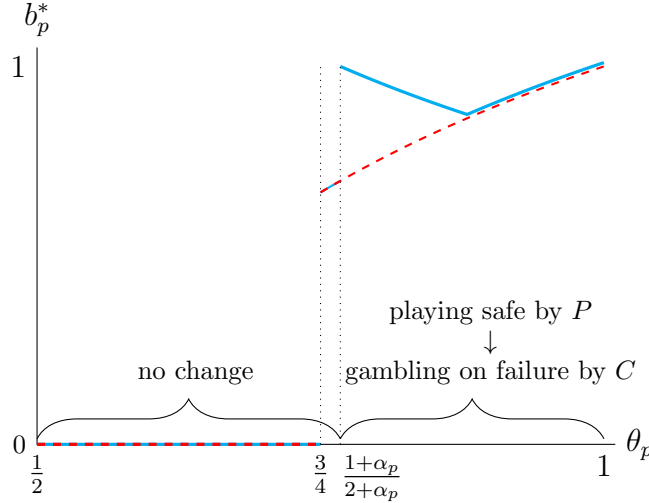


Figure 4.3: The equilibrium amounts of funds b_p^* at each value of θ_p , where $\theta_p > \frac{1}{2}$, $\alpha_p = 2.3$. The red dashed line represents the equilibrium amounts of funds when there is no separation of powers. The blue line represents the equilibrium amounts of funds when there is separation of powers. The change in the motive behind the funding decision is specified in each region.

case, separation of powers improves V 's welfare by moving the power of the purse from P , who wants to play safe to avoid the electoral risks, to C , who is willing to gamble on failure with p to win the election. In other words, this result clearly demonstrates that separation of powers can improve V 's welfare by mitigating the malign effects of electoral competition (i.e., underfunding), which is an obviously different mechanism from Madisonian checks and balances such as blocking a wrong policy. In particular, we see that separation of powers attains the optimal level of V 's welfare when $\theta_p = \frac{1+\alpha_p}{2+\alpha_p}$, which maximizes the gap between the two equilibrium amounts of funds. This is because only full funds can lead P to overcome the fear of failure when the appropriateness of p is on P 's appropriateness cutoff point (i.e., $\frac{1+\alpha_p}{2+\alpha_p}$), which, in turn, leads C to provide full funds.

However, such welfare improvement by separation of powers is not universal. As shown in Figure 3, separation of powers cannot improve V 's welfare when $\theta_p < \frac{1+\alpha_p}{2+\alpha_p}$. Moreover, p is implemented with the same amount of funds is provided when $\frac{3}{4} \leq \theta_p < \frac{1+\alpha_p}{2+\alpha_p}$ because C is forced to play safe to entice P into implementing p . No policy is implemented when

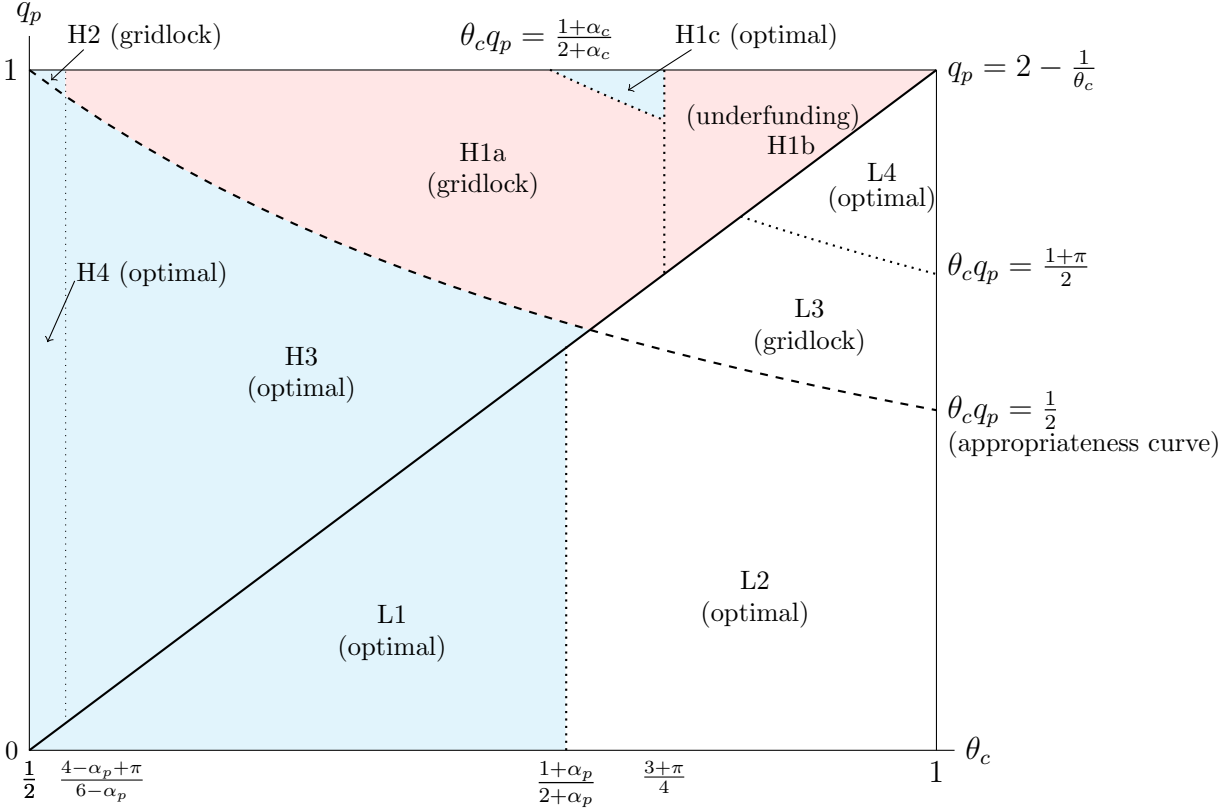
$\theta_p < \frac{3}{4}$, which means that separation of powers cannot eliminate P 's fear of failure, thereby causing a political stalemate. In addition, we see that the region where separation of powers improves V 's welfare shrinks as P becomes more office-motivated (i.e., as α_p increases).

4.6.2 When C Is Popular

In the cases where C is popular, Figure 4 visualizes Propositions 2, 3, 5, and 6. The blue subregions (i.e., H1c, H2, H3, H4, and L1) represent where separation of powers improves V 's welfare. The red subregions (i.e., H1a and H1b) represent where separation of powers reduces V 's welfare. The white subregions (i.e., L2, L3, and L4) represent where separation of powers does not change V 's welfare. Recall that the optimal level of V 's welfare can be maximized by doing nothing when P is not sufficiently competent in implementing c (i.e., the area below the appropriateness curve in Figure 4). Given this, the most notable change caused by separation of powers is that C blocks the implementation of p (i.e., L1, L2, H3, and H4), thereby attaining the optimal level of V 's welfare. Consequently, we see welfare improvement in L1, H3, and H4, which is consistent with the basic idea of separation of powers: checks and balances.

Regarding such a welfare-improving political stalemate, the interesting case arises in H2. Since H2 is above the appropriateness curve, V 's welfare can be optimized by implementing c with full funds. Yet, P 's choice of p makes it impossible. Given this, the best way to increase V 's welfare is simply to block the implementation of p . Therefore, although the government appears to be dysfunctional in the sense that it fails to implement the correct policy (i.e., c) on its face, it would be premature to conclude so because the worst outcome (i.e., implementing p with full funds) is avoided by a political stalemate.

In the area above the appropriateness curve, V 's welfare can be optimized by implementing c with full funds. This area, which is equivalent to H1 under no separation of powers, is now partitioned into three subregions: H1a, H1b, and H1c. First, separation of powers



The change of the motive behind the funding decision (the equilibrium amount of funds):

- L1: Gambling on success with p ($b_p^* = 1$) → Checks and balances (political stalemate)
- L2: Fear of failure (political stalemate) → Checks and balances (political stalemate)
- L3: Fear of failure (political stalemate) → Checks and balances (political stalemate)
- L4: Gambling on success with c ($b_c^* = 1$) → Gambling on success with c ($b_c^* = 1$)
- H1: Gambling on failure with c ($b_c^* = \min\{b_c \in B | b_c > \bar{b}_c\}$)
 - Fear of failure (political stalemate) in H1a
 - Playing safe with c ($b_c^* = \max\{b_c \in B | b_c \leq \bar{b}_c\}$) in H1b
 - Gambling on success with c ($b_c^* = 1$) in H1c
- H2: Gambling on success with p ($b_p^* = 1$) → Checks and balances (political stalemate)
- H3: Gambling on failure with c ($b_c^* = \min\{b_c \in B | b_c > \bar{b}_c\}$)
 - Checks and balances (political stalemate)
- H4: Gambling on success with p ($b_p^* = 1$) → Checks and balances (political stalemate)

Figure 4.4: Example of V 's welfare changes caused by imposing separation of powers when C is popular (setting $\alpha_p = 2.7$ and $\pi = 0.4$). The blue regions represent where separation of powers improves V 's welfare. The red regions represent where separation of powers reduces V 's welfare. The white regions represent where separation of powers does not change V 's welfare. The change of the motive behind the funding decision and its consequent equilibrium amount of funds is written in blue if there is welfare improvement, in red if there is welfare loss, and in black if there is no welfare change.

causes the gridlock sub-optimality in H1a, which worsens V 's welfare. Although it seems that C justifiably blocks P 's wrong choice of p on its face, the blame for the political stalemate should go to C , not P . That is, knowing that C 's fear of failure leads C to block the implementation of any policy, P chooses p to gain the intrinsic policy benefits from p . In fact, P would gamble on failure with c if it were not for separation of powers, as shown in Proposition 3. Hence, unlike H2 in which a political stalemate improves V 's welfare, a political stalemate in H1a indicates a dysfunctional government, thereby welfare loss.

Separation of powers worsens V 's welfare in H1b, too. In this subregion, C 's responsibility for the welfare loss appears more clearly because the welfare loss is the direct consequence of the change of the motive behind the funding decision: from P 's gambling of failure to C 's playing safe. Overall, both H1a and H1b clearly demonstrate that separation of powers aggravates the malign effects of electoral competition on V 's welfare rather than mitigating them.

Then, when does separation of powers mitigate the malign effects of electoral competition? In H1c, separation of powers improves V 's welfare up to the optimal level. More specifically, separation of powers changes the motive behind the funding decision from P 's gambling on failure to C 's gambling on success with c . Notice that P gambles on failure with c in H1c. As such, separation of powers and both parties' electoral motivations work together to attain the optimal level of V 's welfare by leading both C and P to be willing to gamble on different sides of a policy outcome: success for C and failure for P .

In addition, we see that H1c expands toward 1 as P 's intrinsic policy benefits π increases (i.e., $\lim_{\pi \rightarrow 1} \frac{3+\pi}{4} = 1$), while another optimal subregion L4 shrinks as π increases (i.e., $\lim_{\pi \rightarrow 1} \frac{1+\pi}{2} = 1$). This suggests an interesting role of P 's fear of failure in improving V 's welfare. Notice that π is positively related to the magnitude of P 's fear of failure. If π increases, then P 's fear of failure increases, which requires a higher likelihood of the success of c for P to overcome the fear of failure. Since full funds are already provided in L4, the only way

to compensate for P 's increased fear of failure is to increase the appropriateness of c . This is why L4 shrinks as π increases. However, in H1b, C is providing funds in an amount that is less than the persuasion threshold for c , which implies that C can provide larger funds to compensate for the increase in P 's fear of failure if π increases. Moreover, P can overcome the fear of failure only if P can expect reelection if c fails. Therefore, C must gamble on success, thereby providing full funds. This is why H1c expands as π increases. Then, we reach a counter-intuitive conclusion that P 's preferential bias to a particular policy does not necessarily damage V 's welfare. Such preferential bias may be leveraged by P to induce C to provide full funds, that is, expanding H1c.

Overall, we see that separation of powers weakly improves the voter's welfare by moving the power of the purse to one who is willing to provide larger funds to win the election. Specifically, when P is popular, giving the power of the purse to C weakly improves the voter's welfare because C is more willing to provide larger funds to change V 's initial belief by showing the failure of p . When C is popular, the welfare effects of separation of powers are nuanced. Although separation of powers successfully prevents the implementation of a wrong policy, it does not necessarily increase the amount of funds to a correct policy. The welfare effects of separation of powers depend on C 's motive behind the funding decision: whether fear of failure, playing safe, or gambling on success.

4.7 Discussion and Conclusion

Separation of powers can improve voters' welfare by mitigating the malign effects of electoral competition: the incumbent president's underfunding to avoid the electoral risks associated with policy implementation. More specifically, voters' welfare can be improved if separation of powers moves the power of the purse to the one who has a funding motive to provide larger funds, and the amount of funds increases as the motive of funding changes from fear

of failure to playing safe to gambling on failure to gambling on success. However, this logic also implies that separation of powers can reduce voters' welfare if the challenger has a funding motive to provide smaller funds than the incumbent president. This finding clearly shows that the welfare effects of separation of powers should be examined with its interaction with electoral competition because the motive of a funding decision is mostly determined by policymakers' electoral concerns.

In addition, the model demonstrates that careful attention is necessary when we interpret normative implications of a political stalemate. If a political stalemate is the result of the policy makers' fear of failure, then such a political stalemate may be interpreted as the sign of a dysfunctional government. However, if a political stalemate comes from checks and balances to block the implementation of a wrong policy, then it should be interpreted that the government actually functions well in preventing us from falling into a worse state. This finding suggests that the normative implications of a political stalemate are more nuanced than we expected.

The model also speaks to the recent debate over separation of powers. Howell and Moe (2016) claimed that empowering the president is necessary to make the government more effective in solving national problems. They specifically suggested giving the fast-track authority to the president over domestic policy as the president has over foreign policy. This is exactly what the model depicts: the incumbent president chooses a policy in the beginning. In fact, Howell and Moe simply take a strong assumption that is widely accepted in foreign policy: that the president's policy is always more likely to be correct. Even if we accept the strong assumption, the model shows that separation of powers is weakly better for voters' welfare (see Figure 3). Moreover, the model also shows that political stalemate can arise due to the president's fear of failure even if there is no separation of powers. This result clearly suggests that separation of powers should be preserved at least over funding decisions if we decide to empower the president to enhance the effectiveness of the government.

However, it is still debatable whether the strong assumption can be applied to domestic policy. If not, the model shows that it is not certain that empowering the president necessarily improves voters' welfare. If we give funding power to the president in addition to the power to initiate policy, we are surely exposed to the risk that the president will implement a wrong policy with full funds. However, if we retain the power of the purse of the legislature, then sometimes the legislature may play safe or even block any policy out of fear of failure. It is hard to provide a one-size-fits-all solution to this problem, but this paper facilitates a productive debate about an appropriate institutional design to address such possible welfare loss.

4.8 Appendix

Proof of Lemma 1

Suppose $\theta_p > \frac{1}{2}$. P can gain at least $\alpha_p + \pi$ by choosing policy p (i.e., P chooses policy p but not implementing it). The expected payoff from choosing policy c is $b\theta_c q_p + (1 - b\theta_c q_p)(\alpha_p - 1)$. Then, P never chooses policy c if $1 + \pi \geq (2 - \alpha_p)b\theta_c q_p$, which always holds because of the assumption that $\alpha_p > 2$. \square

Proof of Proposition 1

Suppose $\theta_p > \frac{1}{2}$. By Lemma 1, P never chooses policy c . Hence, we restrict our attention to the cases in which P chooses policy reform p . P can gain at least $\alpha_p + \pi$ by choosing policy p but not implementing it. If $b_p \geq \bar{b}_p$, then P 's expected payoff from implementing policy p is $(2 + \alpha_p)b_p\theta_p - 1 + \pi$. It is easy to see that P can maximize the expected payoff by providing $b_p = 1$. Thus, P 's maximized expected payoff is $(2 + \alpha_p)\theta_p - 1 + \pi$. If $b_p < \bar{b}_p$, then P 's expected payoff is $2b_p\theta_p + \alpha_p - 1 + \pi$. Then, the expected payoff from implementing policy p with $b_p < \bar{b}_p$ is always greater than the expected payoff from implementing policy p with $b_p = 1$ if $b_p > \frac{(2 + \alpha_p)\theta_p - \alpha_p}{2\theta_p}$. Since $\frac{(2 + \alpha_p)\theta_p - \alpha_p}{2\theta_p} < \bar{b}_p$, such b_p always exists. Therefore, if

P implements policy p , then it must be that $b_p^* = \max\{b_p \in B | b_p < \bar{b}_P\}$. Finally, the payoff from implementing policy p with b_p^* is equal to or greater than $\alpha_p + \pi$ if and only if $\theta_p \geq \frac{3}{4}$. Since the expected payoff from implementing policy p with $b < b_p^*$ is always less than the expected payoff from implementing policy p with b_p^* , it is optimal for P not to implement p if $\theta_p < \frac{3}{4}$. \square

Proof of Proposition 2

Suppose $\theta_p \leq \frac{1}{2}$ and $q_p < \frac{1}{2}$. P 's expected payoff from implementing policy p is $(2 + \alpha_p)b_p\theta_p - 1 + \pi$. P 's expected payoff from implementing policy c is $2b_c\theta_cq_p - 1$. Since the expected payoffs in both cases are increasing in b_x , P can maximize the expected payoff by providing $b_p = b_c = 1$. P 's expected payoff from initiating policy p but not implementing it is π . Thus, it is better for P to implement policy p than not implementing it if $\theta_p \leq \frac{1+\alpha_p}{2+\alpha_p}$. Then, it is easy to see that P will implement policy c with full funds if and only if $\theta_cq_p \geq \frac{(2+\alpha_p)(1-\theta_c)+\pi}{2}$ if $\theta_c \leq \frac{1+\alpha_p}{2+\alpha_p}$, and $\theta_cq_p \geq \frac{1+\pi}{2}$ if $\theta_c > \frac{1+\alpha_p}{2+\alpha_p}$. Note that $\frac{(2+\alpha_p)(1-\theta_c)+\pi}{2} < \frac{1}{2}$ when $\theta_c \leq \frac{1+\alpha_p}{2+\alpha_p}$, which implies that $\theta_cq_p \geq \frac{(2+\alpha_p)(1-\theta_c)+\pi}{2}$ does not hold when $\theta_c \leq \frac{1+\alpha_p}{2+\alpha_p}$ by the assumption that $\alpha_c > 2$. Therefore, P will implement policy c with full funds if and only if $\theta_cq_p \geq \frac{1+\pi}{2}$ if $\theta_c > \frac{1+\alpha_p}{2+\alpha_p}$. Meanwhile, P will implement policy p with full fund if and only if $\theta_cq_p < \frac{(2+\alpha_p)(1-\theta_c)+\pi}{2}$ and $\theta_c \leq \frac{1+\alpha_p}{2+\alpha_p}$. Otherwise, P chooses policy p but does not implement it. \square

Proof of Proposition 3

Suppose $\theta_p \leq \frac{1}{2}$ and $q_p \geq \frac{1}{2}$. P 's expected payoff from implementing policy c with $b_c > \bar{b}_c$ is $\alpha_p - 1 + b_c\theta_cq_p(2 - \alpha_p)$. Since this expected payoff is decreasing in b_c , P can maximize the expected payoff by providing $b_c = \min\{b_c \in B | b_c > \bar{b}_c\}$. Then, the maximized expected payoff is $4\theta_c - 3 + 2\alpha_p(1 - \theta_c) - \eta$, where $\eta : \mathbb{N} \rightarrow \mathbb{R}_+$ is a mapping from n to a certain non-negative real number. P 's expected payoff from implementing policy c with $b_c \leq \bar{b}_c$ is $2b_c\theta_cq_p - 1$, which must be less than $4\theta_c - 3$. Since $\theta_c < 1$ and we can set a sufficiently small

number n that can make η small enough to make $4\theta_c - 3 + 2\alpha_p(1 - \theta_c) - \eta > 2b_c\theta_cq_p - 1$, it must be that P provides $b_c = \min\{b_c \in B | b_c > \bar{b}_c\}$ if P implements policy c .

P 's expected payoff from implementing policy reform p is $b_p\theta_p(2 + \alpha_p) - 1 + \pi$. Since the expected payoff is increasing in b_p , the maximized expected payoff is $\theta_p(2 + \alpha_p) - 1 + \pi$. P 's expected payoff from choosing policy p but implementing it is π . Recall that $\theta_p = 1 - \theta_c$. Thus, it is better for P to implement policy p than not to implement it if $\theta_c \leq \frac{1+\alpha_p}{2+\alpha_p}$.

Consider the cases in which $\theta_c \leq \frac{1+\alpha_p}{2+\alpha_p}$. P implements policy c with $b_c^* = \min\{b_c \in B | b_c > \bar{b}_c\}$ only if $(6 - \alpha_p)\theta_c \geq \pi + 4 - \alpha_p$, which always hold if $\alpha_p \geq \pi + 4$. If $\alpha_p < \pi + 4$, then $(6 - \alpha_p)\theta_c \geq \pi + 4 - \alpha_p$ holds only if $\theta_c \geq \frac{\pi+4-\alpha_p}{6-\alpha_p}$ where $\frac{\pi+4-\alpha_p}{6-\alpha_p} < \frac{1+\alpha_p}{2+\alpha_p}$. If $\alpha_p \geq 2 + 2\pi$, then we have $\frac{\pi+4-\alpha_p}{6-\alpha_p} < \frac{1}{2} \leq \theta_c$, which implies that P implements policy c with $b_c^* = \min\{b_c \in B | b_c > \bar{b}_c\}$. Therefore, P implements policy reform p with full funds if and only if $\alpha_p < 2 + 2\pi$ and $\theta_c < \frac{\pi+4-\alpha_p}{6-\alpha_p}$. Consider the cases in which $\theta_c > \frac{1+\alpha_p}{2+\alpha_p}$. P implements policy c with $b_c^* = \min\{b_c \in B | b_c > \bar{b}_c\}$ only if $\theta_c \leq \frac{2\alpha_p-\pi-3}{2\alpha_p-4}$. Since $\theta_c < 1 \leq \frac{2\alpha_p-\pi-3}{2\alpha_p-4}$, P always implements policy c with $b_c^* = \min\{b_c \in B | b_c > \bar{b}_c\}$. In conclusion, the president implements policy reform p with full funds if $\alpha_p < 2 + 2\pi$ and $\theta_c < \frac{\pi+4-\alpha_p}{6-\alpha_p}$. Otherwise, the president always implements policy reform c with $b_c^* = \min\{b_c \in B | b_c > \bar{b}_c\}$. \square

Proof of Lemma 2

Suppose $\theta_p > \frac{1}{2}$. By Lemma 1, P never initiates policy reform r . Hence, we restrict our attention to the cases in which P initiates policy reform p . P can gain at least $\alpha_p + \pi$ by initiating policy reform p but not implementing it. If $b_l \geq \bar{b}_l$, then P 's expected payoff from implementing policy p is $(2 + \alpha_p)b_p\theta_p - 1 + \pi$. Therefore, P accepts C 's funding decision if $b_p \geq \frac{1+\alpha_p}{(2+\alpha_p)\theta_p}$. If $\theta_p < \frac{1+\alpha_p}{2+\alpha_p}$, then P accepts C 's funding decision only if $b_p > 1$, a contradiction to $b_p \leq 1$. Hence, P implements policy p with $b_p \geq \bar{b}_p$ if $\theta_p \geq \frac{1+\alpha_p}{2+\alpha_p}$ and $b_p \geq \frac{1+\alpha_p}{(2+\alpha_p)\theta_p}$. If $b_p < \bar{b}_p$, then P 's expected payoff from implementing policy reform p is $2b\theta_p - 1 + \alpha_p + \pi$. Thus, P prefers to implement policy p with $b_p < \bar{b}$ if and only if $b_p \geq \frac{1}{2\theta_p}$. Since we assume that $b_p < \bar{b}_p = 2 - \frac{1}{\theta_p}$, it must be that $\frac{1}{2\theta_p} \leq b_p < 2 - \frac{1}{\theta_p}$ holds, which requires $\theta_p > \frac{3}{4}$. \square

Proof of Proposition 4

Consider the cases in which $\theta_p \geq \frac{1+\alpha_p}{2+\alpha_p}$. If $b_p < \bar{b}_p$, C 's expected payoff from implementing policy p is $2b_p\theta_p - 1$. If $b_p \geq \bar{b}_p$, C 's expected payoff from implementing policy p is $(2 - \alpha_c)b_p\theta_p - 1 + \alpha_c$. Hence, C always prefers to provide $b_p \geq \bar{b}_p$ rather than $b_p < \bar{b}_p$. C receives 0 if the status quo remains. Hence, C prefers to implement policy reform p with $b_p \geq \bar{b}_p$ if $b_p < \frac{1-\alpha_c}{(2-\alpha_c)\theta_p}$, which always holds because $\frac{1-\alpha_c}{(2-\alpha_c)\theta_p} > 1$. Since C 's expected payoff from implementing policy p with $b_p \geq \bar{b}_p$ is decreasing in b_p , C provides $b_p^* = \min\{b_p \in B | b_p \geq \max\{\bar{b}_p, \frac{1+\alpha_p}{(2+\alpha_p)\theta_p}\}\}$, which leads P to implement policy reform p by Lemma 2.

Consider the cases in which $\theta_p < \frac{1+\alpha_p}{2+\alpha_p}$. Now, P does not implement policy p if $b_p \geq \bar{b}_p$. Hence, the only option for C to implement policy p is to provide $b_p < \bar{b}_p$. C prefers to implement policy p with $b_p < \bar{b}_p$ rather than the status quo if and only if $b_p \geq \frac{1}{2\theta_p}$. Then, $\frac{1}{2\theta_p} \leq b_p < 2 - \frac{1}{\theta_p}$ holds only when $\theta_p > \frac{3}{4}$. Since this condition is exactly same as the condition in which P prefers to implement policy p with $b_p < \bar{b}_p$, P implements policy p . Note that C 's expected payoff from implementing policy p with $b_p < \bar{b}_p$ is increasing in b_p , thereby $b_p^* = \max\{b_p \in B | b_p < \bar{b}_p\}$. \square

Proof of Lemma 3

Suppose $\theta_p > \frac{1}{2}$. C 's expected payoff from implementing policy p is $b_p(1 - \theta_p) + (1 - b_p(1 - \theta_p))(\alpha_c - 1)$, while its expected payoff from blocking policy p is α_c . Then, C prefers to block policy p if $b_p(2 - \alpha_c)(1 - \theta_p) < 1$, which always holds since $\alpha_c > 2$. \square

Proof of Proposition 5

Suppose $\theta_c \geq \frac{1}{2}$ and $q_p < 2 - \frac{1}{\theta_c}$. By Lemma 2, P receives π by initiating policy p . P 's expected payoff from initiating policy c is $2b_c\theta_cq_p - 1$. Thus, P implements policy c if $b_c > \frac{1+\pi}{2\theta_cq_p}$ and $\theta_cq_p \geq \frac{1+\pi}{2}$.

C 's expected payoff from implementing policy c is $2b_c\theta_cq_p - 1 + \alpha_c$. Since the expected payoff is increasing in b_c , C can maximize the expected payoff by choosing $b_c = 1$ and will

receive $2\theta_c q_p - 1 + \alpha_c$. Since C can receive at least α_c by choosing $b_c = 0$, C provides full funds if and only if $1 \geq \frac{1}{2\theta_c q_p}$, which requires $\theta_c q_p \geq \frac{1}{2}$.

Thus, if $\theta_c q_p \geq \frac{1+\pi}{2}$, then C provides $b_c = 1$ because $\theta_c q_p \geq \frac{1+\pi}{2} > \frac{1}{2}$, which, in turn, satisfies $b_c = 1 \geq \frac{1+\pi}{2\theta_c q_p}$, which leads P to implement policy c . Otherwise, if P chooses policy c , then either C provides $b_c = 0$ or P does not implement policy c . Consequently, P receives 0 in both cases. Thus, P initiates policy p because, by Lemma 3, P can receive π by initiating policy p . \square

Proof of Proposition 6

Suppose $\theta_c \geq \frac{1}{2}$ and $q_p \geq 2 - \frac{1}{2\theta_c}$. P 's expected payoff from implementing policy c with $b_c \leq \bar{b}_c$ is $2b_c\theta_c q_p - 1$, while the expected payoff from implementing policy c with $b_c > \bar{b}_c$ is $(2 - \alpha_p)b_c\theta_c q_p - 1 + \alpha_p$. By Lemma 3, P 's payoff from choosing policy p is π . Then, P prefers to implement policy c with $b_c \leq \bar{b}_c$ rather than the status quo if $b_c \geq \frac{1+\pi}{2(\theta_c q_p)}$. Since we assume $b_c \leq \bar{b}_c$, it must be that $\frac{1+\pi}{2\theta_c q_p} \leq \bar{b}_c$, which requires $\theta_c \geq \frac{3+\pi}{4}$. P prefers to implement policy c with $b_c > \bar{b}_c$ if $b_c \leq \frac{1-\alpha_p+\pi}{(2-\alpha_p)\theta_c q_p}$. Since $1 < \frac{1-\alpha_p+\pi}{(2-\alpha_p)\theta_c q_p}$, P always implements policy c if $b_c > \bar{b}_c$. Otherwise, P initiates policy p to gain π .

C 's expected payoff from implementing policy c with $b_c \leq \bar{b}_c$ is $2b_c\theta_c q_p - 1 + \alpha_c$. Since the expected payoff is increasing in b_c , C can maximize its payoff by providing $b_c = \bar{b}_c$ and its maximized payoff is $4\theta_c - 3 + \alpha_p$. C 's payoff with $b_c > \bar{b}_c$ is $(2 + \alpha_c)b_c\theta_c q_p - 1$, which is maximized by providing $b_c = 1$. C 's maximized payoff in this case is $(2 + \alpha_c)\theta_c q_p - 1$. C can safely receive at least α_c if C provides zero funds to either policy. Hence, C prefers to implement policy c with $b_c = \bar{b}_c$ rather than the status quo if and only if $\theta_c q_p \geq \frac{3}{4}$, while C prefers to implement policy c with $b_c = 1$ rather than the status quo if and only if $\theta_c q_p \geq \frac{1+\alpha_c}{2+\alpha_c} > \frac{3}{4}$. In addition, C prefers to implement with full funds rather than with $b_c = \bar{b}_c$ if and only if $\theta_c q_p \geq \frac{2(2\theta_c-1)+\alpha_c}{2+\alpha_c}$. Moving θ_c from the left-hand side to the right-hand side, we have $q_p \geq \frac{2(2\theta_c-1)+\alpha_c}{(2+\alpha_c)\theta_c}$. However, $\alpha_c > 2$ implies that $\frac{2(2\theta_c-1)+\alpha_c}{(2+\alpha_c)\theta_c} \geq 1$, which, in turn, implies that it must be $q_p < \frac{2(2\theta_c-1)+\alpha_c}{(2+\alpha_c)\theta_c}$ for all $q_p \in (0, 1)$. Thus, $\theta_c q_p < \frac{2(2\theta_c-1)+\alpha_c}{2+\alpha_c}$.

Therefore, C always prefers to implement policy c with $b_c^* = \max\{b_c \in B | b_c \leq \bar{b}_c\}$ as long as P is willing to accept it, that is, $\theta_c \geq \frac{3+\pi}{4}$. If P is not willing to accept $b_c = \bar{b}_c$ (i.e., $\theta_c < \frac{3+\pi}{4}$) then P prefers to implement policy c with $b_c = 1$ as long as $\theta_c q_p \geq \frac{1+\alpha_c}{2+\alpha_c}$ because P always implements policy c if $b_c > \bar{b}_c$. Therefore, C provides $b_c^* = 1$ if and only if $\theta_c q_p \geq \frac{1+\alpha_c}{2+\alpha_c}$ and $\theta_c < \frac{3+\pi}{4}$. Otherwise, C will provide no funds, which leads P to initiate policy p to gain π .
 \square

Chapter 5. Conclusion

The general purpose of this dissertation was to explore the interactions between separation of powers and competitive elections and their consequences in the policymaking process with the tools of formal theory. This dissertation restricted its focus to a subset of the policymaking process because there are so many dimensions involving the interactions between separation of powers and competitive elections in the policymaking process. Specifically, this dissertation focused on important aspects of policymaking, each of which arises in three different stages of the policymaking process respectively: elections before policy formation, the president's unilateral policymaking power during policy formation, and funding decisions in the policy implementation stage after policy formation.

In the second chapter, I examined how the super-majoritarian rule in the legislative process affects voters' behaviors in the election to form the legislature. Although the legislative gridlock region is well known for a direct consequence of the super-majoritarianism, it has been neglected that the super-majoritarianism can affect the severity of the legislative gridlock region indirectly through the interactions with elections. More specifically, if the position of the status quo is neither too moderate nor too extreme, then certain voters have incentives to elect a more extreme representative than themselves, and this sophisticated voting results in the expansion of the size of the gridlock region. As a result, the model demonstrated that the expansion of the gridlock region is caused in part by sophisticated voting independent of the voters' ideological distribution.

In the third chapter, I focused on the president's unilateral policymaking power, which raises concerns among many scholars and pundits because such power appears to violate the principle of separation of powers. However, it is surprising that the president does not always rely on such unilateral power to enact a policy even if the legislative cannot restrain the president's unilateral action due to its collective action problem. To address this puzzle, I developed a formal model that demonstrated that elections provide constraints on the president's exercise of unilateral power, thereby contributing to maintaining the principle of separation of powers in certain circumstances. Specifically, if we include elections to our consideration about the president's unilateral action, then we see that the president's unilateral action is a costly tool for voter mobilization. This is because the president's unilateral action activates all voters' constitutional concerns, which increases the cost of voting that leads the president's supporters to abstain. However, it also provides extra expressive benefits of voting to the president's supporters who deeply care about the policy established by the unilateral action. Hence, the president acts unilaterally to establish the policy only if its mobilizing effects outweigh its demobilizing effects. This result implies that the president's unilateral action can be justified only if it acquires popular support that can compensate for the lack of its constitutionality.

In the fourth chapter, I examined how separation of powers and competitive elections interact in the context of funding decisions during the policy implementation stage. There is a growing concern that separation of powers leads to a dysfunctional government. Moreover, separation of powers seems redundant because competitive elections can also discipline politicians. This poses a theoretical puzzle. Why do we need separation of powers even though we have competitive elections? Can separation of powers be justified based on its welfare effects? To address these questions, I presented a formal model focusing on funding decisions in the policy implementation stage. The central finding of the model is that separation of powers can improve voters' welfare by mitigating the malign effects of electoral

competition: the incumbent president's underfunding to avoid the electoral risks associated with policy implementation. But such welfare improvement is possible only in certain circumstances: when separation of powers change the motive behind the funding decision from playing safe to gambling on failure or success. In addition, separation of powers can improve voters' welfare through blocking the implementation of a wrong policy. However, separation of powers can also reduce voters' welfare when the legislature has an incentive to play safely in addition to the cases in which the legislature has a fear of failure. Such welfare-reducing effects of separation of powers arise only when the challenger's policy is initially believed to be correct.

The findings from the three chapters demonstrate that the interactions between separation of powers and competitive elections affect political actors' behaviors, thereby yielding unexpected effects on policy outcome. This dissertation is agnostic with regard to whether the framers also plan such interactions between the two institutional designs. Whether it is or not, this dissertation demonstrated that it is necessary to consider the interactions between separation of powers and competitive elections, in addition to the original rationales behind the two institutional designs, for a better understanding of political institutions and the policymaking process in American politics.

The findings in the three essays provide interesting avenues of future research. In the second chapter, I presented the importance of the location of the status quo, which can be applied to analyze the president's unilateral action. Given such unilateral policymaking power, the presidents can tactically move the status quo into the opportunity region to expand the gridlock region for their political ends. Since the position of the status quo determines the position of the effective pivotal legislator through the electoral process, the president may use their unilateral power to move the status quo into the opportunity region before elections in order for the elected pivotal legislator to be much closer to their ideal points. This extension of the model would be useful for understanding why the president's

unilateral action is followed by ideological polarization in the legislature.

In the third chapter, I suggested that the president's unilateral action can be justified only if it acquires popular support from voters. That is, there are two sources from which the legitimacy of the president's unilateral action originates: the principle of separation of powers and electoral support. Recognizing such dual sources of the legitimacy suggests that we pay more attention to possibly benign but neglected effects of the president's unilateral action on our democracy. At the same time, however, the model pointed out a fundamental problem embedded in a representative democracy: Does the electoral outcome truly represent what most people want? In elections, the outcome is determined only by those who turn out at the polling booths. The model demonstrated that the president could manipulate the electoral outcome by affecting the voters' turnout rate. Even though the electoral outcome deviates from what most people want in a particularistic presidency, the president's reelection can be superficially interpreted as a legitimate electoral outcome approved by most people. However, this seemingly legitimate mandate comes from the majority manufactured by the president's unilateral action and not from the true majority of people, since the particularistic presidency occurs in a hostile political landscape where most voters want to replace the president. The model, therefore, calls for more careful attention to the normative interpretations of the president's unilateral action.

In the fourth chapter, I specified the conditions under which separation of powers leads to the improvement of voters' welfare. This finding may provide a rational theory of the split-ticket voting. As Sigelman et al. (1997) nicely summarized, there have been two camps regarding what motivates the voters to choose divided government. The first camp claimed that "cognitive Madisonianism" (Ladd 1990), that is, the voters' intrinsic preferences for divided government, is what leads the voters to choose divided government (e.g., Erikson 1988; Jacobson 1990; Fiorina 1991, 1992). On the contrary, the other camp claimed that divided government is an unintended consequence of the political structures of the U.S rather

than the consequence of the voter's strategic choices based on their desires for divided government (e.g., Campbell and Miller 1957; Sundquist 1988; Wattenberg 1995). Empirical studies regarding this debate showed mixed results. The model contributes to this debate by showing that there might be a strategic rationale behind the voters' choices of divided government based on their preferences for divided government. However, such preferences for divided government are situationally-dependent rather than intrinsic and fixed. That is, voters may prefer divided government to unified government only when divided government can improve their welfare as the blue regions in Figure 4.4. Therefore, incorporating the voters' decision on the type of government before the game between the incumbent president and the challenger would be an interesting extension.

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