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Why do voters elect less qualified candidates?*

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Abstract

Voters sometimes vote for seemingly less qualified candidates; the winners of elections are sometimes less competent than the losers in light of candidates' observable characteristics such as their past careers. To explain this fact, we develop a political agency model with repeated elections in which a voter elects a policy maker among candidates with different competency (valence) levels. We show that politicians' competency relates negatively with political accountability when the challenger in the future election is likely to be incompetent. When this negative relation exists, voters prefer to elect an incompetent candidate if they emphasize politicians' policy choices over their competency. The negative relation between competency and accountability is possible because voters cannot commit to future voting strategies. Furthermore, voters' private information about how they evaluate candidates' competency generates a complementary mechanism leading to the negative relation between competency and accountability. This mechanism implies that voters' anti-elitism can be rational ex post even if it is groundless in the first place.

JEL classification: D72, D82,

Keywords: Candidates' competency, Political agency, Repeated elections, Private information, Signaling

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1 Introduction

Candidates regarded by voters as less competent have won several elections, and voters' preference for incompetent politicians has been remarkable in recent years. For example, a survey by Di Tella and Rotemberg (2016) shows that in the 2016 U.S. presidential election, citizens elected Donald Trump knowing that Trump did not understand policies compared with Hillary Clinton. In the survey conducted before the election, only 12 % of subjects agreed that Trump understands policies more than Clinton, while 65% of subjects agreed that Clinton understands policies more than Trump. Furthermore, considering past political career, Trump did not have any elective experience, while Clinton had held a senate seat for eight years and had served as Secretary of State for four years. The 2016 presidential election is not an exceptional case; when we measure candidates' political experience by past career as a senator, a governor, or vice-president, U.S. voters have consistently elected less-experienced candidates in presidential elections since 1996 (Rauch 2015). The electoral surge of Five Star Movement in Italy, led by the comedian Beppe Grillo, also illustrates the rise of amateur politicians. On the back of repeated corruption scandals, Five Star Movement criticized existing politicians, and “[i]n this framework, political inexperience is considered a strength rather than a weakness” (Mosca 2014, p. 44). Dustmann et al. (2017) also argue that the erosion of trust in existing politicians and political institutions causes the rise of populist parties, which are generally new and inexperienced.

Existing theories provide the reason why incompetent individuals can hold political offices in a democracy, but their explanation focuses on the entry of individuals into politics (Caselli and Morelli 2004; Messner and Polborn 2004; Mattozzi and Merlo 2015; Besley et al. 2017).¹ Although the entry side of political selection is important, the above examples illustrate that voters do not always elect the most competent candidate among the pool of candidates in an election, which means that the quality of a politician in an office can be low even if high quality individuals have incentives to run for office.

This paper aims to explain theoretically why and when voters elect a less competent candidate. To this end, we extend a two-period political agency model à la Besley (2006), incorporating the following three structures: (i) politicians differ in observable competency levels, in addition to unobservable policy preferences, (ii) an open seat election is introduced before the first policy choice to determine the incumbent's competency level, and (iii) voters have private information about how they evaluate politicians' competency. Specifically, a competent and an incompetent candidate contest the first election. After choosing a policy, the winner contests with a new challenger, and the winner of the second election again chooses a policy. The voters' payoffs depend on the competency levels of the elected politicians and the chosen policies, and how much the voters give weight to the politicians'

¹Competent individuals may be less likely to run for office due to their high opportunity cost of being politicians (Caselli and Morelli 2004; Messner and Polborn 2004). Political parties might recruit mediocre individuals to maximize party members' incentives to exert effort for the party (Mattozzi and Merlo 2015) or to secure a leader's survival, which would be threatened by the entry of competent individuals (Besley et al. 2017).

competency is the voters' private information: one type of voter (type-C) gives the highest priority to the candidates' competency and always votes for a candidate with the highest competency level, while the other type (type-P) weighs the candidates' competency against their expected policy choices. As in Besley (2006), the voters cannot observe the politicians' policy preferences, and the politicians' policy compromise to the voters can be a signal of shared preferences, which increases their probability of re-election.

We show that politicians' incentive to cater to voters' policy preferences can be inversely related to their competency levels; due to this negative relation between competency and accountability, voters prefer the incompetent candidate if they place emphasis on accountability. The reason behind the negative relation between competency and political representation is that voters cannot commit to re-election strategies. For example, when the incumbent is less competent than the challenger, the voters may elect the challenger even though the incumbent has chosen the voters' preferred policy. Similarly, when the incumbent is more competent than the challenger, the voters may re-elect the incumbent even though the incumbent has not chosen the voters' preferred policy. As a result, when the future challenger is less likely to be competent, the incompetent incumbent has an incentive to act in the voters' interest, while the competent incumbent does not. In the open seat election in the first period, the voters cast their ballots considering these politicians' incentives. Hence, when the negative relation between competency and accountability is expected, the voters prefer to elect the incompetent candidate if they emphasize the policy choice of the elected politicians rather than their competency.

The voters' private information generates a complementary mechanism leading to the negative relation between the politicians' competency and their representation of the voters' preferences. To explain this result, assume that the voters' electoral choice in the first election is different between their types: the type-C voters elect the competent candidate, while the type-P voters elect the incompetent candidate. Then, the winning candidate can identify the voters' type from the electoral result; after winning, the competent candidate perceives that the voters place the maximum value on his or her competency. As a result, the competent candidate will pursue his or her own interest, sacrificing the voters' interest, in the policy choice stage because of the perception that his or her advantage derived from competency will dominate the next election. Given this policy choice, it can be optimal for the voters to elect the incompetent candidate if they place sufficiently great importance on the policy choice.² Then, the voters' separating strategy assumed in the first place becomes optimal.

This self-fulfilling mechanism implies that the voters' anti-elitism can be rational ex post even if it is groundless in the first place. When voters mistrust the policy choice of elite politicians for some reasons, allowing these politicians to win makes them perceive that they can win because the voters highly evaluate their high level of competency. Since this perception undermines politicians' accountability, it becomes rational for voters to distrust

²For the voters to elect the incompetent candidate, it is necessary that the incompetent politician has an incentive to compromise to voters, which is assured when the future challenger is less likely to be competent.

elite politicians. The economic downturn since the financial crisis in 2008 is often said to be the cause of the rise of anti-establishment parties in Europe (Algan et al. 2017; Dustmann et al. 2017; Guiso et al. 2017), but it is not obvious whether existing politicians are responsible for the economic downturn. Our model explains why it is difficult to dispel voters' distrust against existing politicians even though this distrust emerges from baseless suspicion.

Our model also yields several empirical predictions. First, incompetent candidates are more likely to be elected when a sharp policy conflict exists between the decisive voters and other citizens. When policy conflict is severe, voters' policy payoffs vary greatly depending on whether their preferred policy is chosen or not. In this situation, voters care much about policy choice, which makes the election of incompetent candidates more likely. This theoretical prediction is a possible explanation for why U.S. voters have consistently elected less experienced candidates as their presidents since mid-1990s. The recent progress of globalization has intensified policy conflicts around trade and immigration, and these are often said to be the cause of Trump's win in the 2016 election. The second prediction is that competent candidates are more likely to win in the case where the expected quality of the future challenger is high. This is because the entry of a competent challenger enhances the accountability of the competent incumbent but undermines that of the incompetent incumbent. The third prediction is that the effects of term limit on politicians' behavior depend on their competency. In the separating equilibrium, the incompetent politician has an incentive to compromise to voters for re-election, while the competent politician does not. Hence, the incompetent politician is more likely to change policies in the last term where he or she does not need to seek re-election. Finally, we predict that the incompetent politician is less likely to be elected when the reward for the politician is large enough. When the reward is large enough, politicians in office choose voters' preferred policy to get re-elected regardless of their competency levels, which eliminates the behavioral difference between competent and incompetent politicians. Thus, voters elect competent candidates in this case.

The rest of this paper is organized as follows. The next section relates this paper to the existing literature. Section 3 describes the environment of the model, and Section 4 solves it. Section 5 discusses the empirical predictions of the model. Section 6 empirically tests the prediction of the term-limit effect. Finally, Section 7 concludes the paper.

2 Related literature

The model of this paper is related to the political agency models with hidden types of politicians (Rogoff 1990; Banks and Sundaram 1993; Besley and Case 1995a; Coate and Morris 1995; Besley 2006; Besley and Smart 2007).³ As is described in Introduction, this paper is different from these studies in the following three ways: (i) politicians differ in observable competency levels, in addition to unobservable types, (ii) an open seat election is introduced

³The pioneering work on political agency has been done by Barro (1973), Ferejohn (1986), and Austen-Smith and Banks (1989).

before the first policy choice to determine the incumbent’s competency level, and (iii) voters have private information. The open seat election is introduced to analyze the voters’ choice of the candidates’ competency. The voters’ private information generates the interaction between their voting strategies and the incumbent’s accountability. The extension in the first way is also analyzed by Padró-i-Miquel and Snowberg (2012). Incorporating politicians’ valence into a political agency model, they analyze how the re-nomination decision by party members is related with the political accountability of the incumbent. The mechanism in our model through which the voters’ commitment problem generates the negative relation between competency and accountability is similar to their argument.⁴ However, unlike their model, the voters have private information about how they emphasize the politicians’ competency, and the incumbent’s belief about the voters’ type affects the incumbent’s tradeoff between rent-seeking and re-election. Furthermore, this study analyzes politicians’ accountability to general voters rather than their party members, and our primary interests are to analyze voters’ choice of politicians’ competency levels.

There are several studies that analyze when voters demand incompetent politicians (Buisseret and Prato 2016; Di Tella and Rotemberg 2016; Buisseret and Van Weelden 2017; Eguia and Giovannoni 2017; Kishishita 2017; Mattozzi and Snowberg 2018).⁵ While most of these studies assume that competent candidates have some innate differences from incompetent candidates besides competency, this paper shows that voters prefer a less competent candidate in an election even if candidates’ characteristics are identical, except for their competency, from the voters’ perspective. In this sense, Buisseret and Prato (2016) is the closest to this study; they show why candidates’ incompetency in itself can be beneficial to voters. They provide a model in which politicians use their time to serve voters in their constituency or to achieve benefits for their faction in the legislature. They show that the strategic complementarity in politicians’ factional activities makes it difficult for voters to control politicians as their quality rises. Since the strategic interdependency among politicians, who are elected from different districts, is the key to the mechanism, the focus of Buisseret and Prato (2016) is on politicians in legislatures. On the other hand, the mechanism proposed in this paper shows that the negative relation between competency and accountability can occur in the environment where voters elect a single policy maker.

This paper also relates to the literature on the role of candidates’ valence in electoral

⁴Another strand of literature on political accountability indicates voters’ commitment problem in the context of an infinite-horizon model with term limits (see Bernhardt et al. (2004) and Duggan and Martinelli (2017)).

⁵Demand for incompetent politicians is related to populism. Populism contains citizens’ anti-elitism as an important aspect, and populist parties generally lack political experience. Thus, this paper is also related with recent studies on populism (see, among others, Acemoglu et al. 2013; Algan et al. 2017; Dustmann 2017; Guiso et al. 2017; Karakas and Mitra 2017). Karakas and Mitra (2017) argue that ideological extremism allows outsider candidates to commit to radical policy shifts more credibly than establishment candidates and that this commitment ability originating in outsiders’ extremism is the reason why outsider candidates can obtain voters’ support. This paper provides another reason why outsider candidates can commit to policies preferred by voters: the incompetency that results from the inexperience of outsider candidates makes them more accountable to voters than establishment candidates, who are experienced and are considered as competent.

competition. Most existing studies, using the standard Hotelling-Downs model where candidates can commit to campaign promises, have investigated the effects of candidates' valence on platform divergence in electoral competition. (Ansolabehere and Snyder 2000; Groseclose 2001; Aragonés and Palfrey 2002; Kartik and McAfee 2007; Callander 2008; Carrillo and Castanheira 2008; Ashworth and Bueno de Mesquita 2009; Aragonés and Xefteris 2017). Among these studies, Aragonés and Xefteris (2017) is similar to this paper in that voters' evaluation about candidates' valence is their private information. However, in their environment following the standard Hotelling-Downs model, voters cannot send any informative signals to candidates.

In this literature, this paper is most closely related to Bernhardt et al. (2011), who build a model with repeated elections where incumbent politicians, who cannot commit to policies before being elected, face a tradeoff between their own preferred policy and policy compromise toward voters to get re-elected. Unlike this paper, they assume that voters can observe politicians' valence only after they are elected,⁶ and show that incumbents with valence advantage are more likely to deviate from their preferred policy for getting re-elected.⁷

Finally, this paper is related to the literature focusing on the signaling function of voting (Piketty 2000; Castanheira 2003; Razin 2003; Meiwitz 2005; Shotts 2006; Meiwitz and Tucker 2007; Meiwitz and Shotts 2009; Hummel 2011; Kselman and Niou 2011; McMurray 2017; Myatt 2017).⁸ The models in these studies analyze the situation in which candidates learn about voters' private information from electoral results. However, none of these studies have analyzed how voters' private information affects the political accountability of incumbent politicians.⁹

3 The model

3.1 Environment

Our model has two time periods ($t = 1, 2$), and all agents discount the future with a common discount factor $\beta \in (0, 1)$. A group of identical citizens has a majority and chooses a policy maker in an election in each period. The elected politician chooses a policy $e_t \in \{0, 1\}$, and the majority prefer $e_t = 1$ to $e_t = 0$. They obtain $v > 0$ if $e_t = 1$ and obtain nothing if $e_t = 0$.

As in Besley (2006), policy preferences divide electoral candidates into two types: con-

⁶Boleslavsky and Cotton (2015) also analyze the model where candidates cannot commit to policies before elections and have private information about their valence characteristics.

⁷We will explain in more detail the difference between this paper and Bernhardt et al. (2011) after we present our results (see Section 5.3).

⁸Callander and Wilkie (2007), Kartik and McAfee (2007), and Callander (2008) provide models in which candidates send signals on their valence characteristics to voters.

⁹Among these studies, the motivation of this paper is related to the studies of protest voting by Kselman and Niou (2011) and Myatt (2017). However, our model is based on the political agency model and its structure is quite different from those of their models.

gruent and dissonant types. The policy preferences of the dissonant type conflict with the majority. The dissonant type obtains private benefit $r > 0$ by choosing $e_t = 0$, and obtains nothing by choosing $e_t = 1$. The policy preferences of the congruent type coincide with the majority, and this type always chooses $e_t = 1$. The type of a candidate is his or her private information, and the prior probability that a candidate is the congruent type is $\rho \in (0, 1)$.

This set-up encompasses many situations. One interpretation is that the policy preferences of dissonant politicians differ from those of the majority because the dissonant politicians represent an organized minority group, such as the elite whose policy preferences conflict with the majority. In this interpretation, there is conflict between the majority and some minority groups of citizens over policies. The minority group attempts to influence policies by means such as lobbying and political donation, but only dissonant politicians are receptive to the offer by the minority group. Another interpretation is that congruent and dissonant types represent candidates' honesty. Honest politicians always prefer honest behavior, but dishonest politicians who choose honest behavior incur loss from passing up dishonest profit.

Competency is another dimension of candidates' heterogeneity. Electoral candidates are either competent ($i = H$) or incompetent ($i = L$). Competent candidates can provide voters with additional payoffs if elected. In the payoff structure of the majority, this valence component is additively separable from the payoff from the policy choice e_t , which is the standard formulation in the literature of candidates' valence and electoral competition (see, among others, Ansolabehere and Snyder 2000, Groseclose 2001, and Aragonés and Xepferis 2017). Voters can observe candidates' competency by observing their past experiences in political offices, careers in the private sector, educational achievement, and so on. We assume that candidates' types are not correlated with their competency; the prior probability of a candidate being the congruent type is independent of the competency of the candidate.

There are two types of majority and these types are the majority's private information. The majority have a subjective evaluation on how politicians' competency will increase their payoff, and the two types differ in this evaluation. When the majority is *competency-oriented* (hereinafter called type-C), they give the highest priority to candidates' competency when choosing a politician: the payoff from competency is sufficiently high that the majority of this type have lexicographic preferences over candidates. In this case, the majority always prefer the competent candidate to the incompetent one. On the other hand, if the majority assign more importance to candidates' expected policy choice, their voting decision will be affected by candidates' expected policy choice. If this is the case, we say that the majority is *policy-oriented* or type-P. The type-P majority obtain $\lambda > 0$ from electing a competent candidate. For notational simplicity, we define $\hat{v} \equiv v/\lambda$.

The type of the majority is determined by the nature. In the beginning of the first period, the nature chooses the type of the majority; the majority are type-C with probability $\eta \in (0, 1)$ and are type-P with probability $1 - \eta$.

In the election in the first period, a competent and an incompetent candidate run the race, and the winner chooses a policy e_1 . In the second election, the incumbent politician

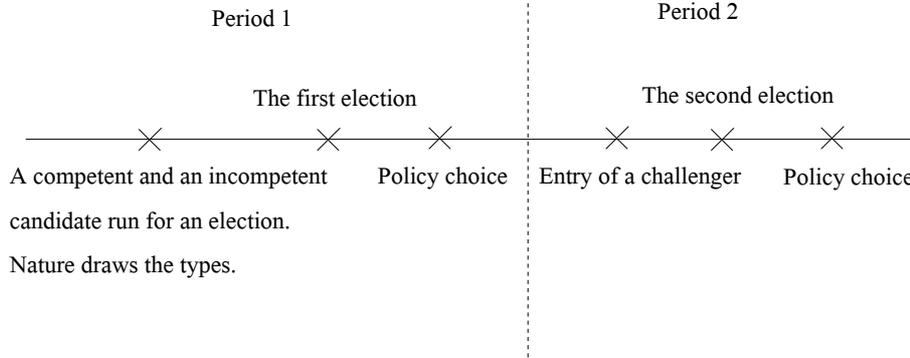


Figure 1: The timing of events

contests with a challenger who is competent with probability $q \in (0, 1)$ and is incompetent with probability $1 - q$. The elected candidates obtain $W > 0$ in both elections. Since the model ends at the second period, the candidate elected in the second election can choose his or her preferred policy without considering re-election. Hence, a dissonant candidate can obtain $R \equiv W + r$ by winning the second election. We assume that $\beta R > r$.¹⁰

We assume that the majority re-elect the incumbent if the incumbent is identical with the challenger in terms of both the perceived probability of being congruent and the level of competency. We also assume that all agents do not play weakly dominated strategies.

The timing of events is as follows (See Figure 1).

1. A competent and an incompetent candidate run for election. The nature chooses the type of each candidate (congruent or dissonant) and the type of the majority (type-C or type-P).
2. The majority choose between the competent and incompetent candidates.
3. The elected politician chooses $e_1 \in \{0, 1\}$, and the period 1 ends.
4. A challenger in the second election is drawn, and the nature determines the type of the challenger.
5. Considering the observed policy choice e_1 by the incumbent, the majority choose between the incumbent and the challenger (second election).
6. The elected politician chooses $e_2 \in \{0, 1\}$.

Note that the majority always vote for the competent candidate if the game ends at period 1. This is because choosing the competent candidate increases the majority's payoff by at least $\lambda > 0$, and the probability of the competent candidate being congruent is the same as that of the incompetent candidate. Therefore, there is no reason to choose the incompetent candidate in such a case.

¹⁰If this assumption does not hold, the dissonant type always chooses $e_1 = 0$.

The re-election motive resulting from the second election can provide dissonant politicians with an incentive to choose a policy preferred by the majority, and this incentive will be different between competent and incompetent politicians. Since the majority can observe the action of the incumbent politician before the second election, the policy choice in the first period can be a signal about the type of the incumbent. Moreover, the result in the first election can also transmit information on the type of the majority to the incumbent politician, which makes the politician's policy choice depend on the majority's voting strategy.

Our interest is whether there exists an equilibrium where the incompetent candidate beats the competent one in the first election where the two candidates differ only in the competency levels from the voters' perspective.

4 Equilibrium

4.1 Second election

As mentioned above, the politician in office in the second period will choose his or her most preferred policy because the politician does not need to seek re-election. Hence, the congruent type chooses $e_2 = 1$, and the dissonant type chooses $e_2 = 0$. Therefore, the majority prefer the congruent type to the dissonant one if there is no difference in the candidates' competency.

Although the types of candidates are unobservable by voters, the policy choice in the first period may provide information about the type of the incumbent. Since the congruent politician always chooses $e_1 = 1$, the majority can identify the incumbent as the dissonant type if the incumbent has chosen $e_1 = 0$.¹¹

If the incumbent has chosen $e_1 = 1$ in the first period, the majority update their belief about the type of the incumbent by the following rule. Let π_i denote the probability that the dissonant-type incumbent with competency level $i \in \{H, L\}$ chooses $e_1 = 1$. Then, the majority perceive that the incumbent who has chosen $e_1 = 1$ is the congruent type with the following probability:

$$\mu_i = \frac{\rho}{\rho + (1 - \rho)\pi_i}, \quad i = H, L. \quad (1)$$

Note that $\mu_i \geq \rho$ with strict inequality when $\pi_i < 1$. On the type of the challenger, the majority have no additional information and perceive that he or she is the congruent type with probability ρ .

The choice of the majority in the second election depends on (i) the competency levels of the incumbent and the challenger, (ii) the policy choice by the incumbent in the first period,

¹¹If the dissonant type chooses $e_1 = 0$ with positive probability, this belief of the majority is consistent with Bayes' rule and the incumbent's strategy. When the dissonant type does not choose $e_1 = 0$, the information set following $e_1 = 0$ is off-the-equilibrium-path. In this case, we assume that the majority's belief in this information set places zero probability on the congruent type. This restriction will be minimal, given the formulation that the congruent type never chooses $e_1 = 0$. Besley and Smart (2007) make a similar assumption.

and (iii) the type of the majority. The incumbent who has chosen $e_1 = 1$ is not less likely to be the congruent type than the challenger, and the incumbent who has chosen $e_1 = 0$ is the dissonant type with probability one. Hence, we have the following results.¹²

Remark 1. *Regardless of the type of the majority, the majority re-elect the competent incumbent who has chosen $e_1 = 1$ and replace the incompetent incumbent who has chosen $e_1 = 0$.*

In the case where the competent incumbent has chosen $e_1 = 0$, the majority perceive that the incumbent is certainly the dissonant type and face the tradeoff between competency and congruence. In this case, the incumbent cannot get re-elected if a competent challenger enters the second election. If the challenger is incompetent, the electoral result depends on the type of the majority. The type-C majority always prefer the competent incumbent to the incompetent challenger; hence, the competent incumbent can retain political power even if he or she has chosen $e_1 = 0$. When the majority is type-P, they re-elect the incumbent if and only if

$$\lambda \geq \rho v. \tag{2}$$

The left-hand side is the majority's payoff from electing the competent but dissonant incumbent, and the right-hand side is their payoff from electing the incompetent challenger. Although the incumbent is the dissonant type, the majority obtain λ from his or her competency. On the other hand, the challenger is incompetent but is the congruent type with probability ρ . To focus on the interesting case where the type of the majority matters for the electoral result, we assume the following.

Assumption 1. *We assume that the policy-oriented (type-P) majority prefer the incompetent challenger to the incumbent who is competent but is certainly dissonant:*

$$\rho v > \lambda.$$

Then, we obtain the following.

Remark 2. *Under Assumption 1, the survival of the competent incumbent who has chosen $e_1 = 0$ is as follows.*

- *If the challenger is incompetent and the majority is competency-oriented (type-C), the incumbent is re-elected at the second election.*
- *If the challenger is competent or the majority is policy-oriented (type-P), the incumbent loses at the second election.*

In the case where the incompetent incumbent has chosen $e_1 = 1$, the incumbent is more likely to be congruent than the challenger since $\mu_L \geq \rho$. Therefore, the majority prefer the

¹²Remember that the majority re-elect the incumbent if there is no difference between the incumbent and the challenger in the perceived probability of being congruent and the level of competency.

		Case (i): Competent incumbent		Case (ii): Incompetent incumbent	
		Type of majority		Type of majority	
		Type-C	Type-P	Type-C	Type-P
Policy choice	$e_1 = 1$	1	1	$1 - q$	$q\psi + (1 - q)$
	$e_1 = 0$	$1 - q$	0 (Assumption 1)	0	0

Figure 2: Re-election probability of the incumbent

incumbent to the incompetent challenger. When the majority are type-C, they prefer the competent challenger to the incumbent. When the majority are type-P and the challenger is competent, the majority re-elect the incumbent if and only if

$$\mu_L v \geq \lambda + \rho v. \quad (3)$$

The majority obtain $\mu_L v$ by re-electing the incumbent and obtain $\lambda + \rho v$ by electing the challenger. Let ψ denote the probability that the type-P majority re-elect the incompetent incumbent who has chosen $e_1 = 1$ in the election where the challenger is competent. Then, from (1) and (3), ψ can be written as

$$\psi(\pi_L) \begin{cases} = 1 & \text{if } \pi_L < \frac{\rho}{1-\rho} \frac{(1-\rho)v-\lambda}{1+\rho v}, \\ \in [0, 1] & \text{if } \pi_L = \frac{\rho}{1-\rho} \frac{(1-\rho)v-\lambda}{1+\rho v}, \\ = 0 & \text{if } \pi_L > \frac{\rho}{1-\rho} \frac{(1-\rho)v-\lambda}{1+\rho v}. \end{cases} \quad (4)$$

Note that ψ is non-increasing in π_L . This is because a higher level of π_L lowers the posterior probability that the incompetent incumbent who has chosen $e_1 = 1$ will be the congruent type (see (1)), thereby increasing the majority's incentive to vote for the competent challenger. Note that the majority replace the incompetent incumbent if $\pi_L = 1$ because $\mu_L = \rho$ in this case.

Summarizing the above argument, we obtain the following remark. Furthermore, Figure 2 summarizes the re-election probability of the incumbent.

Remark 3. *The survival of the incompetent incumbent who has chosen $e_1 = 1$ is as follows.*

- *If the challenger is incompetent, the majority re-elect the incumbent.*
- *If the challenger is competent and the majority are competency-oriented (type-C), the majority elect the challenger.*
- *If the challenger is competent and the majority are policy-oriented (type-P), the majority re-elect the incumbent with probability ψ .*

For the later analysis, we derive the continuation value for the type-P majority at the end of the first period. It depends on the competency of the incumbent and his or her policy

choice e_1 . When the majority is type-P and the incumbent is competent, the majority's expected payoff in the second period is given by

$$\tilde{V}_H(e_1) = \begin{cases} \lambda + \mu_H v & \text{if } e_1 = 1 \\ q\lambda + \rho v & \text{if } e_1 = 0 \end{cases} \quad (5)$$

If the incumbent has chosen $e_1 = 1$, the type-P majority re-elect the incumbent. Then, they obtain the value of competency λ and receive v with probability μ_H . If the incumbent has chosen $e_1 = 0$, the type-P majority replace the incumbent with the challenger who will be competent with probability q and will be the congruent type with probability ρ .

Similarly, when the majority is type-P and the incumbent is incompetent, the majority's expected payoff in the second period is given by

$$\tilde{V}_L(e_1) = \begin{cases} q \max\{\lambda + \rho v, \mu_L v\} + (1 - q)\mu_L v & \text{if } e_1 = 1 \\ q\lambda + \rho v & \text{if } e_1 = 0 \end{cases} \quad (6)$$

In the case where the incumbent has chosen $e_1 = 1$ and the challenger is competent, whether the type-P majority re-elect the incumbent depends on the magnitude relationship between $\mu_L v$ and $\lambda + \rho v$.

4.2 The choice of the incumbent

Next, we consider the choice of the incumbent in the first period. While the congruent type always chooses $e_1 = 1$, the dissonant type faces tradeoff between his or her preferred policy $e_1 = 0$ and the chance of re-election.

4.2.1 The belief of the incumbent

Although the incumbent cannot observe the type of the majority, the result of the first election provides information about it. Let ν_i denote the posterior probability that the majority are type-C when the candidate with competency level $i \in \{H, L\}$ has won the first election.

When the competent candidate has won the first election, the posterior probability that the majority are type-C is given by

$$\nu_H = \frac{\eta}{\eta + (1 - \eta)\sigma}, \quad (7)$$

where $\sigma \in [0, 1]$ denotes the probability that the type-P majority choose the competent candidate in the first election. Equation (7) shows that the voting behavior of the majority in the first period affects the belief of the incumbent politician.

We say that the majority use a pooling strategy if, regardless of their type, they always choose the competent candidate in the first election. In this case, $\sigma = 1$, and ν_H takes the minimum value of η .

On the other hand, we say that the majority use a separating strategy if the type-P majority choose the incompetent candidate in the first election. In this case, $\sigma = 0$, and

the incumbent can identify the type of the majority in the first period. Then, ν_H takes the maximum value of one.

When the incompetent candidate wins the first election, we assume that he or she can identify the majority as type-P because the type-C majority never elect the incompetent candidate. Thus, the posterior belief held by the incompetent incumbent is given by

$$\nu_L = 0. \tag{8}$$

4.2.2 Competent dissonant incumbent

Here, we consider the behavior of the competent dissonant incumbent. Choosing $e_1 = 1$, this incumbent can certainly obtain re-election payoff βR . Choosing $e_1 = 0$, he or she can obtain payoff r , but faces uncertainty about re-election. As Remark 2 shows, re-election occurs when the challenger is incompetent and the majority assign the highest priority to candidates' competency (i.e., their type is type-C). Hence, the perceived re-election probability is $(1 - q)\nu_H$. Then, the competent dissonant incumbent chooses $e_1 = 1$ if and only if¹³

$$\beta R \geq r + \beta(1 - q)\nu_H R. \tag{9}$$

Let $\Delta_H \equiv 1 - (1 - q)\nu_H$ denote the increase in the re-election probability by choosing $e_1 = 1$. Then, condition (9) can be written as

$$\Delta_H \beta R \geq r. \tag{10}$$

The left-hand side of (10) is the gain of choosing $e_1 = 1$ for the competent dissonant incumbent, which comes from the increase in the re-election probability, while the right-hand side is the opportunity cost of choosing $e_1 = 1$. Condition (10) shows that the competent dissonant incumbent is more likely to choose $e_1 = 1$ when he or she believes that the majority are more likely to be type-P (ν_H is low). Since the type-P majority replace the competent incumbent who is exposed as dissonant, the competent incumbent has a large incentive to pretend to be congruent in such a situation. On the other hand, since the type-C majority re-elect the competent incumbent regardless of his or her policy choice if the challenger is incompetent, the competent incumbent who believes that the majority is type-C has a large incentive to pursue his or her own interest. Therefore, a low value of ν_H enhances the electoral accountability of the competent dissonant incumbent.

Moreover, the competent dissonant incumbent is more likely to choose $e_1 = 1$ when q is large. While the competent dissonant incumbent who has chosen $e_1 = 0$ has some chance of being re-elected if the challenger is incompetent, this chance disappears if the challenger is competent. Hence, choosing $e_1 = 1$ increases the re-election probability more greatly when the challenger is more likely to be competent. Therefore, the competent dissonant incumbent has a large incentive to act in the majority's interest when the challenger is more likely to be competent.

¹³we assume that the competent dissonant incumbent prefers $e_1 = 1$ if he or she is indifferent between $e_1 = 0$ and $e_1 = 1$.

As we discussed above, the posterior belief ν_H takes the minimum value η when the majority use the pooling strategy ($\sigma = 1$). If the probability q is small enough and satisfies

$$q < \frac{r - (1 - \eta)\beta R}{\eta\beta R} \equiv \underline{q}_H, \quad (11)$$

then condition (10) does not hold even if ν_H is the minimum value η . Hence the competent dissonant incumbent always chooses $e_1 = 0$ ($\pi_H = 0$) in this case. On the other hand, if $q \geq \underline{q}_H$, the competent dissonant incumbent chooses $e_1 = 1$ if the majority use the pooling strategy.

The posterior belief ν_H takes the maximum value of one when the majority use the separating strategy ($\sigma = 0$). If the probability q is large enough and satisfies

$$q \geq \frac{r}{\beta R} \equiv \bar{q}_H, \quad (12)$$

then condition (10) holds even if ν_H takes the maximum value. In this case, the competent dissonant incumbent always chooses $e_1 = 1$ ($\pi_H = 1$). On the other hand, if $q < \bar{q}_H$, the competent dissonant incumbent chooses $e_1 = 0$ if the majority use the separating strategy. Note that $\bar{q}_H > \underline{q}_H$ because $\beta R > r$ and $\eta < 1$.

The following lemma summarizes the above results.

Lemma 1. *Let Assumption 1 hold. Then, the competent dissonant incumbent is more likely to choose $e_1 = 1$ when he or she believes that the majority are more likely to be policy-oriented (ν_H is small) and the challenger is more likely to be competent (q is large).*

- When q is sufficiently small and satisfies $q < \underline{q}_H$, the competent dissonant incumbent always chooses $e_1 = 0$, i.e., $\pi_H = 0$.
- When q is sufficiently large and satisfies $q \geq \bar{q}_H$, the competent dissonant incumbent always chooses $e_1 = 1$, i.e., $\pi_H = 1$.
- When q satisfies $q \in [\underline{q}_H, \bar{q}_H)$, the equilibrium policy choice by the competent dissonant incumbent depends on the voting strategy of the majority. If the majority use the pooling strategy ($\sigma = 1$), then the competent dissonant incumbent chooses $e_1 = 1$, i.e., $\pi_H = 1$. If the majority use the separating strategy ($\sigma = 0$), then the competent dissonant incumbent chooses $e_1 = 0$, i.e., $\pi_H = 0$.

4.2.3 Incompetent dissonant incumbent

Next, we consider the behavior of the incompetent dissonant incumbent. If this incumbent chooses $e_1 = 0$, his or her payoff is zero because the majority elect the challenger in the second election. Choosing $e_1 = 1$, this incumbent has a chance to get re-elected. As Remark 3 shows, re-election certainly occurs when the challenger is incompetent. When the challenger is competent, re-election occurs with probability ψ if the majority are type-P, and re-election never occurs if the majority are type-C. Hence, the perceived re-election probability is $q(1 - \nu_L)\psi + (1 - q) \equiv \Delta_L$. Then, the incompetent dissonant incumbent chooses $e_1 = 1$ if

$$\Delta_L \beta R > r. \quad (13)$$

Condition (13) shows that if $\psi > 0$, the incompetent dissonant incumbent is more likely to choose $e_1 = 1$ when he or she believes that the majority are more likely to be type-P. While the type-C majority always prefer the competent challenger to the incompetent incumbent regardless of the incumbent's policy choice, the type-P majority prefer the incompetent incumbent to the competent challenger with some probability if the incumbent has acted in the majority's interest in the first period. Thus, the belief that the majority are more likely to be type-P enhances the incentive to choose $e_1 = 1$.

Contrary to the case of the competent dissonant incumbent, the incompetent dissonant incumbent is more likely to choose $e_1 = 1$ when q is small. While the incompetent dissonant incumbent who has chosen $e_1 = 1$ can certainly get re-elected if the challenger is incompetent, the re-election is uncertain if the challenger is competent. Hence, choosing $e_1 = 1$ increases the re-election probability more greatly when the challenger is more likely to be incompetent. Therefore, the incompetent dissonant incumbent has a large incentive to act in the majority's interest when the challenger is more likely to be incompetent.

From condition (13), the probability that the incompetent dissonant incumbent chooses $e_1 = 1$ can be written as

$$\pi_L(\psi) \begin{cases} = 1 & \text{if } \psi > \frac{1}{q(1-\nu_L)} \left(\frac{r}{\beta R} - (1-q) \right), \\ \in [0, 1] & \text{if } \psi = \frac{1}{q(1-\nu_L)} \left(\frac{r}{\beta R} - (1-q) \right), \\ = 0 & \text{if } \psi < \frac{1}{q(1-\nu_L)} \left(\frac{r}{\beta R} - (1-q) \right). \end{cases} \quad (14)$$

Naturally, the incompetent dissonant incumbent is more likely to choose $e_1 = 1$ if the type-P majority are more likely to reward high policy performance by re-election (i.e., ψ is high).

From (4) and (14), we can derive the equilibrium values of π_L and ψ as follows.

Lemma 2. Define \underline{q}_L and \bar{q}_L as

$$\underline{q}_L \equiv \frac{\beta R - r}{\beta R} \quad \bar{q}_L \equiv \frac{\beta R - r}{\eta \beta R}. \quad (15)$$

Then, the equilibrium values of π_L and ψ are as follows.

- In the case of $\hat{v} > 1/(1-\rho)$
 - If q is sufficiently small and satisfies $q \leq \underline{q}_L$, then $\pi_L = 1$ and $\psi = 0$.
 - If $q \in (\underline{q}_L, \bar{q}_L)$, then $\pi_L = \bar{\pi} \in (0, 1)$ and $\psi = \bar{\psi} \in (0, 1)$, where

$$\bar{\pi} \equiv \frac{\rho}{1-\rho} \frac{(1-\rho)v - \lambda}{\lambda + \rho v}, \quad \bar{\psi} \equiv \frac{r - (1-q)\beta R}{(1-\eta)q\beta R}. \quad (16)$$

- If q is sufficiently large and satisfies $q \geq \bar{q}_L$, then $\pi_L = 0$ and $\psi = 1$.
- In the case of $\hat{v} \leq 1/(1-\rho)$
 - If $q \leq \underline{q}_L$, then $\pi_L = 1$ and $\psi = 0$.
 - If $q > \underline{q}_L$, then $\pi_L = \psi = 0$.

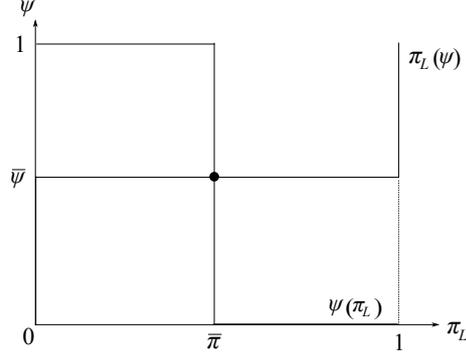


Figure 3: The relationship between ψ and π_L .

Proof. See the Appendix. □

Figure 3 describes the graphs of the reaction functions $\pi_L(\psi)$ and $\psi(\pi_L)$ in the case of $\hat{v} > 1/(1 - \rho)$ and $q \in (\underline{q}_L, \bar{q}_L)$. The equilibrium values of π_L and ψ are represented by the intersection of the two graphs. Lemma 2 states that π_L is non-increasing in q in the equilibrium, which is natural as the incompetent dissonant incumbent has a larger incentive to choose $e_1 = 1$ when the challenger is less likely to be competent.

The policy choice is different between competent and incompetent incumbents, and this is because of the assumption that voters cannot commit to re-election strategies. If the majority could commit to punish the incumbent after $e_1 = 0$ and to reward him or her after $e_1 = 1$, both the competent and incompetent incumbents would face the same decision problem. However, the majority cannot commit to who to vote for, and the electoral advantage or disadvantage resulting from competency affects the electoral benefit of choosing $e_1 = 1$. Thus, the incumbent's incentive to act in the majority's interest depends on his or her competency.

4.3 The first election

Finally, we consider the choice of the majority in the first election. When the majority is type-C, they always vote for the competent candidate. The type-P majority weigh the candidate's competency against the expected policy choice to decide who to vote for.

By electing the competent candidate, who will choose the policy $e_1 = 1$ with probability $\rho + (1 - \rho)\pi_H$, the type-P majority obtain

$$V_H(\pi_H) \equiv \lambda + [\rho + (1 - \rho)\pi_H](v + \beta\tilde{V}_H(1)) + [(1 - \rho)(1 - \pi_H)]\beta\tilde{V}_H(0), \quad (17)$$

where $\tilde{V}_H(e_1)$ ($e_1 \in \{0, 1\}$) comes from (5). Similarly, by electing the incompetent candidate, who will choose the policy $e_1 = 1$ with probability $\rho + (1 - \rho)\pi_L$, the type-P majority obtain

$$V_L(\pi_L) \equiv [\rho + (1 - \rho)\pi_L](v + \beta\tilde{V}_L(1)) + [(1 - \rho)(1 - \pi_L)]\beta\tilde{V}_L(0), \quad (18)$$

where $\tilde{V}_L(e_1)$ comes from (6). The type-P majority choose the competent candidate in the first election if and only if $V_H(\pi_H) \geq V_L(\pi_L)$.¹⁴

Lemma 3. *The expected payoffs of the type-P majority, $V_H(\pi_H)$ and $V_L(\pi_L)$, satisfy the following properties:*

1. $V_i(\pi_i)$ is increasing in π_i ($i = H, L$).
2. $V_H(\pi_H) > V_L(\pi_L)$ if $\pi_H = \pi_L$.

Proof. See the Appendix. □

Lemma 3 states that the expected payoff for the type-P majority from electing the candidate with competency level i increases in the probability that this elected candidate chooses $e_1 = 1$. Lemma 3 also states that the type-P majority prefer the competent candidate if the competent and incompetent candidates choose $e_1 = 1$ with the same probability. Hence, for the incompetent candidate to win, it is necessary that π_L must be greater than π_H : the incompetent candidate wins the first election only if the majority face the tradeoff between the candidates' competency and their representation. However, the existence of this tradeoff is insufficient for the type-P majority to vote for the incompetent candidate. In addition, for the separating equilibrium to exist, the type-P majority must place a premium on the policy choice: their policy payoff (v) from $e_1 = 1$ must be sufficiently large, compared with their benefit from having a competent politician (λ).

Let us consider the case where the dissonant competent politician never chooses $e_1 = 1$ (i.e., $\pi_H = 0$). The following lemma shows when it is optimal for the type-P majority to elect the incompetent candidate in this situation.

Lemma 4. *The relationship among $V_H(0)$, $V_L(\bar{\pi})$, and $V_L(1)$ is given as follows.*

1. *If the policy payoff v is sufficiently small compared with the benefit of competency λ and the condition $\hat{v} \leq \underline{v}(q)$ holds, then $V_H(0) \geq V_L(1)$, where*

$$\underline{v}(q) \equiv \frac{1 + \beta\rho(1 - q)}{(1 - \rho)(1 - \beta\rho)}. \quad (19)$$

2. *If \hat{v} is in $(\underline{v}(q), \bar{v}(q)]$, then $V_L(\bar{\pi}) \leq V_H(0) < V_L(1)$, where*

$$\bar{v}(q) = \frac{\rho[2 + \beta q(1 - \rho)] + \sqrt{\rho^2[2 + \beta q(1 - \rho)]^2 + 4\rho(1 - \rho)(1 - \beta\rho)[1 + \beta(1 - q)\rho]}}{2\rho(1 - \rho)(1 - \beta\rho)}. \quad (20)$$

3. *If \hat{v} is sufficiently large and satisfies $\hat{v} > \bar{v}(q)$, then $V_L(\bar{\pi}) > V_H(0)$.*

Proof. See the Appendix. □

¹⁴We assume that the type-P majority elect the competent candidate if they are indifferent between choosing competent and incompetent candidates.

Lemma 4 states that the majority vote for the competent candidate regardless of his or her expected policy choice when the policy payoff v is sufficiently small. However, when the policy payoff v is sufficiently large and the competent candidate is expected to choose $e_1 = 0$ after winning, the type-P majority vote for the incompetent candidate if this candidate will choose $e_1 = 1$ with sufficiently high probability.

4.4 Equilibrium

We focus on the Perfect Bayesian Equilibrium in which the majority in the first period use a pure strategy (i.e., σ is either 1 or 0). Hence, two types of equilibria are possible: the pooling equilibrium in which the majority always vote for the competent candidate in the first election, and the separating equilibrium in which the type-C majority vote for the competent candidate while the type-P majority vote for the incompetent candidate.

Let us consider the case of $\hat{v} \leq \underline{v}(q)$, which is the situation where the type-P majority's payoff of having a competent politician λ dominates the policy payoff v . In this case, the condition $V_H(\pi_H) \geq V_L(\pi_L)$ holds for any π_H and π_L (from Lemma 4). Therefore, the type-P majority prefer the competent candidate in the first election, and the unique equilibrium is a pooling one.

Next, we consider the case of $q \geq \bar{q} \equiv \min\{\bar{q}_H, \bar{q}_L\}$. In this case, the probability that the future challenger is competent is high, and this situation enhances the accountability of the competent dissonant incumbent but undermines that of the incompetent dissonant incumbent.¹⁵ Specifically, in this case, at least either $\pi_H = 1$ or $\pi_L = 0$ holds, because $\pi_H = 1$ if $q \geq \bar{q}_H$ from Lemma 1 and $\pi_L = 0$ if $q \geq \bar{q}_L$ from Lemma 2. Since the competent candidate is more accountable than the incompetent one ($\pi_H \geq \pi_L$), the type-P majority prefer the competent candidate in the first election (from Lemma 3). Hence, the pooling equilibrium is the unique equilibrium in this case.

The following proposition summarizes the above results.

Proposition 1. *Let Assumption 1 hold. Then, there is a unique equilibrium in which the majority use the pooling strategy if either of the following conditions holds:*

1. *The policy payoff v is small, compared with the benefit of competency λ , enough to satisfy $\hat{v} \leq \underline{v}(q)$.*
2. *The probability that a competent challenger runs in the second election, q , is large enough to satisfy $q \geq \bar{q} = \min\{\bar{q}_H, \bar{q}_L\}$.*

Next, we consider the more complicated cases that satisfy $\hat{v} > \underline{v}(q)$ and $q < \bar{q}$. The first condition $\hat{v} > \underline{v}(q)$ means that the policy payoff v is not too small, compared with the payoff from competency λ . Under this condition, $V_L(1) > V_H(0)$ holds from Lemma 4, and hence, the type-P majority would vote for the incompetent candidate if the political

¹⁵Recall that when the challenger is more likely to be competent, the competent dissonant incumbent has a larger incentive to choose $e_1 = 1$, while the incompetent dissonant incumbent has a smaller incentive to choose $e_1 = 1$.

accountability of the incompetent incumbent (π_L) is sufficiently greater than that of the competent incumbent (π_H). The second condition $q < \bar{q}$ yields the tradeoff between the candidates' competency and their representation of the majority's political preferences. Under this condition, the incompetent incumbent chooses $e_1 = 1$ with probability $\pi_L \geq \bar{\pi} \in (0, 1)$, while the competent incumbent chooses $e_1 = 0$ if the incumbent believes that the majority is type-C ($\nu_H = 1$) or the challenger is likely to be incompetent ($q < \underline{q}_H$).¹⁶

For the separating strategy to be optimal for the majority, π_L and \hat{v} must be sufficiently large, and π_H must be sufficiently small. Since π_L is decreasing in q and π_H is increasing in q , the type-P majority will vote for the incompetent candidate if q is sufficiently small. When \hat{v} is sufficiently large, the separating equilibrium exists because the type-P majority highly evaluate the incompetent candidate's better representation of their preferences. When q is greater than \underline{q}_H , the majority's voting strategy affects π_H through the change in the incumbent's belief about the type of the majority. Hence, multiple equilibria can arise in this case. The following proposition shows the conditions under which the separating equilibrium exists.

Proposition 2. *Let Assumption 1 hold. Moreover, we assume that $q < \bar{q}$ and $v > \underline{v}(q)$.*

1. *In the case of $v \leq \bar{v}(q)$, the following hold.*

- (a) *If $q > \underline{q}_L$, then there is a unique pooling equilibrium.*
- (b) *If $q \leq \underline{q}_L$, then a separating equilibrium exists.*
- (c) *If $\underline{q}_H \leq q \leq \underline{q}_L$, then both types of equilibria exist.*

2. *In the case of $\hat{v} > \bar{v}(q)$, the following hold.*

- (a) *The separating equilibrium always exists.*
- (b) *If $q \geq \underline{q}_H$, then the pooling equilibrium also exists.*

Proof. See the Appendix □

Figure 4 describes the parameter spaces in which each type of equilibrium exists, where panels (a) and (b) correspond to the cases of $\underline{q}_H < \underline{q}_L < \bar{q}$ and $\underline{q}_L < \underline{q}_H < \bar{q}$, respectively.¹⁷ The vertical axes describe the range of $\hat{v} > 1/(1 - \rho)$.¹⁸

Let us consider the case of $\underline{v}(q) < v \leq \bar{v}(q)$, in which the policy payoff v takes an intermediate value. In this case, from Lemma 4, the type-P majority vote for the incompetent candidate if they are certain that the incompetent incumbent chooses $e_1 = 1$ and the competent incumbent chooses $e_1 = 0$ (i.e., $\pi_L = 1$ and $\pi_H = 0$), and vote for the competent

¹⁶Note that $\hat{v} > \underline{v}(q)$ implies $\hat{v} > 1/(1 - \rho)$, which assures $\bar{\pi} \in (0, 1)$.

¹⁷If η equals to one, then \underline{q}_H coincides with \bar{q}_H and \bar{q}_L coincides with \underline{q}_L . As η decreases, \underline{q}_H decreases from \bar{q}_H while \bar{q}_L increases from \underline{q}_L . When r is sufficiently large, the relation $\underline{q}_L < \bar{q}_H$ holds. In this case, depending on the value of η , the following relations are possible: (i) $\underline{q}_L < \bar{q}_L < \underline{q}_H < \bar{q}_H$, (ii) $\underline{q}_L < \underline{q}_H < \bar{q}_L < \bar{q}_H$, and (iii) $\underline{q}_H < \underline{q}_L < \bar{q}_H < \bar{q}_L$. When r is sufficiently small, the relation $\bar{q}_H < \underline{q}_L$ holds. In this case, the possible relation among the four thresholds is $\underline{q}_H < \bar{q}_H < \underline{q}_L < \bar{q}_L$.

¹⁸Note that $\underline{v}(q) > 1/(1 - \rho)$.

candidate if $\pi_L = \bar{\pi}$. When the future challenger is sufficiently likely to be competent, specifically if $q > \underline{q}_L$ holds, then the incompetent dissonant incumbent chooses $\pi_L \leq \bar{\pi}$ (see Lemma 2), and hence, the pooling equilibrium uniquely exists. When $q \leq \underline{q}_L$ and $q < \underline{q}_H$, $\pi_L = 1$ and $\pi_H = 0$, and hence, the separating equilibrium uniquely exists. When $q \geq \underline{q}_H$, the policy choice of the competent dissonant incumbent depends on his or her posterior belief about the type of the majority, and this belief must be consistent with the majority's voting strategy. If the majority use the pooling strategy, then the electoral result conveys no information about the type of the majority, and the posterior belief is equal to the prior belief. Then, the competent dissonant incumbent chooses $e_1 = 1$ ($\pi_H = 1$), which makes the pooling strategy optimal for the majority. If the majority use the separating strategy, the competent dissonant incumbent perceives that the majority is certainly type-C and chooses $e_1 = 0$ ($\pi_H = 0$), which makes the separating strategy optimal if $\pi_L = 1$ ($q \leq \underline{q}_L$). Hence, when $\underline{q}_H \leq q \leq \underline{q}_L$, both types of equilibria exist.

In the case of $\hat{v} > \bar{v}(q)$ where the policy payoff v is extremely high compared with the payoff from competency λ , from Lemma 4, the type-P majority vote for the incompetent incumbent if $\pi_L \geq \bar{\pi}$ (this is satisfied under $q < \bar{q}$) and $\pi_H = 0$. If $q < \underline{q}_H$, then the competent dissonant incumbent chooses $\pi_H = 0$, and the separating equilibrium uniquely exists in this case. If $q \geq \underline{q}_H$, as explained above, then the policy choice of the competent incumbent π_H depends on the majority's voting strategy; $\pi_H = 0$ when the majority use the separating strategy, and $\pi_H = 1$ when the majority use the pooling strategy. Hence, both types of equilibria exist in this case.

Summarizing,

- The policy-oriented majority elect the incompetent candidate when
 - the majority place sufficient priority on the candidates' expected policy choice, compared with their competency (\hat{v} is sufficiently large), and
 - the probability that the incompetent dissonant incumbent chooses the majority's preferred policy is sufficiently large, compared with that of the competent dissonant incumbent (π_L is sufficiently greater than π_H).
- π_H increases with q (the probability of the challenger being competent), while π_L decreases with q .
- The incumbent's policy choice also depends on his or her posterior belief about the type of the majority, and the majority's voting strategy affects it. Due to this relation, multiple equilibria can arise.
- When the majority use the separating strategy, the electoral result reveals the type of the majority. The competent candidate's victory reveals that the majority is competency-oriented. As a result, under an appropriate set of parameter values, the competent incumbent never makes policy compromise to the majority, and this policy choice in turn makes the majority's separating strategy optimal.

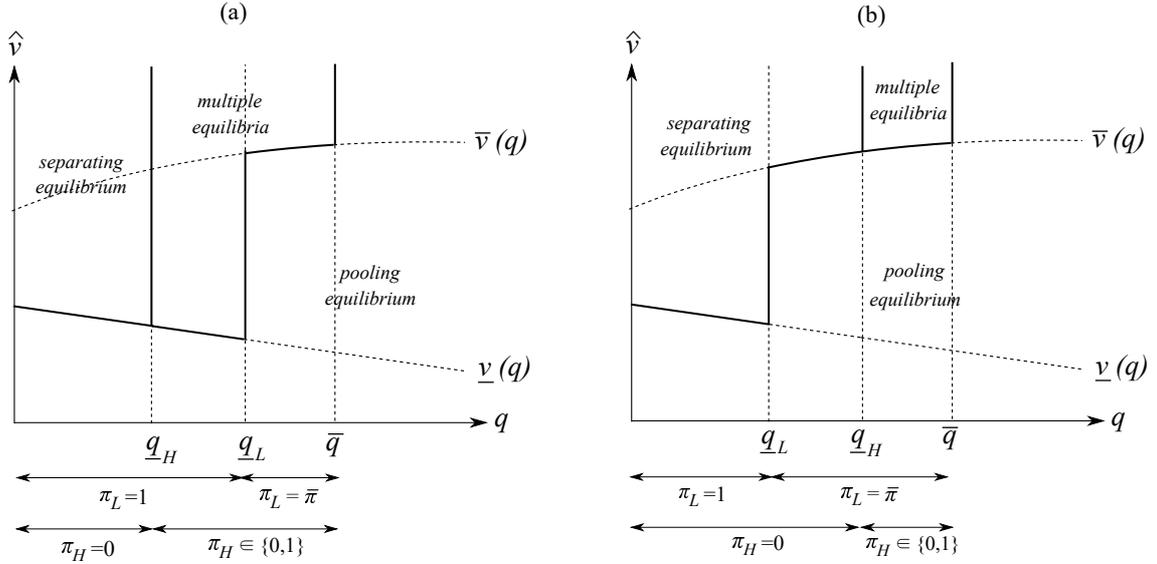


Figure 4: Equilibrium

4.5 On the signaling role of voting

The signaling mechanism in voting explained above means that the expectation of the type-P majority that the competent politician may not represent their interests can be a self-fulfilling prophecy. Let us suppose that the type-P majority vote for the incompetent candidate in the first election fearing that the competent politician would not adopt their preferred policy. Then, if the competent politician is elected in the first election, he or she perceives that the majority is competency-oriented. Since this belief undermines the accountability of the competent politician, the fear of the policy-oriented majority is eventually realized.

This self-fulfilling feature as a result of voters' signaling makes the victory of the incompetent candidate more likely. Let us consider the case of $\underline{q}_H \leq q < \bar{q}$. As described in Figure 4, multiple equilibria arise in this case if v is sufficiently large, but the existence of the separating equilibrium depends on the signaling mechanism. To see the role of signaling, we assume that the competent incumbent's belief ν_H is fixed at the prior η . Then, from (11), the competent dissonant incumbent will choose $e_1 = 1$ if and only if $q \geq \underline{q}_H$. Hence, in the case of $\underline{q}_H \leq q < \bar{q}$, the separating equilibrium cannot exist if the election does not convey any information about the type of the majority.

5 Empirical predictions and implications

5.1 Policy conflict

The incompetent candidate is elected when the policy payoff v is sufficiently large, compared with the type-P majority's payoff from having a competent politician (λ). While the majority obtain the payoff λ if the politician is competent regardless of his or her policy choice, they enjoy the policy payoff v only if their preferred policy is chosen. Hence, when $\hat{v} = v/\lambda$ is large, the majority place priority on the politicians' choice rather than their competency. Then, in what situation does \hat{v} become large in real world societies?

A sharp policy conflict between the majority and other citizens (e.g., the rich) increases the importance of policy choice and causes the situation where \hat{v} is large. When policy conflict is large, the majority's payoff varies greatly depending on whether their preferred policy is chosen or not. Policy conflicts are caused by, for instance, economic changes that produce disparity between economic winners and losers. Economic losers will require the government to change the status quo, but economic winners will not.

Prediction 1. *When policy conflict becomes more severe, the majority are more likely to elect a less competent candidate.*

Due to the recent progress of globalization, controversial topics such as immigration and trade policy are becoming major political issues. In the United States, imports from China have dramatically increased since the 1990s, and this new trade has increased unemployment and decreased wages in regions with import-competing manufacturing industries (Autor et al. 2013). Autor et al. (2017) show that the growing imports from China contribute to the ideological polarization in Congress.

Our model suggests that these factors may be the reasons why U.S. voters have consistently elected less-experienced candidates in presidential elections since 1996. Conflict of interests caused by these factors has possibly made voters put candidates' expected policy choice before their credentials. In particular, Donald Trump's win in the 2016 election was largely attributable to the support from those who felt dissatisfied with the rise of global competition and the influx of immigrants. Trump's campaign pledges favoring protectionism may be one of the causes of support from these citizens.

5.2 Quality of the challenger

The expected level of the challenger's competency affects the behavior of the incumbent, but this effect is different between competent and incompetent politicians. The expectation that a competent challenger is likely to run for the future election is positively associated with the accountability of a competent politician, but its association is negative for an incompetent politician.

As a result, the expected quality of the challenger affects the majority's choice between competent and incompetent candidates. The majority is more likely to choose the incompetent candidate when the future challenger is more likely to be incompetent.

Prediction 2. *The probability that a competent challenger will run for the future election enhances the accountability of competent politicians but undermines that of incompetent politicians. As a result, incompetent candidates are more likely to win against competent candidates when the future challenger is more likely to be incompetent.*

5.3 Value of holding office

As in standard political agency models, our model also predicts that an increase in the reward for holding office (R) affects the voters' welfare through both "incentive and selection effects." While an increase in the reward enhances the incentive of the dissonant-type incumbent to choose the majority's preferred policy (incentive effect), this effort of pretending to be the congruent type undermines the precision of the voters' information obtained from the incumbent's policy choice. Hence, the incentive effect is harmful for the selection of congruent-type politicians: the dissonant politician is re-elected with high probability when the reward for holding office is large (selection effect).

Moving forward from standard models, our model yields a prediction on the effect of the politicians' reward on the voters' preference for the candidates' competency. If the reward for the politician is large enough, the majority prefer the competent candidate to the incompetent one in the first election. Large rewards make the dissonant-type politician choose the majority's preferred policy in the first period, regardless of his or her competency level. This incentive effect eliminates the behavioral difference between competent and incompetent politicians, and hence, the majority vote for the competent candidate.

Prediction 3. *When the reward for the politician is large enough, competent candidates win against incompetent candidates.*

This result is complementary to the existing theoretical literature that analyzes the effects of reward for politicians on their quality, focusing on citizens' entry decisions into the political sector (Caselli and Morelli 2004; Messner and Polborn 2004; Mattozzi and Merlo 2008). In these models, competent politicians can provide better public service but have higher opportunity costs of running for elections. Higher rewards change the balance between the benefit and opportunity costs of being a politician, but whether those attract competent individuals into the political sector depends on the models. While Caselli and Morelli (2004) predict that a higher reward increases the average quality of politicians, Messner and Polborn (2004) and Mattozzi and Merlo (2008) predict the opposite effect.

Existing empirical studies show that higher rewards for politicians attract more competent candidates and improve the quality of the elected politician (Ferraz and Finan 2011a, Kotakorpi and Poutvaara 2011, Gagliarducci and Nannicini 2013). However, to the best of our knowledge, no empirical research has examined our prediction that high rewards for politicians cause voters' preference for competent candidates.

5.4 Valence and political representation

Finally, we discuss the model's prediction on how the competency of elected politicians relates with their representation of voters' preferences. Since both the competency of elected politicians and their policy choice are endogenously determined in the model, we cannot use comparative statics. To predict the "ceteris paribus" relation between competency and political representation, we alternatively compare the behavior of competent and incompetent politicians fixing all parameters. Since the incompetent candidate can be elected only in the separating equilibrium, we focus on the region of the parameters where the separating equilibrium exists.

5.4.1 Political accountability

First, we consider the relation between competency and political accountability. We define political accountability as the degree to which the re-election motive can discipline the policy choice of the incumbent. We can measure it by the probability that the dissonant incumbent will choose the majority's preferred policy in the first period.

In the first period of the separating equilibrium, the majority's preferred policy is more likely to be chosen by the incompetent incumbent than by the competent incumbent. For the incompetent incumbent, who has the disadvantage of competency, to get re-elected, it is necessary to choose the majority's preferred policy in his or her first term. When the parameters lie in the region where the separating equilibrium is possible, choosing the majority's preferred policy sufficiently enhances the re-election probability. As a result, the re-election motive disciplines the incompetent dissonant incumbent, and the majority's preferred policy is realized with positive probability. On the other hand, the competent dissonant incumbent never chooses the majority's preferred policy in the separating equilibrium. This is because the competent incumbent elected in the first election perceives that the majority is competency-oriented and his or her advantage of competency will dominate the next election. Hence, the re-election motive cannot make the competent dissonant incumbent accountable.

If the parameters lie in the region where multiple equilibria are possible, the relation between competency and accountability is more ambiguous. When the majority use the pooling strategy, the competent incumbent cannot identify the majority's type. Hence, in contrast to the separating equilibrium, the competent dissonant incumbent certainly chooses the majority's preferred policy in the first period of the pooling equilibrium. As a result, if $q > \underline{q}_L$, then the competent incumbent in the pooling equilibrium is more likely to choose the majority's preferred policy in the first period than the incompetent incumbent in the separating equilibrium.

Prediction 4. *The relation between the incumbent's competency and his or her political accountability is as follows.*

1. *When the pair of parameters (q, \hat{v}) lie in the region where a unique separating equilibrium exists, the incompetent incumbent is more accountable than the competent incumbent.*

2. *When the pair of parameters (q, \hat{v}) lie in the region of multiple equilibria, the incompetent incumbent is more accountable than the competent incumbent in the separating equilibrium, but is less accountable than the competent incumbent in the pooling equilibrium.*

The first statement in Prediction 4 is consistent with the hypothesis, called as the “marginality hypothesis” in the literature, that elected politicians who have won an election with a small margin (i.e., electorally weak politicians) will compromise more greatly to voters, compared with electorally strong ones.¹⁹

Contrary to this hypothesis, existing theories predict that electoral advantage makes politicians choose a policy close to voters’ preferences (Ansolabehere and Snyder 2000; Groseclose 2001; Aragonés and Palfrey 2002). The models of these studies assume that candidates announce their policy platforms before an election and can commit to them. The valence advantage makes politicians choose policies close to the median’s ideal point because the advantages become of increasing importance when the policy platforms among candidates converge. However, this mechanism does not work in our model since we assume that candidates cannot commit to policies before elections.

Bernhardt et al. (2011) provide a dynamic election model in which candidates cannot commit to policies before elections. In contrast to our model where the candidates’ valence can be observed by the voters before elections, they consider the environment where voters can observe politicians’ valence only after they are elected. They show that elected politicians with higher valence are more likely to compromise to voters but can win re-election with small compromise. In contrast to their results, our model shows the possibility that elected politicians with higher valence are less likely to compromise in their first term.²⁰

Empirical findings on the relationship between political representation and valence advantage is mixed. Ansolabehere et al. (2001) show that incumbent politicians, who generally enjoy advantage, are more likely to choose moderate policies than challenger candidates. Stone and Simas (2010) show that the ideological distance between incumbents and their district’s median opinion decreases with the competency levels of incumbents. On the other hand, Griffin (2006) finds evidence supporting the marginality hypothesis that legislatures elected from more competitive districts (i.e., electorally weak legislatures) behave in line with their constituencies’ preferences.²¹

¹⁹This hypothesis was initially proposed by MacRae (1952), according to Fiorina (1973).

²⁰While politicians can be elected at most twice, like U.S. presidents, in our model, Bernhardt et al. (2011) analyze the environment where politicians can be elected more than twice and show that the relation between valence advantage and policy extremeness changes with politicians’ seniority: valence advantage and policy extremeness are positively related among re-elected politicians because high-valence politicians can get re-elected with small compromise.

²¹As Bernhardt et al. (2011) suggest, this mixed evidence may be attributable to the fact that the relation between valence and political representation is different between first-term and senior politicians.

5.4.2 Term-limit effects

In the standard political agency model, incumbent politicians choose their preferred policy when they face binding term limits. Hence, whether term limits bind or not affects politicians' performance.

The above argument implies that this effect of term limits can be different between competent and incompetent incumbents. In the separating equilibrium, the effect of binding term limits on policy performance is observed only when the incumbent is incompetent. In the first period, the incompetent incumbent chooses $e_1 = 1$ with probability $\rho + (1 - \rho)\pi_L$, where $\pi_L \geq \bar{\pi} \in (0, 1)$. In the second period, the re-elected incompetent incumbent chooses $e_2 = 1$ with probability $\rho/(\rho + (1 - \rho)\pi_L)$. Hence, the binding term limit decreases the probability that $e = 1$ is implemented if and only if

$$\pi_L > \frac{\sqrt{\rho} - \rho}{1 - \rho}. \quad (21)$$

While $e_1 = 1$ is more likely when π_L is large, a large level of π_L undermines the selection of the congruent type in the second election. This deteriorating selection effect decreases the probability that $e_2 = 1$ occurs. Therefore, policy performance becomes worse in the second term of the incompetent incumbent when π_L is large. Condition (21) holds when $\pi_L = 1$, which occurs when the future challenger is likely to be incompetent. When $\pi_L = \bar{\pi}$, it is satisfied when \hat{v} is sufficiently large since $\bar{\pi}$ is increasing in \hat{v} . On the other hand, the competent incumbent always chooses his or her preferred policy in the separating equilibrium because elections cannot make competent dissonant incumbents accountable. Hence, the competent incumbent chooses $e_t = 1$ with probability ρ for all $t \in \{1, 2\}$.

As in the previous argument, the prediction is more ambiguous when multiple equilibria are possible. In the pooling equilibrium, the competent incumbent chooses $e_1 = 1$ with certainty and chooses $e_2 = 1$ with probability ρ . Hence, the effect of a binding term limit on policy performance is negative for the competent incumbent in this case.

Prediction 5. *The relation between competency and the term-limit effect is as follows.*

1. *In the separating equilibrium, binding term limits affect policy performance only when incumbent politicians are incompetent. The effect is negative if and only if condition (21) holds. This condition holds if the future challenger is likely to be incompetent or if the majority place sufficiently great importance on the policy choice of politicians, compared with their competency.*
2. *In the pooling equilibrium, binding term limits negatively affect the policy performance of competent politicians.*

6 Some evidence on the term-limit effect

Although rigorous tests of our theory are beyond the scope of this paper, this section briefly examines whether the effect of term limits on incumbents' behavior depends on their competency, as Prediction 5 insists, using panel data of U.S. states.

Many empirical studies have analyzed the term-limit effect. They generally confirm the prediction of the political agency model that the re-election motive matters for politicians' behavior. Besley and Case (1995b) compare policy outcomes in U.S. states where governors' term limits are binding with those in states where term limits are not binding. Using data from 1950 to 1986, they find that per capita government expenditures and taxes are higher in states where governors face binding term limits. This finding means that the incentive effect matters. In the political agency model, incumbent politicians behave to preserve their reputation in order to be re-elected. When incumbent politicians cannot seek re-election by term limits, they do not make efforts to decrease state expenditures and taxes for their reputations.²²

Extending the framework of Besley and Case (1995b), we examine how this term-limit effect is related with governors' competency levels. We use panel data of 48 continental U.S. states from 1950 to 2000 and estimate the term-limit effect by running the following regression:²³

$$p_{st} = \alpha_s + \delta_t + \gamma_1 \textit{binding limit}_{st} + \gamma_2 \textit{experience}_{st} + \gamma_3 \textit{binding limit}_{st} \times \textit{experience}_{st} + \beta X_{st} + \epsilon_{st}, \quad (22)$$

where p_{st} is a policy outcome at state s in year t , X_{st} represents a vector of control variables, α_s is a state fixed effect, δ_t is a year fixed effect, and ϵ_{it} is an error term. As a policy outcome, we use both per capita state spending and total taxes. The variable *binding limit* _{st} takes one if the governor in state s at period t cannot run in the next election due to a term limit, and takes zero otherwise. The variable *experience* _{st} refers to the governors' years of political experience before assuming the office of governor, which represents the governors' competency levels. The important difference from the specification of Besley and Case (1995b) and Alt et al. (2011) is the interaction term between *binding limit* _{st} and *experience* _{st} .

Our main concern is the coefficient of the interaction term. In the separating equilibrium, the re-election motive affects policy choice only when the incumbent is incompetent. As a result, the effect of a binding term limit will be observed only under incompetent governors.²⁴

²²Besley and Case (2003) repeat the analysis using extended data from 1950 to 1997 and find that the term-limit effect has diminished with the times. Alt et al. (2011) also use the data on U.S. governors to clarify the incentive and selection effects, exploiting the variation in the length of term limits across states. They find positive support for both incentive and selection effects. Using audit reports in Brazil, Ferraz and Finan (2011b) find that mayors who can seek re-election engage in significantly lower corruption than mayors who face a binding term limit. Since the result is robust even if they restrict the sample to the incumbents who were actually re-elected, they argue that the observed difference could not be explained by the selection effect that more honest politicians tend to be re-elected and face binding term limits.

²³We use the data of Alt et al. (2011), which extend the data of Besley and Case (1995b) and are available at <https://dataverse.harvard.edu/dataset.xhtml?persistentId=hdl:1902.1/14838>

²⁴The theoretical prediction on the sign of the coefficient of the interaction term is ambiguous, as Prediction 5 describes. Furthermore, if multiple equilibria are possible, this prediction will change if the pooling equilibrium occurs with sufficiently high frequency.

Table 1: Term-Limit Effects and Competency

	Dependent variables:					
	Log of per capita spending			Log of per capita taxes		
	(1)	(2)	(3)	(4)	(5)	(6)
Governor cannot run	0.0139*	0.0277**	0.0264**	0.0181*	0.0452***	0.0474***
	(0.0071)	(0.0117)	(0.0116)	(0.0106)	(0.0166)	(0.0162)
Political experience	-0.0003	0.0001	-0.0000	-0.0001	0.0006	0.0006
	(0.0003)	(0.0004)	(0.0004)	(0.0005)	(0.0005)	(0.0005)
Governor cannot run × Political experience		-0.0013*	-0.0012		-0.0026***	-0.0026***
		(0.0007)	(0.0007)		(0.0009)	(0.0009)
Political control	No	No	Yes	No	No	Yes
Observations	2400	2400	2352	2393	2393	2345
R^2	0.969	0.969	0.969	0.943	0.943	0.944

We include control variables such as the log of income per capita, the log of state population, the share of population aged over 65, and the share of population aged 5-17. Columns (3) and (6) also control some political variables, such as the party of the governor, the majority party of the legislature, and the presence of divided government. Robust standard errors are reported in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 1 provides our estimation results. Columns (1) and (4) do not include the interaction term between the binding term limit and the experience of governors. All columns show that both per capita government spending and taxes are higher in states where the governors cannot run for re-election, which is consistent with the findings of Besley and Case (1995b, 2003). The political experience of the governors is not significantly related with the states' policy outcomes. Columns (2) and (5) include the interaction term and show that the coefficient of the interaction term is significantly negative. This means that the re-election motive of the governors has a greater influence on per capita government spending and taxes when the governors have less political experience. Columns (3) and (6) control political variables such as the party of the governor, the majority party of the legislature, and the presence of divided government. The magnitude of the interaction term changes little even if we control these political variables, while the interaction effect on government spending becomes statistically insignificant.

The observed behaviors of U.S. governors are consistent with the separating equilibrium in the model. The re-election motive cannot discipline competent incumbents because of their advantage of competency and their belief that voters are competency-oriented. As a result, the effect of binding term limits becomes weaker as the incumbent is more competent. Of course, we cannot say much about the validity of our model from this simple estimation, and more careful examination is necessary in future research.

7 Conclusion

In this paper, we have developed a model of political agency to investigate when voters prefer an incompetent candidate to a competent one. In this model, the voters elect either a competent or an incompetent candidate in the first election. After the winner chooses a policy, this incumbent contests the second election with a new challenger, and the winner of this election again chooses a policy. The candidates are heterogeneous in competency levels and policy preferences. While the voters can observe the candidates' competency, they cannot observe the candidates' policy preferences. Even though the policy preferences of the elected incumbent conflict with those of the majority, the re-election motive may incentivize him or her to choose the voters' preferred policy. While the voters obtain benefit from the competency of the elected candidate, how much priority they attach to the candidates' competency is the voters' private information. Some voters place the candidates' competency above anything else (type-C), while some others place lower priority on it (type-P).

The model shows that a negative relation can occur between politicians' competency and political accountability because the condition to making electoral accountability work is different between competent and incompetent incumbents. If the future challenger is incompetent and the voters are type-C, then the competent incumbent can get re-elected even if this incumbent has not chosen the voters' preferred policy. Thus, the competent incumbent has a small incentive to act in the voters' interest when the future challenger is more likely to be incompetent. Similarly, even if the incompetent incumbent has chosen the

voters' preferred policy, it does not assure his or her re-election if the future challenger is competent. Hence, the incompetent incumbent has a small incentive to act in the voters' interest when the future challenger is more likely to be competent. As a result, a negative relation between competency and accountability emerges when the probability that the future challenger is competent is low.

The voters' private information provides another mechanism leading to the negative relation between competency and accountability. This mechanism shows that the type-P voters' distrust against the competent candidate can be a self-fulfilling prophecy. Let us assume that the type-P voters distrust the competent candidate for some reason and vote for the incompetent candidate in the first election, while the type-C voters vote for the competent candidate. Then, this separating strategy of the voters reveals their type to the winning candidate; if elected, the competent candidate will perceive that the voters are type-C and place the maximum value on his or her competency. As a result, the competent incumbent pursues his or her own interest while in office, and the negative relation between competency and accountability emerges. Given this behavior of the competent incumbent, the type-P voters' distrust against the competent incumbent is rational, even though it is groundless in the first place.

When the negative relation between competency and accountability exists, the voters elect the incompetent candidate if they place sufficiently great importance on the politicians' policy choice compared with their competency.

Our model yields several testable predictions. First, an incompetent candidate is elected when voters care more about the expected policy choice by elected candidates than their competency. This situation occurs when there is severe policy conflict among voters. Second, we predict that incompetent candidates are more likely to win an election when the expected quality of the future challenger is low. Third, the chance of incompetent candidates to win against competent candidates vanishes when the reward for politicians rises enough. Finally, we predict that the effect of binding term limits on politicians' behavior depends on their levels of competency. In the separating equilibrium, the incompetent incumbent is more accountable than the competent incumbent: the incompetent incumbent abandons his or her preferred policy to step toward voters' preferences in the first term with positive probability, while the competent incumbent always chooses his or her preferred policy. Hence, the incompetent incumbent is more likely to change policies in the last term where he or she does not need to seek re-election.

We use panel data of 48 continental U.S. states from 1950 to 2000 to examine how governors' political experience is related with this term-limit effect. Empirical findings are consistent with the theoretical prediction. The term-limit effect is stronger in states where governors have less political experience.

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Appendix

Proof of Lemma 2

Proof. The equilibrium level of π_L^* and ψ^* can be described as an intersection of the graphs of $\pi_L(\psi)$ and $\psi(\pi_L)$. The function $\pi_L(\psi)$ is non-decreasing in ψ , and $\psi(\pi_L)$ is non-increasing in π_L (see (4) and (14)).

Let us consider the case of $\hat{v} > 1/(1 - \rho)$. In this case, $\bar{\pi}$ is in $(0, 1)$. When $q \in (\underline{q}_L, \bar{q}_L)$, $\bar{\psi}$ is also in $(0, 1)$ as described in Figure 4. When $q \leq \underline{q}_L$, $\bar{\psi} \leq 0$. Hence, $\psi^* = 0$ and $\pi_L^* = 1$. Note that if $q = \underline{q}_L$ ($\bar{\psi} = 0$), then $\pi_L \in [\bar{\pi}, 1)$ is weakly dominated by $\pi_L = 1$. Similarly, when $q \geq \bar{q}_L$, $\bar{\psi} \geq 1$. Hence, $\psi^* = 1$ and $\pi_L^* = 0$. If $q = \bar{q}_L$ ($\bar{\psi} = 1$), then $\pi_L \in (0, \bar{\pi}]$ is weakly dominated by $\pi_L = 0$.

Finally, let us consider the case of $\hat{v} \leq 1/(1 - \rho)$. In this case, $\bar{\pi} \leq 0$. If $q \leq \underline{q}_L$, then $\bar{\psi} \leq 0$ holds. Hence, $\psi^* = 0$ and $\pi_L^* = 1$. When $q = \underline{q}_L$, $\pi_L \in [0, 1)$ is weakly dominated by $\pi_L = 1$. If $q > \underline{q}_L$, then $\bar{\psi} > 0$ and hence $\psi^* = \pi^* = 0$. Note that, when $\hat{v} = 1/(1 - \rho)$, $\psi \in (0, \bar{\psi}]$ is weakly dominated by $\psi = 0$. □

Proof of Lemma 3

Proof. We first show that $V_i(\pi_i)$ is a monotonically increasing function. Substituting (5) into (17), we obtain

$$V_H(\pi_H) = \lambda + [\rho + (1 - \rho)\pi_H][v + \beta(\lambda + \mu_H v)] + (1 - \rho)(1 - \pi_H)\beta(q\lambda + \rho v). \quad (\text{A1})$$

Using (1), it is rewritten as

$$V_H(\pi_H) = \lambda + [\rho + (1 - \rho)\pi_H](v + \beta\lambda) + \beta\rho v + (1 - \rho)(1 - \pi_H)\beta(q\lambda + \rho v). \quad (\text{A2})$$

Hence, we obtain

$$V'_H(\pi_H) = (1 - \rho)[(1 - \beta\rho)v + \beta(1 - q)\lambda] > 0. \quad (\text{A3})$$

Similarly, by substituting (6) into (18), we obtain

$$V_L(\pi_L) = [\rho + (1 - \rho)\pi_L][v + \beta\{q \max\{\mu_L v, \lambda + \rho v\} + (1 - q)\mu_L v\}] + (1 - \rho)(1 - \pi_L)\beta(q\lambda + \rho v). \quad (\text{A4})$$

First, we consider the case of $\pi_L \in [0, \bar{\pi}]$. In this case, since $\bar{\pi} \geq 0$, the condition $(1 - \rho)v \geq \lambda$ holds. Using (1), (A4) is rewritten as

$$V_L(\pi_L) = [\rho + (1 - \rho)\pi_L]v + \beta\rho v + (1 - \rho)(1 - \pi_L)\beta(q\lambda + \rho v), \quad (\text{A5})$$

and we obtain

$$V'_L(\pi_L) = (1 - \rho)[(1 - \beta\rho)v - \beta q\lambda] > 0,$$

where the last inequality holds from $(1 - \rho)v \geq \lambda$.

Next, we consider the case of $\pi_L \in (\bar{\pi}, 1]$. Similar to the previous case, (A4) can be rewritten as

$$V_L(\pi_L) = [\rho + (1 - \rho)\pi_L][v + \beta q(\lambda + \rho v)] + \rho\beta(1 - q)v + (1 - \rho)(1 - \pi_L)\beta(q\lambda + \rho v), \quad (\text{A6})$$

and we obtain

$$V'_L(\pi_L) = (1 - \rho)[1 - \beta(1 - q)\rho]v > 0. \quad (\text{A7})$$

Finally, the last claim in Lemma 3 can be easily obtained as

$$V_H(\pi) - V_L(\pi) = \lambda + \beta\{\rho + (1 - \rho)\pi\}\lambda + q\rho v - \beta q \max\{\rho + (1 - \rho)\pi\}(\lambda + \rho v), \rho v\} > 0. \quad (\text{A8})$$

□

Proof of Lemma 4

Proof. From (A2),

$$V_H(0) = \lambda + \rho[v + \beta(\lambda + v)] + (1 - \rho)\beta(q\lambda + \rho v). \quad (\text{A9})$$

Hence, for $\pi \geq \bar{\pi}$, $V_H(0) \geq V_L(\pi)$ if and only if

$$\pi \leq \frac{[1 + \beta(1 - q)\rho] + \beta q(1 - \rho)\rho\hat{v}}{(1 - \rho)[1 - \beta(1 - q)\rho]\hat{v}}, \quad (\text{A10})$$

where the right-hand side is decreasing in \hat{v} . When $\pi = 1$, the condition (A10) can be written as

$$\hat{v} \leq \frac{1 + \beta(1 - q)\rho}{(1 - \rho)(1 - \beta\rho)} \equiv \underline{v}(q). \quad (\text{A11})$$

When $\pi = \bar{\pi}$, from (16), the condition (A10) can be written as

$$g(\hat{v}) \equiv \rho(1 - \rho)(1 - \beta\rho)\hat{v}^2 - \rho[2 + \beta q(1 - \rho)]\hat{v} - [1 + \beta(1 - q)\rho] \leq 0. \quad (\text{A12})$$

The quadratic equation $g(\hat{v}) = 0$ has two distinct real solutions:

$$\hat{v} = \frac{\rho[2 + \beta q(1 - \rho)] \pm \sqrt{\rho^2[2 + \beta q(1 - \rho)]^2 + 4\rho(1 - \rho)(1 - \beta\rho)[1 + \beta(1 - q)\rho]}}{2\rho(1 - \rho)(1 - \beta\rho)}. \quad (\text{A13})$$

We define $\bar{v}(q)$ as

$$\bar{v}(q) \equiv \frac{\rho[2 + \beta q(1 - \rho)] + \sqrt{\rho^2[2 + \beta q(1 - \rho)]^2 + 4\rho(1 - \rho)(1 - \beta\rho)[1 + \beta(1 - q)\rho]}}{2\rho(1 - \rho)(1 - \beta\rho)}. \quad (\text{A14})$$

Since $g(\underline{v}(q)) < 0$, in the range of $\hat{v} \in (\underline{v}(q), \bar{v}(q)]$, $V_H(0) \geq V_L(\bar{\pi})$, and $V_H(0) < V_L(\bar{\pi})$ when $\hat{v} > \bar{v}(q)$. □

Proof of Proposition 2

Proof. Proof of 1. In the range of $\underline{v}(q) < \hat{v} \leq \bar{v}(q)$, $V_H(\pi_H) \geq V_L(\pi_L)$ holds when $\pi_L \leq \bar{\pi}$. From Lemma 2, $\pi_L \leq \bar{\pi}$ if $q > \underline{q}_L$. Hence, if $\underline{v}(q) < \hat{v} \leq \bar{v}(q)$ and $q > \underline{q}_L$, then a pooling equilibrium uniquely exists.

If $q \leq \underline{q}_L$, Lemma 2 shows that $\pi_L = 1$. Let us assume that the majority use the separating strategy. Then, the majority of type-P obtain $V_H(0)$ from voting for the competent candidate and obtain $V_L(1)$ from voting for the incompetent candidate. Since the condition $\hat{v} > \underline{v}(q)$ means $V_L(1) > V_H(0)$, the separating strategy is optimal for the majority in this case.

Finally, if $q \geq \underline{q}_H$, then a pooling equilibrium exists because the competent dissonant incumbent chooses $e_1 = 1$ if the majority use the pooling strategy. As we have discussed above, the competent dissonant incumbent has a large incentive to choose $e_1 = 1$ when ν_H is small, which takes the minimum value η when the majority use the pooling strategy. The condition $q \geq \underline{q}_H$ assures that choosing $e_1 = 1$ is optimal for the competent dissonant incumbent when the majority use the pooling strategy, which makes the pooling strategy optimal for the majority.

Proof of 2. The separating equilibrium also exists in the case of $\hat{v} \geq \bar{v}(q)$ because it means that $V_L(\pi_L) > V_H(0)$ for $\pi_L \geq \bar{\pi}$. If $q \geq \underline{q}_H$, then a pooling equilibrium also exists as we have shown. \square