Signaling Ability Through Policy Change

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Abstract

I study a model in which a voter is uncertain about an incumbent's ability to develop high-quality policies. The incumbent develops an alternative to an inherited status quo, observes its quality, and decides whether to implement it. The voter observes this decision but not the quality of the alternative and decides whether to reelect the incumbent. I show that the incumbent engages in ability signaling: she implements the alternative even if its quality is lower than what she would implement under complete information about her ability. I then show that requiring the incumbent to secure the agreement of a second policymaker with whom she is electorally competing creates the opposite distortion, ability blocking: the second policymaker blocks alternatives he would allow under complete information. Hence, uncertainty about the incumbent's policymaking ability produces excessive policy change under unilateral policymaking but leads to excessive gridlock under veto institutions. I extend the model to study the timing of policymaking and show that, in some cases, the incumbent prefers to develop her alternative later in her term to minimize the information that voters receive about the alternative's quality before the election. Finally, I allow the incumbent to choose the ideological bent of her alternative. In that case, the incumbent sometimes moderates. This moderation, however, arises not to make the alternative more attractive to the voter but because the incumbent can improve the voter's inference about her ability by choosing an alternative further away from her ideological ideal point.

1 Introduction

During the first Presidential Debate between Vice President Kamala Harris and former President Donald Trump, Trump was asked about his plans to repeal the Affordable Care Act (ACA) if elected. He replied:

> Obamacare was lousy health care. Always was. It's not very good today... We're looking at different plans. If we can come up with a plan that's going to cost our people, our population less money and be better health care than Obamacare, then I would absolutely do it. But until then I'd run it as good as it can be run.[1]

Taken at face value, three features of this response stand out. First, Trump's answer suggests an effort to develop an alternative to the ACA, with the decision to replace it hinging on the success of this effort.[2] Second, despite Trump's demonstrated ideological opposition to the ACA, whether he replaces the policy will come down to whether his alternative plan can provide better healthcare at a lower cost.[3] That is, Trump's decision depends on the "quality" of his alternative policy. Finally, the quality of the ACA is the reference point against which the alternative will be measured. The ACA is "lousy healthcare." Still, Trump will only replace it if the alternative he develops is of higher quality.

Suppose voters care about the ability of their policymakers to develop high-quality healthcare policies but cannot observe directly observe this ability. Suppose further that voters cannot immediately determine whether a reform of the ACA is high quality. How will Trump approach his decision whether to replace the ACA if elected? Will he feel pressure to replace the ACA with a new policy to show he developed an alternative of higher quality? A natural intuition would suggest that he may be willing to implement a lower-quality healthcare plan if doing so is electorally beneficial. But when is policy change electorally beneficial? And how does whether it is electorally beneficial relate to the ideological and institutional features of the policymaking environment?

In this paper, I explore these questions using a formal model in which policies have ideology and quality. An incumbent policymaker, driven by policy goals and the prospect of reelection, decides whether to maintain an inherited policy of publicly known ideology and quality or to change it to a policy with her preferred ideology. Before deciding whether to change the policy, the incumbent privately learns the quality of her alternative policy,

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[1]Hoffman (2024)

[2]One such effort is the Heritage Foundations's Project 2025, which outlines a variety of reforms of the ACA (The Heritage Foundation, 2024).

[3]For example, a blueprint for "Healthcare Reform to Make America Great Again" posted on Trump's 2016 campaign website discusses "reforms [to the ACA]... that follow free market principles and that will restore economic freedom" ("Healthcare", 2016).

which is drawn from a distribution that depends on her ability. Notably, a higher-quality policy is more likely to be developed by a high-ability policymaker. A voter observes the incumbent's decision but not the quality of the alternative policy and reelects the incumbent if the probability the incumbent has high ability is sufficiently high. Otherwise, the voter elects a challenger.

To better understand the effect of uncertainty about the incumbent's ability to develop high-quality policies on her policymaking, I begin by analyzing the benchmark case where the voter knows the incumbent's ability. Consequently, the incumbent's decision to change the status quo does not affect the election's outcome. Hence, the incumbent changes the status quo when her ideological benefit exceeds the net change in quality.

I then turn to the model where the incumbent's type is unknown. Sometimes, the incumbent's equilibrium strategy coincides with her strategy in the complete information benchmark. In the remaining cases, she changes the status quo for lower realizations of quality than she does in the benchmark. This leads to additional policy change, which I refer to as *ability signaling*, and decreased expected policy quality.

Whether ability signaling arises in equilibrium depends on the interaction between the ex-ante state of the election and the incumbent's ideological preferences vis-à-vis the status quo. For example, when the incumbent begins the game trailing the challenger, she can only win reelection if she changes the status quo since, in equilibrium, policy change is a signal of high ability while retaining the status quo is a signal of low ability. However, whether policy change is a sufficiently strong signal of ability to lead to reelection depends on the incumbent's ideological opposition to the status quo. When she is very ideologically opposed to the status quo, policy change is a weak signal; the voter recognizes the incumbent is willing to replace the status quo with a low-quality alternative because she dislikes the status quo. However, policy change is a strong signal of ability when she is not very opposed to the status quo. The voter recognizes that for the incumbent to change the status quo, she must have developed a high-quality alternative. Hence, when the incumbent trails, ability signaling arises when the incumbent is not ideologically opposed to the status quo. The opposite is true when the incumbent leads: ability signaling arises when the incumbent is ideologically opposed to the status quo.

Since at least the early days of the United States, some have worried that elections lead to excessive policy change (Madison, 1788a; de Tocqueville, 2003). One argument for this depends on policymakers' ideological preferences. In Federalist 62, James Madison writes:

> The mutability in the public councils arising from a rapid succession of new members, however qualified they may be, points out, in the strongest manner, the necessity of some stable institution in the government. Every new election in

the States is found to change one half of the representatives. From this change of men must proceed a change of opinions; and from a change of opinions, a change of measures. But a continual change even of good measures is inconsistent with every rule of prudence and every prospect of success.[4]

My analysis shows this fear is warranted. In the complete information benchmark, the incumbent's ideological opposition to the status quo incentivizes additional policy change beyond what would be done just to improve policy quality. However, a key insight from the incomplete-information model is that there is an additional reason to fear elections might lead to excessive policy change: the desire of a policymaker to signal her ability to develop high-quality policies.

In the model described so far, the voter does not learn the quality of the incumbent's alternative policy before the election. In reality, whether he does depends on when policy change occurs relative to the election; the earlier in the incumbent's term that she changes the status quo, the more likely the voter learns the alternative's quality. To account for this, I extend the model to assume there is an exogenous probability the alternative policy's quality is revealed if the incumbent changes the status quo. As this probability increases, the extent of ability signaling decreases. Yet, even if the quality of the incumbent's alternative is revealed with certainty, she still engages in ability signaling for some regions of the parameter space. So, while the incumbent will distort policymaking most at the end of her term when the probability of quality revelation is minimized, she may still engage in ability signaling at the beginning.

In light of this, one might conjecture that if the incumbent has the freedom to choose when to develop her alternative during her term, she will wait until the end in case it turns out her alternative is low quality. I explore this possibility and show that unless the incumbent trails and has a strong ideological opposition to the status quo, the revelation of information about the quality of her alternative only hurts her. In this case, if given the choice of when to develop her alternative, the incumbent waits until the end of her term. But, if the incumbent trails and is very ideologically opposed to the status quo, simply changing the status quo is not enough to win reelection. For the incumbent to win, her policy must be shown to be sufficiently high quality. Hence, the revelation of information about the quality of the alternative helps the incumbent. In this case, the incumbent develops her alternative immediately to maximize the probability the voter learns her alternative is high-quality. Hence, when the incumbent trails and has a strong ideological opposition to the status quo, her behavior is similar to the "honeymoon hypothesis," where politicians use their early-term political capital to enact new policies (McCarty, 1997; Beckmann and Godfrey, 2007).

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[4]Madison (1788a)

Otherwise, her behavior looks more like the behavior predicted by the political business cycles literature: an incumbent pursuing policies with short-term benefits at the end of her term to boost her electoral prospects (Nordhaus, 1975; Drazen, 2000).

Policymakers may not develop policies that match their ideological ideal point but instead choose more moderate or extreme policies. I also study the model under the alternative assumption that the incumbent publicly chooses the ideology of her alternative policy before developing it and learning its quality. I then show that despite being able to change the status quo unilaterally, for some regions of the parameter space, the incumbent develops a policy that differs from her ideological ideal point. By doing so, the incumbent makes policy change less attractive since the ideological benefit is smaller, which means her alternative must be of relatively higher quality to warrant changing the status quo. As a result, in equilibrium, changing the status quo is a stronger signal of high ability, and retaining the status quo is a weaker signal of low ability. Due to this, the incumbent can sometimes win reelection with a higher probability than if she develops a policy with her ideal ideology. Notably, unlike other papers where policy has ideological and quality dimensions, the incumbent does not develop a policy that differs from her ideological ideal point to make it more attractive to another actor with more moderate policy preferences but to affect the information conveyed by her decision whether to change the status quo (Hirsch and Shotts, 2012, 2018; Hitt et al., 2017).

In many policymaking environments, the incumbent cannot change the status quo unilaterally; instead, she must secure agreement from another policymaker who might have different ideological preferences. Moreover, in many institutions, these policymakers must agree under the shadow of a future election. For example, consider the majority and minority parties interacting in the Senate. I study an extension of the baseline model where the incumbent chooses whether to propose an alternative policy, which is implemented if and only if the challenger agrees to the proposed policy change. Before deciding, the challenger observes the quality of the incumbent's proposed alternative.

Relative to the complete information benchmark of this extension, when there is uncertainty about the incumbent's ability, the challenger sometimes engages in *ability blocking*. That is, she blocks some policy changes that she allows when there is complete information because blocking policy change is electorally beneficial. This distortion leads to a lower probability of policy change and lower expected policy quality. It also captures the strategic, electorally motivated opposition we see in roll-call voting in the Senate (Lee, 2009).

This extension also reveals that the need to secure the challenger's agreement to change the status quo is sometimes electorally beneficial for the incumbent in that she wins reelection in cases where she is unable to if she unilaterally changes the status quo. Because the

challenger blocks some policy changes that the incumbent would make if she could act unilaterally, securing the challenger's agreement is a stronger signal of high ability, and failing to secure the challenger's agreement is a weaker signal of low ability.

In sum, my model shows that when there is uncertainty about a policymaker's ability to develop high-quality policies, and she can change the status quo unilaterally, she engages in ability signaling. This distortion results in excessive policy change and lower expected policy quality. Under an institution that requires agreement between two policymakers to change the status quo, the distortion of ability signaling is ameliorated. However, it is replaced by a different distortion, ability blocking: the second policymaker blocks policy change that he would allow under complete information. This second distortion also leads to lower expected policy quality relative to the complete information benchmark. Hence, when designing policymaking institutions in a world where there is uncertainty about policymakers' ability to develop high-quality policies, there is a choice between excessive policy change and excessive gridlock.

1.1   Related Literature

This paper considers how uncertainty about a policymaker's ability to develop high-quality policies affects her policymaking decisions. To do this, I study a game-theoretic model where policy has two dimensions: ideology and quality. In this modeling choice, I build upon a small but growing literature of formal models where policy has an ideological component and a valence component, and where the valence component usually represents the policy's quality (Hirsch and Shotts, 2012, 2015, 2018; Hitt et al., 2017; Londregan, 2000). Many of the papers within this literature build upon the same basic model where a policymaker makes a costly investment in developing the quality of an alternative to the status quo. By doing this, the policymaker makes her alternative policy more attractive to a different player with ideological preferences that differ from the policymaker's and who must agree to change the status quo to the alternative policy. With one exception, Hitt et al. (2017), policymakers in the existing models have the same ability to develop high-quality policies. In contrast, in my model, some policymakers have more ability than others. Moreover, unlike Hitt et al. (2017), I study a setting with incomplete information about the policymaker's ability.

This paper is also closely related to the literature on electoral accountability when there is uncertainty about a policymaker's type. Previous work focuses on uncertainty about a policymaker's ability to discern which policies should be chosen given the underlying state of the world (Canes-Wrone et al., 2001; Ashworth and Shotts, 2010; Maskin and Tirole, 2004; Kartik et al., 2015; Bils, 2023) and uncertainty about a policymaker's preferences (Fearon,

1999) among other topics. In these cases, uncertainty leads to distorted policymaking relative to when there is complete information: policymakers pander or anti-pander when there is uncertainty about what they know about the state of the world and moderate when there is uncertainty about their preferences. I examine a distinct source of uncertainty, uncertainty about a policymaker's ability to develop high-quality policies and show that this leads to distortions in the form of additional policy change that decreases expected policy quality. Moreover, to do this, I develop a novel yet tractable electoral accountability model where policy has a horizontal and vertical dimension.

Within this literature, my paper is most closely related to Judd (2017), who studies a model where a policymaker directly reveals her skill by unilaterally changing the status quo. In equilibrium, high-ability policymakers "show off" by unilaterally enacting policies inferior to the status quo but high quality enough that the voter will reelect them after learning their skill. My model differs in two ways: the voter observes if the incumbent changes the status quo but does not observe her type or her alternative's quality, and the incumbent has ideological preferences. These differences mean that the voter's learning in equilibrium depends on the incumbent's ideological stance, as does whether distorted policymaking arises in equilibrium. Hence, my model complements Judd (2017) by illustrating a connection between distorted policymaking and ideology. Moreover, my model demonstrates that the incumbent has an informational incentive to moderate, which is something that does not arise in Judd (2017) since policy does not have an ideological dimension.

This paper is also related to the literature on when politicians act. Some studies focus on how policy considerations affect when politicians act (Ostrander, 2016; Binder and Maltzman, 2002; Thrower, 2018).[5] Others focus on the effect of position-taking considerations on when politicians act (Huang and Theriault, 2012). I study a distinct consideration: how uncertainty about a policymaker's ability affects when she acts. Gibbs (2024) studies a similar question, although using a model where the policymaker's ability is related to the quality of her information about the right policy rather than her ability to develop high-quality policies.

Finally, in an extension of the baseline model, I study a setting where the challenger can veto a policy change proposed by the incumbent. This is related to other work on electoral accountability where one player can exercise veto power over another player's proposal (Buisseret, 2016; Noble, 2023; Fox and Stephenson, 2011). However, in my setting, the incumbent and challenger are engaged in zero-sum electoral competition, like when the incumbent is the majority party in the Senate, and the challenger is the minority party. When interpreted this way, the challenger's behavior in equilibrium is reminiscent of the strategic, electorally

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[5]Also see the literature on political business cycles (Nordhaus, 1975; Drazen, 2000).

motivated opposition we see in roll-call voting documented by Lee (2009, 2016).

2 Model

There are three players: an incumbent policymaker (I, "she"), a challenger (C, "he"), and a voter (V, "he"). Each policymaker, $j \in \{I, C\}$, either has high ability ($\tau_j = \bar{\theta}$) or low ability ($\tau_j = \underline{\theta}$), and their types are unknown to all players. At the start of the game, the policymakers' types are independently and identically drawn from a Bernoulli distribution such that the prior probability that policymaker j has high ability is $p \in (0, 1)$.

There is a publicly observed status quo, $\pi_{sq} = (x_{sq}, q_{sq})$, which consists of ideology, $x_{sq} \in \mathbb{R}$, and quality, $q_{sq} \geq 0$. The incumbent has the option to maintain this status quo, $\pi = \pi_{sq}$, or replace it with an alternative policy, π_I, which has an exogenously determined ideology, x_I, and quality, $q_I \geq 0$. [6] While the incumbent and the voter know x_I, only the incumbent knows q_I, which she privately learns before publicly deciding whether to change the status quo. Observing this decision, but without observing q_I, the voter chooses between reelecting the incumbent and replacing her with the challenger, $e \in \{I, C\}$.

The quality of the incumbent's alternative policy, q_I, is drawn from one of two distributions depending on her type. Let f be the prior distribution of q_I if the incumbent has high ability, and let g be the prior distribution of q_I if the incumbent has low ability. I assume $f(q_I) > 0$ and $g(q_I) > 0$ for $q_I \in [0, \infty)$ and $f(q_I)$ and $g(q_I)$ have the strict monotone likelihood ratio property (MLRP)(Milgrom, 1981).[7]

The timing of the model is summarized below:

1. Nature privately draws the policymakers' types and q_I.

2. The incumbent privately learns q_I.

3. The incumbent chooses whether to retain the status quo or change it.

4. The voter observes the incumbent's decision but not q_I.

5. The voter chooses whether to elect the incumbent or the challenger.

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[6]In Section 6, I explore an extension where the incumbent chooses x_I.

[7]Assuming $f(q_I)$ and $g(q_I)$ have the strict MLRP means $\frac{f(q_I)}{g(q_I)}$ is strictly increasing in q_I. The assumption of strict MLRP rather than weak MLRP ensures there is a unique threshold in the incumbent's strategy such that the voter is indifferent between the incumbent and challenger. Without this assumption, the substantive results would be the same but there might be more equilibria. See Section A.2 of the Appendix for more information.

Payoffs The incumbent cares about the quality and ideology of policy and winning reelection. Her utility from a policy with ideology x and quality q is

$$u_I(x, q) = -(\hat{x} - x)^2 + q + \mathbb{1}_{e=I} r,$$

where $\hat{x}$ is the incumbent's ideological ideal point, $r > 0$ represents office rents, and $\mathbb{1}_{e=I}$ is an indicator function that takes the value one when the voter reelects the incumbent and zero otherwise. I begin by assuming $x_I = \hat{x}$, that is, the ideology of the incumbent's alternative policy matches her ideological ideal point. But, in Section 6, I allow the incumbent to choose an alternative with an ideology that differs from her ideological ideal point.

The voter cares about the policymakers' ability:

$$u_V(x, q) = \mathbb{1}_{e=I}\mathbb{1}_{\tau_I=\bar{\theta}} + (1 - \mathbb{1}_{e=I})(\mathbb{1}_{\tau_C=\bar{\theta}} + \eta).$$

where $\eta \in \mathbb{R}$ represents the voter's preference for or against the challenger for reasons other than ability, and $\mathbb{1}_{\tau_I=\bar{\theta}}$ and $\mathbb{1}_{\tau_I=\bar{\theta}}$ are indicator functions that take the value of one if the incumbent and challenger have high ability respectively and zero otherwise. η represents a notion of ex-ante electoral competition. If $\eta > 0$, the incumbent ex-ante *trails* the challenger, and if $\eta < 0$, the incumbent ex-ante *leads* the challenger.

I also make the following parameter assumption.

Assumption 1. $\eta \in (\underline{\eta}, \overline{\eta})$, *where* $\underline{\eta} < 0 < \overline{\eta}$.

This assumption means that the incumbent never ex-ante leads or trails by a sufficient margin that the election's outcome is predetermined. $\underline{\eta}$ and $\overline{\eta}$ depend on p, $f(q_I)$, and $g(q_I)$, and are defined in the Section A.2 of the Appendix.

Equilibrium The incumbent's strategy is a function $\sigma_I(\cdot) : \mathbb{R}_+ \rightarrow \Delta\{\pi, \pi_I\}$, and the voter's strategy is a function $\sigma_V(\cdot) : \{\pi, \pi_I\} \rightarrow \Delta\{I, C\}$. A perfect Bayesian equilibrium surviving D1 with minimum policy change, referred to in the paper as an "equilibrium," satisfies the following:

(i.) Each player's strategy is sequentially rational given her or his beliefs and the other players' strategies.

(ii.) The voter's belief about the incumbent's ability satisfies Bayes' rule on the equilibrium path.

(iii.) The voter's belief about the incumbent's ability satisfies the D1-criterion off the equilibrium path.

(iv.) There is no other equilibrium with lower probability of policy change.

The first two conditions are the conditions for a perfect Bayesian equilibrium, and the third is the D1-criterion from Banks and Sobel (1987), which restricts the belief the voter holds when the incumbent deviates to an action that is off the equilibrium path. Specifically, D1 requires that the voter restricts his off-the-path beliefs to the types of incumbents most likely to deviate to the off-the-path action. I adopt the fourth condition in light of the existence of multiple equilibria. For much of the parameter space, a unique perfect Bayesian equilibrium satisfies the first three conditions, but elsewhere, multiple perfect Bayesian equilibria surviving D1 exist. Adopting the fourth condition ensures uniqueness, except for in some knife-edge cases. Below, I show that uncertainty about the policymaker's type distorts policymaking in the form of additional policy change. By focusing on the equilibrium with minimum policy change, I focus on the equilibrium where this distortion is minimized. Notably, the comparative statics results derived when I focus on the equilibrium with minimum policy change are the same as those if I focus on the equilibrium with maximum policy change.[8]

3   Discussion of the Model

Policy Quality   I model policy as having two dimensions: ideology and quality. Ideology represents whether the policy is more to the left or the right, and quality represents aspects of the policy that all players value, such as cost-effectiveness, lack of susceptibility to fraud, and the extent to which the policy achieves agreed-upon goals like economic growth. In this way, policy quality is similar to a party or a politician's valence (Stokes, 1963). To illustrate these dimensions, consider the Paycheck Protection Program (PPP), which provided low-interest loans to business owners during the COVID-19 pandemic. The ideology of the PPP can be represented by a point along the left-right policy dimension. There are also aspects of the PPP that are separate from ideology that contribute to the quality of the policy. For example, the PPP was highly susceptible to fraud—by some estimates, 10 percent of the money dispersed was for fraudulent claims—due partly to the way applications were screened (Griffin et al., 2023; Brooks, 2023).[9] Relative to a version of the PPP that was drafted in a way that was less susceptible to fraud, this policy has lower quality.

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[8]In some cases (iv.) also removes a mixed strategy equilibrium in which the comparative statics results for the perfect Bayesian equilibrium surviving D1 with minimum policy change do not hold.

[9]The Small Business Administration used outside lenders to screen applications and to make loans. Because these lenders collected a processing fee but were not liable for the loss on bad loans, they had little incentive to scrutinize applications closely. See Brooks (2023) for more information.

Learning about Quality I assume the incumbent knows the quality of her alternative policy when deciding whether to change the status quo, but the voter does not. This asymmetry reflects that the policymaker is a policy expert, but the voter needs time to observe the policy after its implementation to learn about its quality. The baseline model represents a situation where there is insufficient time for the voter to learn about quality before the election. In Section 5, I relax this assumption by allowing the voter to potentially learn the alternative policy's quality before voting if the incumbent changes the status quo.

Ability to Craft High-Quality Policy In the model, policymakers differ in their ability to develop high-quality policies. Policymakers differ in this regard because of their personal characteristics—their intelligence, experience, or knowledge of a particular issue—and because of factors like the quality of the policymaker's staff or her ability to utilize lobbyists and interest groups to help craft the policy.

The ability to develop high-quality policies is related to issue ownership, where particular policymakers or parties are associated with greater competence in an issue area (Petrocik, 1996). One reason a policymaker might "own" an issue is that she is perceived as able to develop high-quality policies in that area. Existing work typically begins with the assumption that voters know which policymakers own which issues (Krasa and Polborn, 2010; Ascencio and Gibilisco, 2015; Hummel, 2013). In contrast, in this model, the policymaker can influence the voter's perception of whether she has high ability, and hence, can endogenously achieve "ownership." In the model, the incumbent and the challenger both have the same prior probability of having high ability. Importantly, by varying η, the incumbent may begin the game leading or trailing the follower. Hence, one could allow the voter to have asymmetric priors about the incumbent and challenger, and nothing would change. That is, the voter could believe the incumbent or challenger has some degree of issue ownership over the policy area in question.

Timing In the model, the policymaker learns the quality of her alternative policy and then decides whether to change or retain the status quo. This feature of the model represents how, after drafting a piece of legislation, a policymaker has the choice of whether to proceed with implementing it. For example, after designing an executive order with her staff, a mayor might choose not to issue it. Or, after some of their members draft a piece of legislation, a party's leadership might decide not to schedule a vote. This is what happened to the Graham-Cassidy amendment in 2017. Republican Senators Lindsey Graham and Bill Cassidy developed and introduced an amendment that would overhaul or repeal significant pieces of

the ACA, replacing them with block grants to states (Frostenson, 2017).[10] Although the amendment had support among most Senate Republicans, some, like Susan Collins and John McCain, opposed the bill. In a statement explaining her opposition, Collins wrote:

> Sweeping reforms to our health care system and to Medicaid can't be done well in a compressed time frame, especially when the actual bill is a moving target... The CBO's analysis on the earlier version of the bill, incomplete though it is due to time constraints, confirms that this bill will have a substantially negative impact on the number of people covered by insurance.[11]

In light of this opposition, Republican leadership in the Senate decided not to put the legislation up for a vote.[12]

Seperability of Policy Utility   In the incumbent's utility function, her utility from quality and ideology are separable. I make this assumption for tractability, but complete separability is not critical to my qualitative results. For example, suppose the incumbent's utility from a policy with ideology x and quality q is given by

$$u_I(x, q) = -(\hat{x} - x)^2 + l(\hat{x}, x, q) + \mathbb{1}_{e=I} r,$$

where $l(\hat{x}, x, q)$ is strictly increasing in q. All of my qualitative results go through if $l(\hat{x}, x, q)$ is weakly decreasing in the distance between $\hat{x}$ and x, and most go through if $l(\hat{x}, x, q)$ is weakly increasing or is not monotone with respect to the distance between $\hat{x}$ and x. Ultimately, what is important is that $l(\hat{x}, x, q)$ is increasing in q.

Voter's Utility   I assume the voter has a preference for policymakers with high ability. This assumption represents that a policymaker with high ability will be more likely to develop a high-quality policies in the future. This preference can be microfounded by a game where the election does not affect the policy implemented by the incumbent, the voter cares about policy, and there is a second policymaking period where the winner of the election develops a new policy on a distinct issue and chooses whether to enact it, the voter's.[13]

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[10]This occurred after Senator John McCain's famous "thumbs-down" vote on a different ACA repeal bill.

[11]Collins (2017)

[12]At the time, Republicans controlled the House, Senate, and presidency, and hence, if the party had been unified, would have been able to unilaterally change the status quo.

[13]If the second-period incumbent always enacts the policy he or she develops in the second period, the voter strictly prefers to elect the first-period incumbent if $\Pr(\tau_I = \overline{\theta}|\cdot) > p + \eta$, where $\eta = \frac{(x_V - \check{x})^2 - (\check{x}_V - \check{x}_C)^2}{\int_0^\infty \tilde{q} f(\tilde{q}) d\tilde{q} - \int_0^\infty \tilde{q} g(\tilde{q}) d\tilde{q}}$ and $\check{x}$, $\check{x}_C$, and $\check{x}_V$ are the incumbent, challenger, and voter's ideological ideal points on the distinct issue. See Section 8.1 for more information.

4 Analysis

Given the incumbent's choice whether to retain or change the status quo, $\pi \in \{\pi_{sq}, \pi_I\}$, the voter strictly prefers to reelect the incumbent when

$$\Pr(\tau_I = \overline{\theta}|\pi) > p + \eta.$$

When the inequality is reversed, the voter strictly prefers to elect the challenger.[14] Otherwise, he is indifferent.

4.1 Benchmark: No Uncertainty about the Incumbent's Type

I begin by considering the benchmark case with complete information about the incumbent's type. Denote this game by $\hat{\Gamma}$. When the voter knows whether the incumbent has high ability, his voting decision is unrelated to the incumbent's decision whether to change the status quo. Therefore, the incumbent changes the status quo if and only if doing so increases her utility from policy, which is when:

$$q_I \geq \max\{q_{sq} - (\hat{x} - x_{sq})^2, 0\}. \tag{1}$$

Hence, as long as the incumbent has some degree of ideological opposition to the status quo, she sometimes changes it to a relatively lower-quality policy. Moreover, as the incumbent's ideological opposition to the status quo increases, the probability she changes the status quo increases, and expected policy quality decreases.

4.2 Full Model: Uncertainty about the Incumbent's Type

I now turn to the full model described in Section 2, denoted by Γ. When the voter chooses whether to reelect the incumbent, his strategy is a mapping from the incumbent's decision to his vote choice. Therefore, there are three possible types of equilibria. In the first, the voter's choice does not depend on the incumbent's decision, in which case the incumbent changes the status quo if and only if condition (1) is satisfied, which is the same threshold she uses in $\hat{\Gamma}$.[15]

In the remaining possible equilibria, the incumbent's probability of reelection depends on whether she changes the status quo. One possibility is that in equilibrium, the incumbent's

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[14]Slightly abusing notation, here π represents the incumbent's decision to change or retain the status quo rather than the policy itself since the voter does not observe q_I.

[15]This includes equilibria where the incumbent chooses one action on the equilibrium path, but the voter's action would be the same if the incumbent chose her action off the equilibrium path.

probability of reelection is strictly greater when she retains the status quo than when she changes it. Suppose such an equilibrium exists. In this equilibrium, the incumbent's utility from retaining the status quo does not depend on q_I. However, her utility from changing the status quo is increasing in q_I. Hence, she must use a threshold strategy where she changes the status quo when q_I is sufficiently large.

That $f(q_I)$ and $g(q_I)$ satisfy strict MLRP means that if the incumbent uses a threshold strategy, changing the status quo signals high ability while retaining the status quo signals the opposite.[16] As a result, there cannot be an equilibrium where the incumbent's probability of reelection is higher when she retains the status quo than when she changes it. This rules out the possibility that this potential equilibrium exists.

In the final possible equilibrium, the incumbent's probability of reelection is strictly greater when she changes the status quo than when she retains it. I refer to this as an *equilibrium with consequential policy change*. The same argument about the incumbent's threshold strategy applies here. Hence, she uses a threshold strategy and changes the status quo when q_I is sufficiently large.

Lemma 1. *In any equilibrium, the incumbent uses a threshold strategy and changes the status quo if and only if $q_I \geq q_{sq} + y^*$, where $y^* \in [-q_{sq}, \infty)$.*

I refer to y^* as the incumbent's *quality threshold*. The higher the incumbent's quality threshold, the more discerning she is about how high quality her alternative policy must be to warrant policy change.

In an equilibrium with consequential policy change, the incumbent's desire for reelection is an additional incentive to change the status quo. This additional incentive produces distortions relative to the benchmark without uncertainty about the incumbent's type.

Proposition 1. *There are regions of the parameter space where an equilibrium with consequential policy change exists. Moreover, relative to $\hat{\Gamma}$, in an equilibrium with consequential policy change,*

(a) the probability of policy change is strictly higher,

(b) and thus expected policy quality is strictly lower.

Consider an incumbent in the benchmark model who, given the quality of her alternative policy, is essentially indifferent between changing the status quo and retaining it. If there is uncertainty about the incumbent's type and changing the status quo increases her probability

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[16]This and additional properties of the voter's posterior belief when the incumbent uses a threshold strategy are derived in Section A.2 of the Appendix.

of reelection, she has an extra incentive to change the status quo relative to the benchmark. This extra incentive leads to additional policy changes. I refer to this additional policy change as *ability signaling*.

Definition 1. *Let y_Γ^* be the incumbent's quality threshold in an equilibrium of Γ. If $q_{sq} - (\hat{x} - x_{sq})^2 > 0$ and*

$$y_\Gamma^* < -(\hat{x} - x_{sq})^2,$$

the incumbent engages in ability signaling. Moreover,

$$D(y_\Gamma^*) = \begin{cases} 0 & \text{if } q_{sq} - (\hat{x} - x_{sq})^2 \leq 0 \\ -(\hat{x} - x_{sq})^2 - \max\{y_\Gamma^*, 0\} & \text{if } q_{sq} - (\hat{x} - x_{sq})^2 > 0 \end{cases}$$

*is the **extent of ability signaling**.*

When the incumbent engages in ability signaling, she sometimes changes the status quo to a lower quality policy than she would be willing to change to without uncertainty about her ability. Essentially, the incumbent trades office rents tomorrow for policy quality today. Since the incumbent already replaces the status quo with relatively lower quality policies in the benchmark, this additional policy change lowers expected policy quality.

Proposition 1 demonstrates that an equilibrium with consequential policy change exists and that the incumbent engages in ability signaling in this type of equilibrium. But under what conditions does an equilibrium with consequential policy change exist?[17] As depicted in Figure 1, with the blue region depicting the region of the parameter space where an equilibrium with consequential policy change exists, the existence of such an equilibrium depends on three things: the degree of ex-ante electoral competition (y-axis), the incumbent's ideological opposition to the status quo (x-axis), and office rents (on the x-axis). The following proposition formally states the precise conditions under which an equilibrium with consequential policy change exists.

Proposition 2. *Fix π_{sq}. An equilibrium with consequential policy change exists if and only if*

(a) $\eta > 0$ and $-(\hat{x} - x_{sq})^2 > \overline{y}(q_{sq}, \eta)$;

(b) $\eta = 0$ and $-(\hat{x} - x_{sq})^2 > r - q_{sq}$;

(c) or $\eta < 0$ and $-(\hat{x} - x_{sq})^2 \in (r - q_{sq}, \underline{y}(q_{sq}, \eta))$,

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[17]In Section A.2 of the Appendix, I provide a full characterization of all PBE surviving D1.

where $\overline{y}(q_{sq}, \eta)$ and $\underline{y}(q_{sq}, \eta)$ solve $\Pr(\tau_I = \overline{\theta}|\pi = \pi_I, \overline{y}(q_{sq}, \eta)) = p + \eta$ and $\Pr(\tau_I = \overline{\theta}|\pi = \pi_{sq}, \underline{y}(q_{sq}, \eta)) = p + \eta$. Otherwise, the incumbent's strategy coincides with her strategy in $\hat{\Gamma}$.
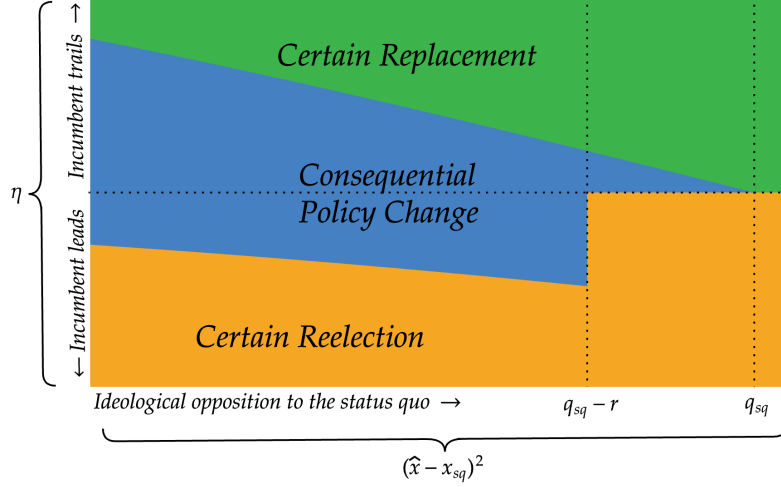

Figure 1: Regions of equilibria with minimum policy change for $q_{sq} = 1$, $r = \frac{1}{4}$, $f(q_I) = e^{-q_I}$, $g(q_I) = 2e^{-2q_I}$, and $p = \frac{1}{2}$.

When the incumbent trails, she is never reelected if she retains the status quo, but she may be if she changes it. In this case, an equilibrium with consequential policy change exists when the incumbent's ideological opposition to the status quo is sufficiently limited. The bound on the extent of ideological opposition to the status quo that supports an equilibrium with consequential policy change depends on $\overline{y}(q_{sq}, \eta)$, which is the quality threshold such that if the incumbent uses this quality threshold, the voter is indifferent between reelecting the incumbent and the challenger when the incumbent changes the status quo. Figure 2 provides intuition for $\overline{y}(q_{sq}, \eta)$. When the incumbent is too ideologically opposed to the status quo, changing the status quo is a sufficiently weak signal of high ability that the incumbent is not reelected when she changes it.[18]

When the incumbent leads, she is always reelected if she changes the status quo but may not if she retains it. In particular, the existence of an equilibrium with consequential policy change requires the incumbent to be sufficiently ideologically opposed to the status quo that when she retains the status quo she is not reelected because retaining is a strong signal of low ability. Whether she is sufficiently ideologically opposed depends on $\underline{y}(q_{sq}, \eta)$, which is the quality threshold such that if the incumbent uses this quality threshold, the

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[18]If the incumbent trails, and if $\overline{y}(q_{sq}, \eta) \in (-(\hat{x} - x_{sq})^2 - r, -(\hat{x} - x_{sq})^2)$, the voter reelects the incumbent with probability $\rho^* \in (0, 1)$ if she changes the status quo and elects the challenger otherwise.
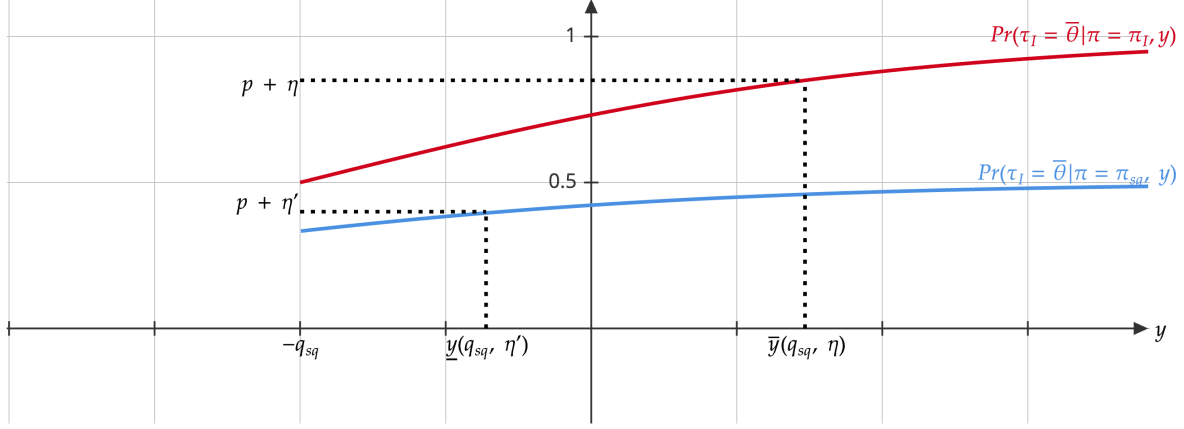
Figure 2: Voter's posterior, $\underline{y}(q_{sq}, \eta)$, and $\overline{y}(q_{sq}, \eta)$. $q_{sq} = 1$, $f(q_I) = e^{-q_I}$, $g(q_I) = 2e^{-2q_I}$, $p = \frac{1}{2}$, $\eta = \frac{7}{20}$, and $\eta' = -\frac{1}{10}$.

voter is indifferent between reelecting the incumbent and the challenger when the incumbent retains the status quo. Figure 2 also provides intuition for $\underline{y}(q_{sq}, \eta)$. The existence of an equilibrium with consequential policy also requires the incumbent not to be too opposed to the status quo. When she is, she always changes the status quo and is always reelected on the equilibrium path since she leads.[19]

In the remaining regions of the parameter space, there are two other types of equilibria: an *equilibrium with certain reelection*, where the incumbent is reelected regardless of whether she changes the status quo, and an *equilibrium with certain replacement*, where the incumbent is replaced whether she changes the status quo.[20]

Proposition 3. *In any equilibrium, the extent of ability signaling is*

(a) weakly increasing in ex-ante electoral competition (i.e. as η approaches zero),

(b) and weakly increasing in the office rents.

There is a connection between the degree of ex-ante electoral competition, which increases as η approaches zero, and the extent of ability signaling.[21] Fix a status quo and the incumbent's ideological ideal point, and suppose the incumbent leads. Furthermore, suppose that

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[19]This is why, when the incumbent leads, existence of an equilibrium with consequential policy change requires $-(\hat{x} - x_{sq})^2 > r - q_{sq}$ as depicted in Figure 1.

[20]If I do not restrict attention to the set of equilibria with minimum policy change, then, when the incumbent trails, there is a band below the region with consequential policy change where two other equilibria exist. One is an equilibrium with consequential policy change where the incumbent is only reelected if she changes the status quo. The other is an equilibrium with consequential policy change where the incumbent is reelected if she changes the status quo and with probability $\rho^* \in [0,1]$ if she retains the status quo. See Section A.2 of the Appendix for more information.

[21]I specify that this result holds for *any equilibrium* since a continuum of equilibria exists when $\eta = 0$ and the incumbent is sufficiently ideologically opposed to the status quo that she changes it for any q_I.

in $\hat{\Gamma}$, the incumbent retains and changes the status quo on the equilibrium path.[22] When η is very negative, the voter has a strong ex-ante preference for the incumbent. As a result, even if the incumbent is very ideologically opposed to the status quo, the voter will reelect her when she retains the status quo. In this case, there is no ability signaling. As the degree of ex-ante political competition increases—as η approaches zero—$\underline{y}(q_{sq}, \eta)$ also increases. Eventually, $\underline{y}(q_{sq}, \eta) > -(\hat{x} - x_{sq})^2$, and the voter no longer reelects the incumbent when she retains the status quo. As a result, ability signaling arises, and the extent of ability signaling increases. Things are similar when $\eta = 0$, in which case the incumbent always engages in ability signaling.

The logic is flipped when $\eta > 0$. When η is close to zero, the incumbent engages in ability signaling. But as η increases away from zero, so does $\underline{y}(q_{sq}, \eta)$. Eventually, $-(\hat{x} - x_{sq})^2 \leq \overline{y}(q_{sq}, \eta)$, and the incumbent is never reelected. Hence, there is no ability signaling.

Additionally, there is a connection between the extent of ability signaling and office rents. When the incumbent trails and is never reelected, increasing the office rents does not affect the incumbent's incentive to change the status quo. But, if the incumbent is reelected when she changes the status quo, increasing office rents makes changing the status quo more attractive, and hence the extent of ability signaling increases. Eventually, the office rents increase to the point that changing the status quo no longer conveys a sufficiently strong signal of high ability for the incumbent to be reelected. To maintain equilibrium, the voter must reelect the incumbent with a lower probability when she changes the status quo. As r goes to infinity, this probability goes to zero. This decrease in the probability of reelection conditional on policy change as the office rents increase maintains the same probability of policy change in equilibrium, and hence, increasing office rents further has no effect on the extent of ability signaling.

When the incumbent leads, increasing the office rents does not affect the probability of policy change when the incumbent is always reelected. However, if she is only reelected when she changes the status quo, increasing the office rents makes policy change more attractive, leading to an increase in the extent of ability signaling.

4.3 Implications

Ability Signaling without Elections Although there is a voter and an election in the model, the implications of the model shed light on policymaking by policymakers who are not elected. Suppose the incumbent is the current superintendent in a school district, and the voter is either someone who could hire someone else to replace the current superintendent

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[22]This ensures the possibility of ability signaling in Γ.

or someone who will potentially hire the current superintendent for a different job. It seems natural to suppose that, in this case, $\eta = 0$. That is, the voter's decision depends entirely on the incumbent's probability of having high ability relative to the challenger's. Then Proposition 1 shows that in equilibrium, the incumbent engages in ability signaling as long as she is not too ideologically to status quo that she changes it for all realizations of q_I. This may also be reasonable to assume in this context. Ability signaling is consistent with qualitative descriptions of policymaking by superintendents. In particular, Hess (1999) argues that the combination of superintendents' desire to improve their reputations—they care about their reputation for career concerns reasons—and their short time horizons—they seek to move to their next job quickly —leads to "policy churn." Superintendents are incentivized to "assume the role of the reformer, initiating a great deal of activity" to bolster their reputations. Otherwise, they will be perceived as "'do nothing' and will be replaced by a more promising successor" (Hess, 1999, p. 43).

Connection to Empirical Literature Empirical work on electoral accountability provides evidence that policymakers' desire for reelection incentivizes action (e.g. Alt et al., 2011). For example, studying state legislators, Fouirnaies and Hall (2022), find that reelection incentives motivate legislators to sponsor more bills, be more productive on committees, and attend more floor votes. These actions benefit voters. For example, productive committee work allows a policymaker to mark up legislation with her constituents' interests in mind (Fouirnaies and Hall, 2022, p. 666).

In Fouirnaies and Hall (2022), the "ideal experiment" would be one where legislators are randomly assigned the opportunity to run for reelection again. In contrast, this model approximates an "ideal experiment" where reelection incentives are fixed but whether there is uncertainty about a policymaker's ability is randomly assigned. In this case, uncertainty also incentivizes action. Still, this action may make the voter worse off.[23] Suppose the voter has preferences over policy of a similar form to the incumbent, has an ideological ideal point of zero, and that the incumbent's ideological benefit from policy change is weakly larger than the challengers (i.e., $(\hat{x} - x_{sq})^2 \geq x_{sq}^2$).

Proposition 4. *In any equilibrium of Γ, the voter's welfare is weakly lower than in $\hat{\Gamma}$.*

If the incumbent has a weakly larger ideological benefit from policy change than the voter, then in the complete information benchmark, the incumbent changes the status quo too much relative to the amount that would maximize the voter's welfare. Incomplete

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[23]Following others in the literature, I define the voter's welfare only in terms of his utility from policy (Canes-Wrone et al., 2001; Fox and Van Weelden, 2012).

information about the incumbent's ability exacerbates this since she sometimes engages in ability signaling, which means she changes the status quo even more.

Excessive Mutability of Laws   Since the founding of the United States, some have feared that there's a connection between elections and excessive policy change. In Federalist 62, James Madison argued:

> The internal effects of a mutable policy are still more calamitous. It poisons the blessing of liberty itself. It will be of little avail to the people, that the laws are made by men of their own choice...if they be repealed or revised before they are promulgated, or undergo such incessant changes that no man, who knows what the law is to-day, can guess what it will be to-morrow.[24]

Madison's concern was that political turnover would lead to excessive policy change because different policymakers had different preferences.[25] There is a sense in which this concern is captured by my model.

Proposition 5. *Fix π_{sq}. In any equilibrium, the probability of policy change is weakly increasing in the incumbent's ideological opposition to the status quo (i.e. as $(\hat{x} - x_{sq})^2$ increases).*

That said, my model identifies an additional reason why elections and excessive policy change might be connected: the desire of a policymaker to signal the ability to develop high-quality policies.

5   Quality Observability

In the model, the voter observes whether the incumbent changes the status quo but does not observe q_I before the election. However, depending on when a policy is enacted, voters may learn the quality of the policy before they vote next. For example, as Mayor of New York City, Eric Adams has presided over developing a plan for a "Trash Revolution," which includes mandated trash bins, more vigorous enforcement of sanitary laws, and new garbage trucks (Lach, 2024; "Mayor", 2024). The rollout of this policy began in 2022 and will continue into spring 2025, which is a few months before the next mayoral election. Since the policy

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[24]Madison (1788a)

[25]Alexis de Tocqueville shared the same concern, writing, "The mutability of the laws is an evil inherent in democratic government, because it is natural to democracies to raise men to power in very rapid succession" (de Tocqueville, 2003).

was implemented well before the next election, voters may learn the quality by the time they decide whether to reelect Adams or replace him. What effect does the timing of when policy change occurs in relation to the next election have on the policymaker's incentives? To answer this question, I assume that if the incumbent changes the status quo, q_I is revealed before the election with probability $s \in [0, 1]$, where s is exogenous. We should expect s to be higher for policy change that occurs earlier in the incumbent's term.

Proposition 6. *In any equilibrium, the extent of ability signaling is weakly decreasing in s. However, the incumbent still engages in ability signaling for some regions of the parameter space when $s = 1$.*

Suppose $s > 0$. Consider an incumbent who, given the quality of her alternative policy, is indifferent between retaining and changing the status quo. In equilibrium, the incumbent uses a threshold strategy. Hence, an incumbent with a higher quality alternative changes the status quo and an incumbent with a lower quality alternative does not. There are two possibilities. In the first case, whether the incumbent is reelected if she changes the status quo does not depend on whether the quality of her alternative is revealed. As a result, increasing s does not affect the indifferent incumbent's incentive to change the status quo.

In the second case, whether the indifferent incumbent is reelected if she changes the status quo depends on whether the quality of her alternative is revealed. In particular, it must be the case that she is only reelected if the quality of her alternative is not revealed.[26] As s increases, the indifferent incumbent's expected utility from changing the status quo decreases. As a result, she now prefers to retain the status quo. Hence, the extent of ability signaling is decreasing in s.

Now suppose $s = 1$. Furthermore, suppose the incumbent's ability is known, and, given the quality of her alternative, she is indifferent between changing the status quo and retaining it. If, instead, there is uncertainty about her ability, she loses the election if she retains the status quo, and her alternative is sufficiently high quality that the voter will reelect her if she changes the status quo, the incumbent now has an additional incentive to change the status quo. This additional incentive leads to ability signaling even though her alternative's quality will be revealed with certainty. This is the same logic as in Judd (2017), in which a policymaker directly reveals her skill through unilaterally action. In equilibrium, when the status quo is sufficiently high quality, high-skill incumbents "show off" by implementing

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[26]If the voter reelects the indifferent incumbent if the quality of her alternative is revealed, then, on the equilibrium path, he must reelect every incumbent who changes the status quo if her alternative's quality is revealed. But then, in equilibrium, by the law of iterated expectations, he must reelect the incumbent if the quality of the status quo is not reveled. Hence, in equilibrium, when the incumbent changes the status quo she is reelected whether or not the quality of her incumbent is revealed.

policies that are lower quality than the status quo but that are demonstrate enough skill to to warrant reelection.

The primary implication of this result is that ability signaling will be more pervasive later in a policymaker's term when the quality of the alternative policy will be less likely to be revealed before the election. This implication emerges from many electoral accountability models where the extent of policymaking distortions depends on the policymaker's political horizoz. (Canes-Wrone et al., 2001; Gratton et al., 2015).

A second implication of this result is that expected policy quality decreases over a policymaker's tenure.

Corollary 1. *In any equilibrium, expected policy quality is weakly increasing in s.*

One might wonder how the incumbent's ex-ante expected utility depends on the probability the voter learns the quality of her alternative if she changes the status quo.

Proposition 7. *Suppose $-(\hat{x} - x_{sq})^2 > r - q_{sq}$.*

(a) *If $\eta < 0$ and $-(\hat{x} - x_{sq})^2 \leq \overline{y}(q_{sq}, \eta)$, the incumbent's expected utility is strictly increasing in s,*

(b) *and if $\eta < 0$ and $-(\hat{x} - x_{sq})^2 \in (\overline{y}(q_{sq}, \eta), \overline{y}(q_{sq}, \eta) + (1 - s)r]$, the incumbent's expected utility is not monotone in s.*

(c) *Otherwise, the incumbent's expected utility is weakly decreasing in s.*

When the incumbent leads or when she trails but is not especially ideologically opposed to the status quo, she is reelected if she changes the status quo and her alternative's quality is not revealed.[27] In this case, information revelation about the alternative's quality can only hurt the incumbent since she loses the election if the voter learns her alternative is low quality. As a result, her expected utility is weakly decreasing in s.

In contrast, when the incumbent trails and is sufficiently ideologically opposed to the status quo, changing the status quo is not a strong enough signal of her high ability for her to win reelection if the quality of her alternative is not revealed. In this case, the incumbent's only hope for reelection is to develop a high-quality alternative, change the status quo, and

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[27]The assumption that $-(\hat{x} - x_{sq})^2 > r - q_{sq}$ implies that the incumbent retains and changes the status quo on the equilibrium path. When this assumption is not satisfied, and in particular $-(\hat{x} - x_{sq})^2 \leq (1 - s)r - q_{sq}$ and $\eta = 0$, the incumbent changes the status quo for all q_I, and a continuum of equilibria exist where the the incumbent is reelected with probability $\rho^* \in [0, 1]$ when she changes the status quo. In this region of the parameter space, whether the incumbent's expected utility is decreasing or increasing in s depends on the particular ρ^*.

have the voter learn the quality of the alternative policy before the election. Hence, the incumbent's expected utility is increasing in s.

Consider a game where the incumbent chooses when to develop her alternative policy during her term and, immediately after learning her alternaive's quality, chooses whether to change the status quo. The longer she waits in her term, the lower s is. Proposition 7 implies that when policy change without quality revelation leads to the incumbent's reelection, she will delay developing her alternative until the end of her term to minimize the probability the voter learns the alternative's quality before the election. This delayed policy development has a similar logic to the theory advanced by the political business cycles literature: policymakers pursue policies with short-term benefits at the end of their terms to boost their electoral prospects (Nordhaus, 1975; Drazen, 2000). However, the incumbent delays development because the voter will not learn her policy's quality, not because the voter will observe the policy's short-term benefits before the election.

But, if the incumbent loses the election when she changes the status quo and her alternative's quality is not revealed, she will develop her alternative policy at the start of her term to maximize the probability the voter learns the alternative policy's quality in time for the election. This looks more like the behavior predicted by the "honeymoon hypothesis," where politicians pursue policies at the start of their term (McCarty, 1997; Beckmann and Godfrey, 2007). The conventional logic is that policymakers have the most political capital at the start of their term. As a result, they have the most latitude to enact new policies at the start of their term. In this model, the logic is that when a policy needs to prove its quality for the incumbent to be reelected, the incumbent will develop it as early as possible.[28]

In this sketch of a game, the incumbent can choose when to develop her alternative, but must choose whether to change the status quo immediately after learning its quality. If, instead, after learning the quality of her alternative, she could choose when to change the status quo, her decision might convey information about the quality of her alternative. Analysis of this game, where the incumbent chooses when to develop her alternative and then when to change the status quo, is beyond the scope of this paper, but the preliminary insight offered by Proposition 7 suggests interesting trade-offs.[29] An incumbent who learns the quality of her alternative is low will want to delay policy change until the end of her term, and an incumbent who learns the quality of her alternative is high will want to do the opposite. But, of course, the voter will recognize this, and this incentive to separate will

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[28]A similar logic leads to a honeymoon period in Gieczewski and Li (2022), where an incumbent implements moderately popular policies at the start of her term to give them time to prove their quality.

[29]Building on the canonical setup from Canes-Wrone et al. (2001), Gibbs (2024) explores signaling through the timing of policy implementation and finds that policymakers may delay implementation to prevent the voter from learning the quality of a policy before an election.

affect the voter's posterior when the quality of the alternative is not revealed.

6 Endogenous Choice of Ideology

The baseline model assumes the ideology of the incumbent's alternative policy is exogenously fixed at her ideological ideal point. In a setting where the incumbent unilaterally changes the status quo, it may be reasonable to assume she will pursue her preferred policy since she does not require the agreement of any other actors. Yet, as Proposition 2 illustrates, whether policy change is electorally consequential depends on the incumbent's ideological opposition to the status quo. In light of this, does the incumbent have any incentive to develop a policy that differs from her ideological ideal point? To answer this question, suppose the incumbent publicly chooses $x_I \in \mathbb{R}$, then privately learns q_I, and then chooses whether to retain the status quo or replace it with $\pi_I = (x_I, q_I)$.[30]

Proposition 8. *When $\eta < 0$ and $-(\hat{x} - x_{sq})^2 \in (r - q_{sq}, \underline{y}(q_{sq}, \eta))$, there is a region of the parameter space where, in equilibrium, the incumbent develops an alternative with ideology $x_I \in \{\underline{x_I}^*, \overline{x_I}^*\}$, where $\underline{x_I}^* = \hat{x} - \sqrt{\underline{y}(q_{sq}, \eta) + (\hat{x} - x_{sq})^2}$ and $\overline{x_I}^* = \hat{x} + \sqrt{\underline{y}(q_{sq}, \eta) + (\hat{x} - x_{sq})^2}$.*

Suppose the incumbent trails, and that if she develops a policy at her ideological ideal point, she only wins reelection if she changes the status quo. By proposing a policy that differs from her ideological ideal point, the incumbent reduces her incentive to change the status quo because doing so will yield a lower ideological benefit from policy change.[31] That is, by proposing a policy that differs from her ideological ideal point, the incumbent commits to a higher quality threshold. This commitment makes retaining the status quo a weaker signal of low ability. If she develops a policy with an ideology sufficiently far from her ideological ideal point, retaining will be such a weak signal that she will win reelection if she retains. Of course, making such a commitment comes at a cost: fixing q_I, successful policy change yields a lower payoff. But, in some cases, the electoral benefit outweighs the ideological cost.[32]

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[30]A key assumption is that policy quality is not transferable (Hirsch and Shotts, 2012). That is, the incumbent cannot develop a policy with ideology x_I and then transfer the quality to a different policy with quality x_I'.

[31]The model assumes the incumbent's utility from quality does not depend on the ideology of the policy. That is not necessary for this result. It is sufficient that fixing quality, the incumbent's utility from a policy is lower the farther the ideology of the policy is from her ideological ideal point.

[32]When the incumbent trails, she also sometimes chooses an ideology that differs from her ideological ideal point. However, she does this when there would be a mixed strategy equilibrium in the baseline. Moreover, the mixed strategy equilibrium continues to exist. Hence, I focus on the case where the ability to chooose x_I destroys some of the baseline equilibria.

When the incumbent develops a policy with an ideology that differs from her ideological ideal point, she chooses the ideology that is sufficiently far from her ideological ideal point to make the voter indifferent between the incumbent and challenger when she retains. There two such ideologies, one to the right of her ideological ideal point and one to the left. Both choices will affect the voter's inference in the same way. However, there are many reasons why we might expect the incumbent to break her indifference between the two ideologies by choosing the one that is more moderate than her ideological ideal point. If there is a small amount of uncertainty about the incumbent's ideological ideal point, she is incentivized to choose the ideology close to the voter's ideological ideal point as in Fearon (1999). Or if the incumbent cares about the longevity of her policy and the challenger has an ideological ideal point that is less than zero, the incumbent has an incentive to choose an ideology that is closer to the challenger's ideological ideal point since this will reduce the challenger's incentive to change the incumbent's policy in the future. Using these arguments, Proposition 8 can be interpreted as saying the incumbent has an incentive to moderate.

It is illustrative to juxtapose this result with Hirsch and Shotts (2012, 2018) and Hitt et al. (2017), who also study models where policy has quality and ideology, and moderation emerges in equilibrium. However, it emerges because a policymaker needs to secure agreement from another player with a different ideological ideal point. That is, moderation emerges from a Downsian logic—by moving the ideology of a policy closer to the other player's ideological ideal point, the policymaker makes her policy more attractive. The moderation in this model emerges for a reason entirely unrelated to Downsian logic. The policymaker moderates because it affects the information conveyed by her decision to retain or change the status quo.

7 Veto Institutions

The baseline model assumes the incumbent can unilaterally change the status quo, and I show that in such a setting, uncertainty about her ability and her desire for reelection leads to distorted policymaking in the form of ability signaling. This produces excessive policy change. Moreover, this excessive policy change decreases expected policy quality and the voter's welfare relative to a setting without uncertainty about the incumbent's ability.

What happens if the incumbent cannot act unilaterally? In many policymaking institutions, an incumbent policymaker must secure the agreement of another policymaker to change the status quo. Moreover, it is common for policymakers to interact under the shadow of future electoral competition. For example, the incumbent might be the majority party in the Senate that needs the support of the minority party, the challenger, to pass legislation.

To study the effect of uncertainty about the ability to develop high-quality policies in this type of setting, I study an extended version of the baseline model, denoted Γ^v, where:

1. Nature draws the policymakers' types and q_I.

2. The incumbent privately learns q_I.

3. **The incumbent chooses whether to retain the status quo, $\pi = \pi_{sq}$, or propose a policy change, $\tilde{\pi} = (\hat{x}, q_I)$.**

4. **If the incumbent proposes a policy change, the challenger observes q_I and chooses whether to block the change, $\pi = \pi_{sq}$, or agree to it, $\pi = \tilde{\pi}$.**

5. **The voter observes the incumbent and challenger's decisions but not q_I.**

6. The voter chooses whether to elect the incumbent or the challenger.

In this extension, the incumbent's utility function is the same as in the baseline model. The challenger also cares about the quality and ideology of policy and winning reelection. Given a policy with ideology x and quality q, the challenger's utility function is

$$u_C(x, q) = -(\hat{x}_C - x)^2 + q + (1 - \mathbb{1}_{e=I})r,$$

where $\hat{x}_C$ is the challenger's ideological ideal point.

I make the following assumption about the location of the challenger and incumbent's ideological ideal points relative to the ideology of the status quo.

Assumption 2. $\hat{x}_C \leq x_{sq} \leq \hat{x}$.

This assumption—that the ideology of the status quo is on the Pareto frontier—implies the challenger's ideological benefit from policy change is weakly smaller than the incumbent's.

In addition to equilibrium conditions (i.)-(iv.), I focus on equilibria in which:

(v.) The incumbent proposes a policy change for all q_I.

In the absence of this condition, there are a continuum of equilibria where the incumbent does not propose a policy change for some realizations of q_I knowing the challenger would block them if she proposed them, and proposes a policy change for other realizations of q_I knowing they will blocked. But, in both cases, her probability of reelection is the same. In light of this, and to simplify the exposition of the analysis, I focus on equilibria where the incumbent proposes a policy change for all q_I.

Lemma 2. *In any equilibrium, the challenger uses a threshold strategy and agrees to a proposed policy change if and only if $q_I \geq q_{sq} + z^*$, where $z^* \in [-q_{sq}, \infty)$.*

Suppose an equilibrium exists. In such an equilibrium, and for any proposed policy change, the challenger's utility from blocking the proposed policy change is constant for all q_I. On the other hand, the challenger's utility from agreeing to a proposed policy change is increasing in q_I. This implies that in any equilibrium, the challenger uses a threshold strategy and accepts proposed policy changes that are sufficiently high quality. As a result, the voter updates about the incumbent's ability similarly to how he updates in the baseline model. When the challenger agrees to the proposed policy change , the voter updates positively about the incumbent's ability, and when the challenger blocks a proposed policy change, the voter updates negatively about the incumbent's ability.

Let $\hat{\Gamma}^v$ be the complete information benchmark of Γ^v.

Proposition 9. *Relative to $\hat{\Gamma}^v$, in any equilibrium of Γ^v,*

 (a) *the probability of policy change is weakly higher,*

 (b) *and thus expected policy quality is weakly lower.*

Suppose there is no uncertainty about the incumbent's type, and the challenger is indifferent between accepting and blocking a proposed policy change. Now, suppose there is uncertainty about the incumbent's type. If the challenger blocks a proposed policy change, the voter updates negatively about the incumbent's ability. Hence, independent of ideological concerns, the challenger sometimes has an electoral incentive to block a policy change proposed by the incumbent.

The key implication of Proposition 9 is that requiring the incumbent to gain the challenger's support to change the status leads to a new distortion: the challenger sometimes blocks policy changes that he would allow absent uncertainty about the incumbent's ability. I refer to this as *ability blocking.*[33]

This implication highlights a fundamental trade-off between making it easier and harder to make policy. In the words of James Madison writing in Federalist 73,

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[33]If x_{sq} is not on the Pareto frontier, there are two possibilities. In the first, the challenger's ideological benefit from policy change is still weakly smaller than the incumbent's. In this case, the challenger still engages in ability blocking. In the second, the challenger's ideological benefit from policy change is strictly greater than that of the incumbent. This case requires a different assumption about the incumbent's proposal behavior since it cannot be an equilibrium for her to propose a policy change the challenger will agree to if the incumbent prefers retaining the status quo over changing it to her alternative. However, if I focus on equilibria where the incumbent never proposes a policy that is not accepted, there may be ability signaling or ability blocking in equilibrium.

It may perhaps be said that the power of preventing bad laws includes that of preventing good ones; and may be used to the one purpose as well as to the other.[34]

Introducing a veto means the incumbent no longer engages in ability signaling. However, it comes at the expense of ability blocking.

An additional implication of Proposition 9 is that the challenger's behavior is consistent with the strategic, electorally motivated opposition observed in roll-call voting in Congress. Notably, even if the challenger and incumbent have the same ideological preferences, the challenger will sometimes block policy change he would allow if there was no uncertainty about the incumbent's type. This is reminiscent of Lee (2009), who uses roll-call votes to document the extent of disagreement between the democrats and republicans in the Senate on issues that lack a clear ideological valence.[35]

Additionally, the extent of ability blocking that arises in equilibrium is related to ex-ante electoral competition.

Definition 2. *Let $y^*_{\Gamma^v}$ be the challenger's quality threshold in an equilibrium of Γ^v. If $y^*_{\Gamma^v} > 0$ and*

$$y^*_{\Gamma^v} > -(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2,$$

the challenger engages in ability blocking. Moreover,

$$D(y^*_{\Gamma^v}) = \begin{cases} 0 & \text{if } y^*_{\Gamma^v} \leq 0 \\ y^*_{\Gamma^v} - \max\{-(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2, 0\} & \text{if } y^*_{\Gamma^v} > 0 \end{cases}$$

*is the **extent of ability blocking**.*

When $y^*_{\Gamma^v} > 0$, the challenger blocks some proposed policy changes he would allow under complete information.

Proposition 10. *In any equilibrium, the extent of ability blocking is weakly increasing in ex-ante electoral competition (i.e. as η approaches zero).*

The intuition for this proposition parallels the intuition for (a) in Proposition 3. The challenger's ideological preferences are constant in η, while his incentive to engage in ability blocking is most salient when the election close.[36]

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[34]Madison (1788b)

[35]Lee (2009) finds that over one-third of party-line votes in the Senate in the 97th-108th Congresses occurred on issues lacking a clear ideological dimension.

[36]This comparative static is the same if I focus on the equilibrium with maximum policy change.

This result is consistent with theorizing about the connection between electoral competition and partisan conflict in Congress (Lee, 2016). When there is uncertainty about which party will hold the majority tomorrow, congressional parties are incentivized to take actions that promote their image and damage the other party's image. This argument is supported by evidence from staffers and legislators in the challenger, who perceive blocking the incumbent as advantageous. For example, Lee (2016) quotes a Senate leadership staffer saying "In the minority, you don't want to fuel the success of the majority... Too much deal making can perpetuate them in the majority."

A final insight from this extension of the baseline model comes from comparing the incumbent's probability of reelection when she can change the status quo unilaterally to her probability of reelection when the challenger can veto.

Proposition 11. *There is a region of the parameter space where the probability the incumbent is reelected in Γ^v is higher than the probability she is reelected in Γ.*

By Assumption 2, the incumbent's ideological benefit from policy change is weakly larger than the challenger's. This, along with the challenger's electoral considerations, means the challenger blocks some policy change the incumbent would implement in Γ. When this is the case, successful policy change is a relatively stronger signal of high ability, and failure to change the status quo is a relatively weaker signal of low ability. The implication is that the incumbent's probability of reelection in Γ^v is sometimes higher than the incumbent's in Γ.

8 Robustness

In Section B of the Appendix, I explore whether the model is robust to alternative assumptions.

8.1 Second Policymaking Period

Suppose there is a second policymaking period where the winner of the election develops a distinct policy, $\check{\pi}_j = (\check{x}_j, \check{q}_j)$, and chooses whether to implement it or retain the status quo, $\check{\pi}_{sq} = (0, 0)$. In this case, the second-period incumbent always changes the status quo, which means the voter's expected utility from electing a particular policymaker depends on his belief about that policymaker's ability and the distance between the voter's ideological ideal point and the ideology of the policy the incumbent will enact. In particular, he will reelect the incumbent if the probability of her having high ability is sufficiently large.

8.2 Incumbent Knows Her Type

Suppose the incumbent knows whether she has high or low ability. As in the baseline model, she must use a threshold strategy in equilibrium where she changes the status quo if the quality of her alternative is sufficiently high. Moreover, having observed q_I, neither her expected utility from changing the status quo nor her expected utility from retaining the status quo depends on her type. Hence, she must use the same threshold regardless of her type.

8.3 Election Outcome Affects Policy

Suppose the election outcome affects policy. In particular, if the incumbent wins reelection, the policy she chose is implemented, and if the challenger is elected, the status quo is retained regardless of the incumbent's choice. Then, in addition to selecting the policymaker who is more likely to have high ability, the election is a referendum on the incumbent's chosen policy.

When the incumbent is reelected in equilibrium with positive probability, she uses a threshold strategy.[37] This implies that changing the status quo is a signal of high ability, and retaining is a signal of low ability. However, when voting, the voter cares about more than just each policymaker's ability; she also cares about the ideology and quality of the policy that will be implemented. While things are more complicated, qualitatively similar results emerge where, if policy change strictly increases the probability the incumbent is reelected, she engages in ability signaling.

9 Conclusion

I studied a model with uncertainty about a policymaker's ability to develop high-quality policies. When the policymaker unilaterally changes the status quo, she engages in ability signaling, which produces excessive policy change and lowers expected policy quality relative to when there is complete information about her type. Requiring her to secure the agreement of another policymaker under the shadow of future electoral competition ameliorates this initial distortion. Yet, it produces another: ability blocking, where the second policymaker blocks policy change he would allow under complete information. Hence, uncertainty about the incumbent's ability produces excessive policy change under unilateral policymaking but leads to excessive gridlock under a veto institution. Importantly, these distortions

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[37]If, in equilibrium, she is never reelected, her decision whether to retain or change the status quo has no effect on her utility from the policy. As a result, she no longer must use a threshold strategy in equilibrium.

are independent of ideological considerations. They arise solely because of incomplete information.

Two natural extensions come to mind. First, one could endogenize the status quo in a model with two periods. In the first period, the incumbent chooses whether to implement a policy or retain the status quo. Then, the voter chooses whether to reelect the incumbent or replace her with a challenger without observing the quality of the incumbent's policy. In the second period, the election winner chooses whether to retain the status quo inherited from the previous period or to change it after learning the quality of their alternative policy. This is related to the extension described in Section 8.3, but there are important differences. For one, the voter's decision is more complicated since what the elected politician will do tomorrow depends on the quality of their inherited status quo, but the voter does not observe the quality of the status quo when he votes.

Second, as discussed in Section 5, one could allow the incumbent to choose when to change the status quo after learning the quality of her alternative policy. I showed that if the incumbent chooses when to develop an alternative and then immediately chooses whether to change the status quo, she delays development until the end of her term in some cases and expedites development in others. When the incumbent chooses when to develop a policy and then whether to change the status quo, her choice conveys no information about quality. However, if the incumbent decides when to develop her alternative and then when to change the status quo after learning the alternative policy's quality, things are more complicated. An incumbent who learns her alternative is low quality has an incentive to delay policy change to minimize the probability the voter learns the policy's quality before the election. And an incumbent who learns her alternative is high quality has an incentive to act immediately to maximize the probability the voter learns the policy's quality before the election. But this means that *when* the incumbent changes the status quo conveys information.

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A   Proofs of Claims in Main Text

A.1   Lemma 1

Proof. Suppose a perfect Bayesian equilibrium (PBE) exists where the voter reelects the incumbent with probability $\gamma^* \in [0,1]$ if she retains the status quo and with probability $\lambda^* \in [0,1]$ if she changes it. Note, (i.) one of the incumbent's actions might be off the equilibrium path, and (ii.) neither λ^* nor γ^* depend on q_I. In this PBE, the incumbent must change the status quo if and only if $q_I \geq q_{sq} + y^*$, where

$$
y^* = \begin{cases} -q_{sq} & \text{if } q_{sq} - (\hat{x} - x_{sq})^2 + (\gamma^* - \lambda^*)r < 0 \\ -(\hat{x} - x_{sq})^2 + (\gamma^* - \lambda^*)r & \text{if } q_{sq} - (\hat{x} - x_{sq})^2 + (\gamma^* - \lambda^*)r \geq 0. \end{cases}
$$

Since this is true for any PBE, it must be true for any equilibrium as defined in Section 2.
∎

A.2   Propositions 1 and 2

Outline of the proof: I prove Lemmas 3 and 4 and then use them to characterize all PBE of Γ in Propositions 12, 13, and 14 under the assumption that off the equilibrium path,

$$
\Pr(\tau_I = \overline{\theta}|\text{deviation off path}) = \frac{pf(0)}{pf(0) + (1-p)g(0)} \equiv \mu.
$$

I then show that D1 forces the voter to believe that a deviation by the incumbent comes from an incumbent whose alternative has $q_I = 0$ and as a result has high ability with probability μ in Proposition 15. Propositions 1 and 2 follow from applying equilibrium condition (4) to the equilibria identified in Propositions 12, 13, and 14 .

Lemma 3. *If the incumbent uses a threshold such that she changes the status quo if and only if $q_I \geq q_{sq} + y$, for $y \in (-q_{sq}, \infty)$,*

(a) $\Pr(\tau_I = \overline{\theta}|\pi = \pi_I) > p$ *and* $\Pr(\tau_I = \overline{\theta}|\pi = \pi_I, y)$ *is increasing in y,*

(b) *and* $\Pr(\tau_I = \overline{\theta}|\pi = \pi_{sq}) < p$ *and* $\Pr(\tau_I = \overline{\theta}|\pi = \pi_{sq}, y)$ *is increasing in y.*

Proof. Suppose the incumbent uses a threshold strategy such that she change the status quo if and only if $q_I \geq q_{sq} + y$, for $y \in (-q_{sq}, \infty)$.

(a) $\Pr(\tau_I = \overline{\theta}|\pi = \pi_I) = \frac{(1-F(q_{sq}+y))p}{(1-F(q_{sq}+y))p+(1-G(q_{sq}+y))(1-p)} > p$ if

$$
(1 - F(q_{sq} + y)) > p(1 - F(q_{sq} + y)) + (1-p)(1 - G(q_{sq} + y)),
$$

which is immediate due to MLRP implying FOSD.

Rearranging, $\Pr(\tau_I = \bar{\theta}|\pi = \pi_I) = \frac{1}{1+\frac{1-p}{p}\frac{(1-G(q_{sq}+y))}{(1-F(q_{sq}+y))}}$. Differentiating the ratio of the CDFs in the denominator with respect to y,

$$\frac{\partial}{\partial y}\frac{1-G(q_{sq}+y)}{1-F(q_{sq}+y)}$$
$$= \frac{-(1-F(q_{sq}+y))g(q_{sq}+y)-(-(1-G(q_{sq}+y)f(q_{sq}+y)))}{(1-F(q_{sq}+y))^2}.$$

This is negative since

$$(1-G(q_{sq}+y)f(q_{sq}+y)) < (1-F(q_{sq}+y))g(q_{sq}+y)$$
$$\Leftrightarrow \frac{f(x)}{1-F(x)} < \frac{g(x)}{1-G(x)},$$

and the second line is the monotone hazard rate property which is implied by MLRP.

(b) $\Pr(\tau_I = \bar{\theta}|\pi = \pi_{sq}) = \frac{F(q_{sq}+y)p}{F(q_{sq}+y)p+G(q_{sq}+y)(1-p)} < p$ is less than p if

$$F(q_{sq}+y) < F(q_{sq}+y)p + G(q_{sq}+y)(1-p).$$

This is immediate due to the well-known property that MLRP implies first order stochastic dominance (FOSD).

Rearranging, $\Pr(\tau_I = \bar{\theta}|\pi = \pi_{sq}) = \frac{1}{1+\frac{1-p}{p}\frac{G(q_{sq}+y)}{F(q_{sq}+y)}}$. Differentiating the ratio of the CDFs in the denominator:

$$\frac{\partial}{\partial y}\frac{G(q_{sq}+y)}{F(q_{sq}+y)} = \frac{F(q_{sq}+y)g(q_{sq}+y)-G(q_{sq}+y)f(q_{sq}+y)}{F(q_{sq}+y)^2}.$$

This is negative since

$$F(q_{sq}+y)g(q_{sq}+y) < G(q_{sq}+y)f(q_{sq}+y)$$
$$\Leftrightarrow \frac{f(q_{sq}+y)}{g(q_{sq}+y)} > \frac{F(q_{sq}+y)}{G(q_{sq}+y)}.$$

where the last line is due to a well-known property of strict MLRP that $\frac{f(x)}{g(x)} > \frac{F(x)}{G(x)}$.

∎

Lemma 4. (a) *Fix $\eta < 0$. There exists a unique $\underline{y}(q_{sq}, \eta) \in (-q_{sq}, \infty)$ such that $\Pr(\tau_I = \bar{\theta}|\pi = \pi_{sq}, \underline{y}(q_{sq}, \eta)) = p + \eta$ and for all $y > \underline{y}(q_{sq}, \eta)$, $\Pr(\tau_I = \bar{\theta}|\pi = \pi_{sq}, y) > p + \eta$.*

(b) *Fix $\eta > 0$. There exists a unique $\bar{y}(q_{sq}, \eta) \in (-q_{sq}, \infty)$ such that for $\Pr(\tau_I = \bar{\theta}|\pi =$*
   $\pi_I, \bar{y}(q_{sq}, \eta)) = p + \eta$ and for all $y > \bar{y}(q_{sq}, \eta)$, $\Pr(\tau_I = \bar{\theta}|\pi = \pi_I) > p + \eta$.

Proof. (a) Suppose $\eta < 0$.

$$\lim_{y \to -q_{sq}} \Pr(\tau_I = \bar{\theta}|\pi = \pi_{sq}, y) = \frac{1}{1 + \frac{1-p}{p}\frac{g(0)}{f(0)}} \equiv \underline{L},$$

and by Lemma 3, $\Pr(\tau_I = \bar{\theta}|\pi = \pi_{sq}, y)$ is strictly increasing in y. Hence, if

$$\eta > \underline{L} - p \equiv \underline{\eta}, \tag{2}$$

there exists a unique $\underline{y} \in (-q_{sq}, \infty)$ such that $\Pr(\tau_I = \bar{\theta}|\pi = \pi_{sq}, \underline{\eta}) = p + \eta$, and for
all $y > \underline{y}$, $\Pr(\tau_I = \bar{\theta}|\pi = \pi_{sq}, \underline{y}) > p + \eta$. Moreover, $\underline{y}$ is the y that solves

$$\frac{F(q_{sq} + y)p}{F(q_{sq} + y)p + G(q_{sq} + y)(1 - p)} = p + \eta,$$

and hence $\underline{y}$ is a function of η and q_{sq}.

(b) Suppose $\eta > 0$. By Lemma 3, $\Pr(\tau_I = \bar{\theta}|\pi = \pi_I)$ is strictly increasing in y. Moreover,
$\Pr(\tau_I = \bar{\theta}|\pi = \pi_I, y)$ is a probability so it is bounded above by one. Hence, there is a
least upper bound of $\Pr(\tau_I = \bar{\theta}|\pi = \pi_I, y)$, and this is the limit as $y \to \infty$. Call this
least upper bound $\bar{L}$. Hence, if

$$p + \eta < \bar{L}$$
$$\Leftrightarrow \eta < \bar{L} - p \equiv \bar{\eta}, \tag{3}$$

there exists $\bar{y}(q_{sq}, \eta)$ such that $\Pr(\tau_I = \bar{\theta}|\pi = \pi_I, y) \geq p + \eta$ for all $y \geq \bar{y}(q_{sq}, \eta)$.
Moreover, $\bar{y}$ is the y that solves

$$\frac{(1 - F(q_{sq} + y))p}{(1 - F(q_{sq} + y))p + (1 - G(q_{sq} + y))(1 - p)} = p + \eta,$$

and hence is a function of η and q_{sq}.

∎

Proposition 12. *Fix π_{sq} and $\eta < 0$.*

(a) *If $-(\hat{x} - x_{sq})^2 \leq r - q_{sq}$, there is a unique PBE where the incumbent changes the status*
   quo for all q_I and is always reelected on the equilibrium path.

(b) If $-(\hat{x} - x_{sq})^2 \in (r - q_{sq}, \underline{y}(q_{sq}, \eta) + r)$, there is a PBE where the incumbent changes the status quo if and only if (6) is satisfied, and is reelected if and only if she changes the status quo.

(c) If $-(\hat{x} - x_{sq})^2 \in [\underline{y}(q_{sq}, \eta), \underline{y}(q_{sq}, \eta) + r]$, there is a PBE where the incumbent changes the status quo if and only if (8) is satisfied, and is reelected with probability one if she changes the status quo and with probability $\rho^* \in [0, 1]$ if she retains the status quo.

(d) If $-(\hat{x} - x_{sq})^2 > \underline{y}(q_{sq}, \eta)$, there is a PBE where the incumbent changes the status quo if and only if (7) is satisfied, and is always reelected.

Proof. Fix π_{sq} and $\eta < 0$, and suppose that off the equilibrium path the voter believes the incumbent has high ability with probability μ. By Lemma 3, the incumbent is reelected when she changes the status quo in any PBE.

Suppose there is a PBE where the incumbent changes the status quo for all q_I. Then on the path the voter's posterior equals his prior. $p > p + \eta$ for $\eta < 0$, which implies that the incumbent is always reelected on the equilibrium path. If she deviates off the path and retains the status quo, she is not reelected since $\mu < p + \eta$ for all $\eta < 0$ and satisfying Assumption 1. Hence, for this PBE to exist, it must be that

$$0 \geq q_{sq} - (\hat{x} - x_{sq})^2 - r, \tag{4}$$

which ensures the incumbent prefers changing the status quo to retaining even if $q_I = 0$. This shows (a) in the proposition.

It remains to consider PBE where the incumbent changes and retains the status quo on the equilibrium path. By Lemma 4, $\underline{y}(q_{sq}, \eta)$ exist. Hence, there are three possibilities: $\underline{y}(q_{sq}, \eta) > y^*$, $\underline{y}(q_{sq}, \eta) < y^*$, and $\underline{y}(q_{sq}, \eta) = y^*$. Note, that in any PBE where the incumbent changes and retains on the equilibrium path, it must be that

$$y^* > -q_{sq} \tag{5}$$

If $y^* < \underline{y}(q_{sq}, \eta)$ and (5) is satisfied, the incumbent is reelected if and only if she changes the status quo. Therefore, the incumbent changes the status quo if and only if

$$q_I \geq q_{sq} - (\hat{x} - x_{sq})^2 - r. \tag{6}$$

For this PBE to exist, it must be that

$$-(\hat{x} - x_{sq})^2 - r < \underline{y}(q_{sq}, \eta),$$

and (5) is satisfied. The first condition ensures $y^* < \underline{y}(q_{sq}, \eta)$. Combining it with (5) shows (b) in the proposition.

If $y^* > \underline{y}(q_{sq}, \eta)$ and (5) is satisfied, the incumbent is reelected whether she retains or changes the status quo. Therefore, she changes the status quo if and only if

$$q_I > q_{sq} - (\hat{x} - x_{sq})^2. \tag{7}$$

For this PBE to exist, it must be that

$$-(\hat{x} - x_{sq})^2 > \underline{y}(q_{sq}, \eta)$$

and (5) is satisfied. The first condition ensures $y^* > \underline{y}(q_{sq}, \eta)$. When it is satisfied, it implies (5) is satisfied. This proves (d) in the proposition.

Finally, suppose $y^* = \underline{y}(q_{sq}, \eta)$ and (5) is satisfied. Then, the voter reelects the incumbent if she changes the status quo and is indifferent between the incumbent and challenger when the incumbent retains the status quo. Given this indifference, suppose the voter reelects the incumbent with probability ρ when the incumbent retains. For a particular ρ, the incumbent changes the status quo if

$$q_I \geq q_{sq} - (\hat{x} - x_{sq})^2 + (\rho - 1)r. \tag{8}$$

For the voter to be indifferent, it must be that

$$-(\hat{x} - x_{sq})^2 + (\rho - 1)r = \underline{y}(q_{sq}, \eta),$$

which implies that in equilibrium $\rho^* \equiv \frac{\underline{y}(q_{sq}, \eta) + (\hat{x} - x_{sq}^2)}{r} + 1$. For this PBE to exist, it must be that

$$\underline{y}(q_{sq}, \eta) \in [-(\hat{x} - x_{sq})^2 - r, -(\hat{x} - x_{sq})^2]$$

and (5) is satisfied. The first condition ensures $\rho^* \in [0, 1]$. Plugging ρ^* into the incumbent's quality threshold shows she changes the status quo if and only if

$$q_I \geq q_{sq} + \underline{y}(q_{sq}, \eta),$$

and by definition $\underline{y}(q_{sq}, \eta) > -q_{sq}$. Hence, (5) is satisfied. This shows (c) in the proposition. ∎

Proposition 13. *Fix* π_{sq} *and* $\eta > 0$.

(a) *If $-(\hat{x} - x_{sq})^2 < -q_{sq}$, there is a unique PBE where the incumbent changes the status quo for all q_I and is never reelected on the equilibrium path.*

(b) *If $-(\hat{x} - x_{sq})^2 \in (-q_{sq}, \overline{y}(q_{sq}, \eta)]$, there is a unique PBE where the incumbent changes the status quo if and only if (7) is satisfied, and is never reelected.*

(c) *If $-(\hat{x} - x_{sq})^2 > \overline{y}(q_{sq}, \eta)$, there is a unique PBE where the incumbent changes the status quo if and only if (10) is satisfied, and is reelected with probability $\rho^* \in (0, 1]$ if she changes the status quo.*

Proof. Fix π_{sq} and $\eta > 0$, and suppose that off the equilibrium path the voter believes the incumbent has high ability with probability μ. By Lemma 3, the incumbent is not reelected when she retains the the status quo in any PBE.

Suppose there is a PBE where the incumbent changes the status quo for all q_I. On the path, the voter's posterior equals his prior. Off the path, the voter's poster equals μ. Because the incumbent trails, she is neither reelected on the path nor off the path. Hence, this PBE exists if

$$0 \geq q_{sq} - (\hat{x} - x_{sq})^2. \tag{9}$$

This shows (a) in the proposition.

It remains to consider PBE where the incumbent changes and retains the status quo on the equilibrium path. By Lemma 4, $\overline{y}(q_{sq}, \eta)$ exists. Hence, there are three possibilities: $\overline{y}(q_{sq}, \eta) > y^*$, $\overline{y}(q_{sq}, \eta) < y^*$, and $\overline{y}(q_{sq}, \eta) = y^*$. Note, in any such PBE, it must be that (5) is satisfied.

If $y^* < \overline{y}(q_{sq}, \eta)$ and (5) is satisfied, the incumbent is never reelected. Then the incumbent changes the status quo if and only if (7) is satisfied. For this PBE to exist, it must be that

$$-(\hat{x} - x_{sq})^2 < \overline{y}(q_{sq}, \eta)$$

and (5) is satisfied. The first condition ensures $y^* < \overline{y}(q_{sq}, \eta)$ and (5) ensures the incumbent retains on the equilibrium path. Combining them proves (b) in the proposition.

If $y^* > \overline{y}(q_{sq}, \eta)$ and (5) is satisfied, the incumbent is reelected with probability one when she changes the status quo but is not reelected if she retains the status quo. Then the incumbent changes the status quo if and only if (6) is satisfied. For this PBE to exist, it must be that

$$-(\hat{x} - x_{sq})^2 - r > \overline{y}(q_{sq}, \eta)$$

and (5) is satisfied. The first condition ensures $y^* > \overline{y}(q_{sq}, \eta)$. When it is satisfied, it implies (5) is satisfied.

Finally, suppose $y^* = \overline{y}(q_{sq}, \eta)$ and (5) is satisfied. In this case, the voter is indifferent between electing the challenger and the incumbent when the incumbent changes the status quo and, hence, can reelects the incumbent with probability $\rho \in [0, 1]$. Given a particular ρ, the incumbent changes the status quo if and only if

$$q_I \geq q_{sq} - (\hat{x} - x_{sq})^2 - \rho r. \tag{10}$$

For the voter to be indifferent, it must be that

$$-(\hat{x} - x_{sq})^2 - \rho r = \overline{y}.$$

which implies that in equilibrium $\rho^* \equiv \frac{-(\hat{x} - x_{sq})^2 - \overline{y}(q_{sq}, \eta)}{r}$. For this PBE to exist it must be that

$$\overline{y}(q_{sq}, \eta) \in [-(\hat{x} - x_{sq})^2 - r, -(\hat{x} - x_{sq})^2]$$

and (5) is satisfied. The first condition ensures $\rho^* \in [0, 1]$. Substituting ρ^* into the incumbent's quality threshold and using the definition of $\overline{y}(q_{sq}, \eta)$ that the first condition implies (5) is satisfied. This, with the previous paragraph, shows (c). ∎

Proposition 14. *Fix π_{sq} and $\eta = 0$.*

(a) *If $-(\hat{x} - x_{sq})^2 \leq r - q_{sq}$, a continuum of PBE exist where the incumbent changes the status quo for all q_I and is reelected with probability $\rho^* \in [0, 1]$.*

(b) *If $-(\hat{x} - x_{sq})^2 > r - q_{sq}$, there is a unique PBE where the incumbent changes the status quo if and only if (6) is satisfied, and is reelected if and only if she changes the status quo.*

Proof. Fix π_{sq} and $\eta = 0$, and suppose that off the equilibrium path the voter believes the incumbent has high ability with probability μ.

Suppose there is a PBE where the incumbent changes the status quo for all q_I. Then the voter's posterior on the equilibrium path equals his prior. Hence, the voter is indifferent between the challenger and incumbent and reelects the incumbent with probability $\rho \in [0, 1]$. Off the path, the voter believes the incumbent has high ability with probability μ, and hence does not reelect the incumbent because $p > \mu$. For a given ρ, a PBE exists where the

incumbent changes the status quo for all q_I if

$$0 \geq q_{sq} - (\hat{x} - x_{sq}) - \rho r$$

Therefore, a ρ^* exists such that the incumbent lacks a profitable deviation from changing the status quo for all q_I if (4) is satisfied. This shows (a) in the proposition.

Suppose there is a PBE where the incumbent changes and retains the status quo on the equilibrium path. By Lemma 3, the incumbent is reelected when she changes the status quo and is not reelected if she retains the status quo. Hence, the incumbent changes the status quo if and only if (6) is satisfied. This is a PBE as long as (4) is not satisfied. This shows (b) in the proposition.

∎

Proposition 15. *In any PBE of* Γ *surviving D1,*

$$\Pr(\tau_I = \bar{\theta} | \textit{deviation off path}) = \frac{pf(0)}{pf(0) + (1-p)g(0)}.$$

Proof. By Lemma 1, in any PBE the incumbent uses a threshold rule and changes the status quo when q_I is sufficiently large. Hence, the only action that is potentially off the path is retaining the status quo.

Let σ be a PBE surviving D1 in which the incumbent changes the status quo for all q_I. Let $\chi \in \mathbb{R}_+$ be this arbitrary incumbent's type. Define $D(\chi)$ as the set of reelection probabilities for which type χ strictly prefers retaining the status quo over receiving her payoff under σ, and define $D_0(\chi)$ as the set of reelection probabilities for which type χ is indifferent between retaining the status quo and receiving her payoff under σ. D1 requires the voter putting probability zero on a type χ deviating if there exists another type χ' such that $D(\chi) \cup D_0(\chi) \subseteq D(\chi')$ (Cho and Kreps, 1987).

Let $\psi \in [0,1]$ be the probability the voter elects the incumbent under σ and let $\omega \in [0,1]$ be the probability the voter elects the incumbent when she deviates off the equilibrium path. Then, an incumbent of type χ will deviate off the path if

$$\frac{\chi - q_{sq} + \psi r + (\hat{x} - x_{sq})^2}{r} < \omega.$$

Note, the lower bound on the set of ω such that the incumbent deviates is weakly decreasing in χ.

There are three cases to consider. First, suppose $0 \geq q_{sq} - (\hat{x} - x_{sq})^2 + (1-\psi)r$. Then for any $\omega \in [0,1]$, an incumbent with type $\chi = 0$ will not deviate. The incumbent's utility

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on the path is increasing in q_I, hence no types deviate.

Next, suppose $0 \in [q_{sq} - (\hat{x} - x_{sq})^2 + \psi r, q_{sq} - (\hat{x} - x_{sq})^2 + (1 - \psi)r]$. Therefore,

$$\frac{-q_{sq} + \psi r + (\hat{x} - x_{sq})^2}{r} > 0.$$

Thus, an incumbent of type $\chi = 0$ deviates for some realizations of q_I. Since the incumbent's utility on the path is increasing in q_I, an incumbent of type $\chi = 0$ deviates for the largest interval of ω. By D1, the voter is required to put probability one on the deviation coming from an incumbent with type $\chi = 0$. This induces the following posterior

$$\Pr(\tau_I = \bar{\theta} | \text{deviation off path}) = \frac{pf(0)}{pf(0) + (1 - p)g(0)}.$$

Finally, suppose $q_{sq} - (\hat{x} - x_{sq})^2 + \psi r > 0$. Then there exist q_I such that

$$0 > \frac{q_I - q_{sq} + \lambda r + (\hat{x} - x_{sq})^2}{r}.$$

That is, there are types of incumbent that deviate for any ω. But this cannot be an equilibrium. ■

When $\eta < 0$, if $\underline{y}(q_{sq}, \eta) \in (-(\hat{x} - x_{sq})^2 - r, -(\hat{x} - x_{sq})^2)$, three PBEs satisfy equilibrium conditions (i.)-(iii.). The PBE that survives equilibrium condition (4) is the PBE where the incumbent changes the status quo if and only if (7) is satisfied.

When $\eta > 0$, a unique PBE satisies (i.)-(iii.) of the equilibrium conditions. Hence introducing equilibrium condition (4) does not restrict the set of equilibria further.

When $\eta = 0$, there is a unique PBE unless $0 > q_{sq} - (\hat{x} - x_{sq})^2 - r$, in which case a continuum of equilibria exist satisfy equilibrium conditions (i.)-(iii.). However, in all of these equilibria, the incumbent changes the status quo for all q_I. Hence, condition (4) does not restric the set of equilibria any further.

Existence of an equilibrium with consequential policy change follows from Propositions 12, 13, and 14. By Propositions 12, 13, and 14, the incumbent's quality threshold is always weakly smaller than $-(\hat{x} - x_{sq})^2$, which proves (a) in Proposition 1. Result (b) in Proposition 1 is implied by (a) in Proposition 1 and Lemma 1.

A.3   Proposition 3

Proof.   (a) I first prove the following lemma.

Lemma 5. $\underline{y}(q_{sq}, \eta)$ *and* $\bar{y}(q_{sq}, \eta)$ *are increasing in* η.

Proof. $y = \bar{y}(q_{sq}, \eta)$ solves

$$\frac{p(1 - F(q_{sq} + y))}{p(1 - F(q_{sq} + y)) + (1 - p)(1 - G(q_{sq} + y))} = p + \eta. \tag{11}$$

By Lemma 3, the LHS of (11) is increasing in y. Hence, if η increases, $\bar{y}(q_{sq}, \eta)$ increases to maintain equality.

Using an identical argument, the same can be shown for $\underline{y}(q_{sq}, \eta)$. ∎

Fix q_{sq}. Propositions 12, 13, and 14 imply the following:

(1) If $\eta < 0$, $D(y_\Gamma^*)$ is weakly increasing in $\underline{y}(q_{sq}, \eta)$ and is always weakly smaller than $\min\{r, q_{sq} - (\hat{x} - x_{sq}^2)\}$

(2) If $\eta = 0$, $D(y_\Gamma^*) = \min\{r, q_{sq} - (\hat{x} - x_{sq}^2)\}$

(3) If $\eta > 0$, $D(y_\Gamma^*)$ is weakly decreasing in $\underline{y}(q_{sq}, \eta)$ and is always weakly smaller than $\min\{r, q_{sq} - (\hat{x} - x_{sq}^2)\}$.

These results, combined with Lemma 5 imply that $D(y_\Gamma^*)$ is weakly increasing as η approches zero.

(b) Fix π_{sq} and η. In any equilibrium the incumbent's strategy is of the form that she changes the status quo if and only if

$$q_I \geq \max\{q_{sq} - (\hat{x} - x_{sq}) - \rho^* r, 0\},$$

where $\rho^* \in [0, 1]$. If, in equilibrium, ρ^* is not a function of r, as is the case when the voter uses a pure strategy, the quality threshold is weakly decreasing in r, and hence $D(y_\Gamma^*)$ is weakly increasing. If, in equilibrium, the incumbent uses a mixed strategy, $\rho^* = \frac{-(\hat{x} - x_{sq})^2 - \bar{y}(q_{sq}, \eta)}{r}$, and hence the incumbent's strategy simplifies to her changing the status quo if and only if

$$q_I \geq q_{sq} + \bar{y}(q_{sq}, \eta),$$

which is constant in r. Hence $D(y_\Gamma^*)$ is constant in r.

It remains to consider what happens when there is a possibility of ability signaling (i.e. the incumbent does not change the status quo for all q_I in the benchmark) and when increasing r leads the incumbent to discontinuously switch her threshold. The

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first condition requires

$$q_I - (\hat{x} - x_{sq})^2 > 0, \tag{12}$$

and Propositions 12, 13, and 14 imply the incumbent's quality threshold is only discontinuous in r when $\eta < 0$. In particular, there is a discontinuity in the incumbent's quality threshold at $\underline{y}(q_{sq],\eta}) = -(\hat{x} - x_{sq})^2$. When $\underline{y}(q_{sq}, \eta) \leq -(\hat{x} - x_{sq})^2$, $D(y_\Gamma^*) = 0$ and when $\underline{y}(q_{sq],\eta}) > -(\hat{x} - x_{sq})^2$, $D(y_\Gamma^*) = \min\{r, q_{sq} - (\hat{x} - x_{sq}^2)\}$. Hence $D(y_\Gamma^*)$ is weakly increasing for all r.

∎

A.4 Proposition 4

Proof. The voter's welfare as a function of y^* is

$$\int_0^{q_{sq}+y^*} (q_{sq} - x_{sq}^2)h(q_I)dq_I + \int_{q_{sq}+y^*}^\infty (q_I - \hat{x}^2)h(q_I)dq_I,$$

where $h(q_I) = pf(q_I) + (1-p)g(q_I)$. The first order condition is that

$$q_{sq} - x_{sq}^2 - q_{sq} - y^* + \hat{x}^2 = 0.$$

Hence, the voter's welfare is maximized when

$$y^{wf} = \begin{cases} -q_{sq} & \text{if } q_{sq} - x_{sq}^2 + \hat{x}^2 \leq 0 \\ -x_{sq}^2 + \hat{x}^2 & \text{if } q_{sq} - x_{sq}^2 + \hat{x}^2 > 0 \end{cases}$$

Moreover, the voter's welfare is increasing in y^* for $y^* < -x_{sq}^2 + \hat{x}^2$, and is decreasing in y^* for $y^* > -x_{sq}^2 + \hat{x}^2$.

In $\hat{\Gamma}$, $y^* = -(\hat{x} - x_{sq})^2$. Hence, $-(\hat{x} - x_{sq})^2 \leq y^{wf}$ by the assumption that $(x_I - xsq)^2 \geq x_{sq}^2$. By Proposition 1, in any equilibrium of Γ, $y^* \leq -(\hat{x} - x_{sq})^2$. Hence, the voter's welfare is weakly lower. ∎

A.5 Proposition 5

Proof. Fix π_{sq} and η. In any equilibrium the incumbent's strategy is of the form that she changes the status quo if and only if

$$q_I \geq \max\{q_{sq} - (\hat{x} - x_{sq}) - \rho^* r, 0\},$$

where $\rho^* \in [0, 1]$. If, in equilibrium, ρ^* is not a function of $\hat{x}$, as is the case when the voter uses a pure strategy, the quality threshold is weakly decreasing in $(\hat{x} - x_{sq})^2$, and hence the probability of policy change is weakly increasing. If, in equilibrium, the incumbent uses a mixed strategy, $\rho^* = \frac{-(\hat{x}-x_{sq})^2 - \overline{y}(q_{sq},\eta)}{r}$, and hence the incumbent's strategy simplifies to her changing the status quo if and only if

$$q_I \geq q_{sq} + \overline{y}(q_{sq}, \eta),$$

which is constant in $(\hat{x} - x_{sq})^2$.

It remains to consider what happens when there is a possibility of ability signaling and when increasing $(\hat{x} - x_{sq})^2$ leads the incumbent to discontinuously switch her threshold. The first condition requires (12). The second condition requires $\eta < 0$ as Proposition 12, 13, and 14 imply that the incumbent's quality threshold is continuous in $(\hat{x} - x_{sq})^2$ except when $\eta < 0$. In particular, there is a discontinuity in the incumbent's quality threshold at $\underline{y}(q_{sq],\eta}) = -(\hat{x} - x_{sq})^2$. When $\underline{y}(q_{sq],\eta}) \leq -(\hat{x} - x_{sq})^2$, the probability of policy change is

$$p(1 - F(q_{sq} - (\hat{x} - x_{sq})^2)) + (1 - p)(1 - G(q_{sq} - (\hat{x} - x_{sq})^2)), \tag{13}$$

and when $\underline{y}(q_{sq}, \eta) > -(\hat{x} - x_{sq})^2$, the probability of policy change is

$$\min\{p(1 - F(q_{sq} - (\hat{x} - x_{sq})^2 - r)) + (1 - p)(1 - G(q_{sq} - (\hat{x} - x_{sq})^2 - r)), 1\}. \tag{14}$$

(13) $<$ (14) for any $\hat{x}$, and hence the probability of policy change is weakly increasing in $(\hat{x} - x_{sq})^2$. $\blacksquare$

A.6 Proposition 6

Outline of the proof: I begin by proving Lemma 6, which I use to provide a characterization of all PBE of the game described in Section 5 under the assumption that off the equilibrium path the voter believes the incumbent has high ability with probability μ. This is done in Propositions 17, 18, and 16. By the same argument used in Section A.2, μ is the belief the

voter holds in any equilibrium surviving D1. I then prove Proposition 6.

If the incumbent changes the status quo and the voter observes q_I,

$$\Pr(\tau_I = \bar{\theta}|q_I) = \frac{1}{1 + \frac{1-p}{p}\frac{g(q_I)}{f(q_I)}}.$$

This is increasing in q_I by the definition of strict MLRP. Therefore, if

$$p + \eta \in [\underline{L}, \overline{L}), \tag{15}$$

there exists a $\hat{q}_I$ such that $\frac{1}{1 + \frac{1-p}{p}\frac{g(\hat{q}_I)}{f(\hat{q}_I)}} = p + \eta$. (15) is satisfied if

$$\eta \in [\underline{\eta}, \overline{\eta}).$$

By Assumption 1, $\eta \in (\underline{\eta}, \overline{\eta})$. Hence $\hat{q}_I$ always exists. Define $\hat{y}(\eta) \equiv \hat{q}_I - q_{sq}$.

Lemma 6. (a) $\overline{y}(q_{sq}, \eta) < \hat{y}(\eta)$

 (b) $\underline{y}(q_{sq}, \eta) > \hat{y}(\eta)$

Proof. (a) Suppose not. then $\overline{y}(q_{sq}, \eta) \geq \hat{y}(\eta)$. By the definitions of $\overline{y}(q_{sq}, \eta)$ and $\hat{y}(\eta)$,

$$\frac{p(1 - F(q_{sq} + \overline{y}(q_{sq}, \eta)))}{p(1 - F(q_{sq} + \overline{y}(q_{sq}, \eta))) + (1-p)(1 - G(q_{sq} + \overline{y}(q_{sq}, \eta)))}$$
$$= \frac{pf(q_{sq} + \hat{y}(\eta))}{pf(q_{sq} + \hat{y}(\eta)) + (1-p)g(q_{sq} + \hat{y}(\eta))}.$$

Hence,

$$\frac{f(q_{sq} + \hat{y}(\eta))}{g(q_{sq} + \hat{y}(\eta))} = \frac{1 - F(q_{sq} + \overline{y}(q_{sq}, \eta))}{1 - G(q_{sq} + \overline{y}(q_{sq}, \eta))}$$

By strict MLRP and since $q_{sq} + \hat{y}(\eta) \leq q_{sq} + \overline{y}(q_{sq}, \eta)$

$$\frac{f(q_{sq} + \hat{y}(\eta))}{g(q_{sq} + \hat{y}(\eta))} \leq \frac{f(q_{sq} + \overline{y}(q_{sq}, \eta))}{g(q_{sq} + \overline{y}(q_{sq}, \eta))}$$
$$\implies \frac{f(q_{sq} + \overline{y}(q_{sq}, \eta))}{g(q_{sq} + \overline{y}(q_{sq}, \eta))} \geq \frac{1 - F(q_{sq} + \overline{y}(q_{sq}, \eta))}{1 - G(q_{sq} + \overline{y}(q_{sq}, \eta))}$$
$$\Leftrightarrow \frac{f(q_{sq} + \overline{y}(q_{sq}, \eta))}{1 - F(q_{sq} + \overline{y}(q_{sq}, \eta))} \geq \frac{g(q_{sq} + \overline{y}(q_{sq}, \eta))}{1 - G(q_{sq} + \overline{y}(q_{sq}, \eta))},$$

where the last line is a contradiction due to the monotone hazard rate property of MLRP.

(b) Suppose not. Then $\underline{y}(q_{sq}, \eta) \leq \hat{y}(\eta)$. By the definitions of $\underline{y}(q_{sq}, \eta)$ and $\hat{y}(\eta)$, it must be that

$$\frac{F(q_{sq} + \underline{y}(q_{sq}, \eta))}{G(q_{sq} + \underline{y}(q_{sq}, \eta))} = \frac{f(q_{sq} + \hat{y}(\eta))}{g(q_{sq} + \hat{y}(\eta))}$$

By strict MLRP and since $q_{sq} + \hat{y}(\eta) \geq q_{sq} + \underline{y}(q_{sq}, \eta)$

$$\frac{f(q_{sq} + \hat{y}(\eta))}{g(q_{sq} + \hat{y}(\eta))} \geq \frac{f(q_{sq} + \underline{y}(q_{sq}, \eta))}{g(q_{sq} + \underline{y}(q_{sq}, \eta))}$$
$$\implies \frac{F(q_{sq} + \underline{y}(q_{sq}, \eta))}{G(q_{sq} + \underline{y}(q_{sq}, \eta))} \geq \frac{f(q_{sq} + \underline{y}(q_{sq}, \eta))}{g(q_{sq} + \underline{y}(q_{sq}, \eta))}$$

where the last line is a contradiction due to the well known property of strict MLRP that

$$\frac{f(x)}{g(x)} > \frac{F(x)}{G(x)}.$$

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Proposition 16. *Fix π_{sq} and $\eta < 0$.*

(a) *If $-(\hat{x} - x_{sq})^2 \leq (1 - s)r - q_{sq}$, there is a unique PBE where the incumbent changes the status quo for all q_I, and is reelected if q_I is not revealed or if q_I is revealed and $q_I \geq \hat{q}_I$.*

(b) *If $-(\hat{x} - x_{sq})^2 \in ((1 - s)r - q_{sq}, \hat{y}(\eta) + (1 - s)r)$, there is a PBE where the incumbent changes the status quo if and only if (19) is satisfied, and is reelected if she changes the status quo and q_I is not revealed or if $q_I \geq \hat{q}_I$.*

(c) *$-(\hat{x} - x_{sq})^2 \in [\hat{y}(\eta) + (1 - s)r, \hat{y}(\eta) + r]$, there is a PBE where the incumbent changes the status quo if and only if (18) is satisfied, and is reelected if she changes the status quo.*

(d) *If $-(\hat{x} - x_{sq})^2 \in (\hat{y}(\eta) + r, \underline{y}(q_{sq}, \eta) + r)$, there is a PBE where the incumbent changes the status quo if and only if (6) is satisfied, and is reelected if she changes the status quo.*

(e) *If $-(\hat{x} - x_{sq})^2 \in [\underline{y}(q_{sq}, \eta), \underline{y}(q_{sq}, \eta) + r]$, there is a PBE where the incumbent changes the status quo if and only if (17) is satisfied, and is reelected with probability $\rho^* \in [0, 1]$ if she retains the status quo and with probability one if she changes the status quo.*

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(f) If $-(\hat{x} - x_{sq})^2 > \underline{y}(q_{sq}, \eta)$, *there is a PBE where the incumbent changes the status quo if and only if (7) is satisfied, and is always reelected.*

Proof. Fix π_{sq} and $\eta < 0$, and suppose that off the equilibrium path the voter believes the incumbent has high ability with probability μ. Since $\eta < 0$, Lemma 4 implies that in any PBE the incumbent is reelected if she changes the status quo and q_I is not revealed. Moreover, the probability that the incumbent is reelected if she changes the status quo and q_I is revealed is weakly increasing in q_I. Thus, in equilibrium, the incumbent's expected utility from changing the status quo is increasing in q_I. Hence, the incumbent uses a threshold strategy.

Consider first an equilibrium where the incumbent changes the status quo for all q_I. Since she leads, she is reelected on the equilibrium path if q_I is not revealed and if q_I is revealed and is sufficiently high. But,

$$\frac{1}{1 + \frac{1-p}{p}\frac{g(0)}{f(0)}} < p + \eta$$

for all η satisfying Assumption 1. Hence, there are some realizations of q_I such that the incumbent is not reelected if she changes the status quo and q_I is revealed.

Since the incumbent changes the status quo for all q_I, retaining the status quo is off the path. If she deviates, she is not reelected since $\mu < p + \eta$ for all η satisfying Assumption 1. Hence, this PBE exists as long as

$$0 \geq q_{sq} - (\hat{x} - x_{sq})^2 - (1 - s)r. \tag{16}$$

This shows (a)

For the remainder of the proof assume the incumbent retains and changes the status quo on the equilibrium path. In any such PBE, (5) must be satisfied.

Suppose there is PBE $y^* > \underline{y}(q_{sq}, \eta) \implies y^* > \hat{y}(\eta)$. In this case, the incumbent is reelected whether she changes the status quo or not. Hence, in this PBE, the incumbent changes the status quo if and only if (7) is satisfied. This PBE exists if

$$\underline{y}(q_{sq}, \eta) < -(\hat{x} - x_{sq})^2$$
$$\hat{y}(\eta) < -(\hat{x} - x_s)^2$$

and (5) is satisfied. The first condition ensures the $y^* > \underline{y}(q_{sq}, \eta)$, the second condition ensures the incumbent is always reelected when she changes the status quo and q_I is revealed, and the third condition ensures she retains on the equilibrium path. The first condition

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implies the second and third, which shows (f).

Now suppose there is a PBE where $y^* = \underline{y}(q_{sq}, \eta) \implies y^* > \hat{y}(\eta)$. In this PBE, the voter is indifferent between the incumbent and challenger when the incumbent retains the status quo, and hence reelects the incumbent with probability $\rho \in [0, 1]$. Given a $\rho^* \in [0, 1]$, the incumbent changes the status quo if and only if

$$q_I \geq q_{sq} - (\hat{x} - x_{sq})^2 + (\rho^* - 1)r. \tag{17}$$

For the voter to be willing to randomize, it must be that

$$\rho^* = \frac{\underline{y}(q_{sq}, \eta) + (\hat{x} - x_{sq})^2 + r}{r}.$$

For this PBE to exist, it must be that

$$\underline{y}(q_{sq}, \eta) \in [-(\hat{x} - x_{sq})^2 - r, -(\hat{x} - x_{sq})^2]$$
$$\hat{y}(\eta) < -(\hat{x} - x_s)^2,$$

and (5) is satisfied. The first condition ensures $\rho^* \in [0, 1]$, the second ensures the incumbent is reelected when she changes the status quo even if q_I is revealed, and the third ensures she retains on the equilibrium path. The first condition implies the second condition, as shown above, and implies the third, which can be shown by substituting ρ^* into the incumbent's quality threshold and using the definition of $\underline{y}(q_{sq}, \eta)$. This shows (e).

In any remaining equilibria, $y^* < \overline{y}(q_{sq}, \eta)$, which implies the incumbent is not reelected when she retains the status quo. Therefore, assume $y^* < \overline{y}(q_{sq}, \eta)$ for the remainder.

First suppose $y^* > \hat{y}(\eta)$, in which case the incumbent is reelected if she changes the status quo, regardless of whether q_I is revealed, but is not reelected if she retains. In this PBE, the incumbent will change the status quo if (6) is satisfied. For this to be a PBE it must be that

$$\underline{y}(q_{sq}, \eta) > -(\hat{x} - x_{sq})^2 - r$$
$$-(\hat{x} - x_{sq})^2 - r > \hat{y}(\eta),$$

and (5) is satisfied. The first condition ensures the incumbent is not reelected if she retains, the second condition ensures she is reelected when she changes the status quo even if q_I is revealed, and the third ensures she retains on the equilibrium path. The second condition implies the third. This shows (d)

Now suppose $y^* = \hat{y}(\eta)$, in which case the incumbent is reelected if she changes the status

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quo, regardless of whether q_I is revealed, but is not reelected if she retains. Using the fact that $\hat{y}(\eta) = \hat{q}_I - q_{sq}$ implies that in this PBE, the incumbent changes the status quo if and only if

$$q_I \geq \hat{q}_I. \tag{18}$$

For this to be an equilibrium it must be that

$$\overline{y}(q_{sq}, \eta) > -(\hat{x} - x_{sq})^2 - r$$
$$\hat{q}_I + (1-s)r \leq q_I - (\hat{x} - x_{sq})^2$$
$$\hat{q}_I + r \geq q_I - (\hat{x} - x_{sq})^2$$

and (5) is satisfied. The first condition ensures the incumbent is not reelected if she retains the status quo, the second ensures the incumbent does not have a profitable deviation to changing the status quo when $q_I < \hat{q}_I$, the third condition ensures the incumbent does not have a profitable deviation to retaining the status quo if $q_I \geq \hat{q}_I$, and the fourth condition ensures the incumbent retains on the equilibrium path. The fourth condition holds by Assumption 1. Combining the first and second conditions implies the first. This shows (c).

Finally, suppose there is a PBE where $y^* < \hat{y}(\eta)$. Then in this PBE, the incumbent reelected with probability one if she changes the status and q_I is not revealed, but there are values of q_I such that if q_I is revealed the incumbent is not reelected. Then the incumbent who is indifferent between retaining and changing observes q_I such that $q_I = q_{sq} - (\hat{x} - x_{sq})^2 - (1-s)r$. Hence, the incumbent changes the status quo if and only

$$q_I \geq q_{sq} - (\hat{x} - x_{sq})^2 - (1-s)r. \tag{19}$$

For this PBE to exist it must be that

$$\hat{y}(\eta) > -(\hat{x} - x_{sq})^2 - (1-s)r$$

and (5) is satisfied. The first condition ensures $y^* < \hat{y}(\eta)$ and the second ensures the incumbent retains the on the equilibrium path. Combining them shows (b). ∎

Proposition 17. *Fix π_{sq} and $\eta > 0$.*

(a) *If $-(\hat{x} - x_{sq})^2 \leq r - q_{sq}$, there is a unique PBE where the incumbent changes the status quo for all q_I, and is reelected if q_I is revealed and $q_I \geq \hat{q}_I$.*

(b) *If $-(\hat{x} - x_{sq})^2 \in (r - q_{sq}, \overline{y}(q_{sq}, \eta))$, there is a unique PBE where the incumbent changes*

the status quo if and only if (7) is satisfied, and is reelected if q_I is revealed and $q_I \geq \hat{q}_I$.

(c) *If $-(\hat{x}-x_{sq})^2 \in [\overline{y}(q_{sq},\eta), \overline{y}(q_{sq},\eta)+(1-s)r]$, there is a unique PBE where the incumbent changes the status quo if and only if (20) is satisfied, and is reelected with probability $\rho^* \in [0,1]$ if she changes the status quo and q_I is not revealed or if q_I is revealed and $q_I \geq \hat{q}_I$.*

(d) *If $-(\hat{x}-x_{sq})^2 \in (\overline{y}(q_{sq},\eta)+(1-s)r, \hat{y}(\eta)+(1-s)r)$, there is a unique PBE where the incumbent changes the status quo if and only if (19), and is reelected if she changes the status quo and q_I is not revealed or if q_I is revealed and $q_I \geq \hat{q}_I$.*

(e) *If $-(\hat{x}-x_{sq})^2 \in [\hat{y}(\eta)+(1-s)r, \hat{y}(\eta)+r]$, there is a unique PBE where the incumbent changes the status quo if and only if (18) is satisfied, and is reelected if she changes the status quo.*

(f) *If $-(\hat{x}-x_{sq})^2 > \hat{y}(\eta)+r$, there is a unique PBE where the incumbent changes the status quo if and only if (6) is satisfied, and is reelected if she changes the status quo.*

Proof. Fix q_{sq} and $\eta > 0$, and suppose that off the equilibrium path the voter believes the incumbent has high ability with probability μ. By the same argument in the proof of Proposition 16, the incumbent uses a threshold strategy. Hence, Lemma 4 implies the incumbent is never reelected if she retains the status quo.

Suppose there is a PBE where the incumbent changes the status quo for all q_I. Then on the equilibrium path the incumbent is not reelected if q_I is not revealed because $p < p+\eta$ for $\eta > 0$. Moreover, off the path, the incumbent is not reelected since $\mu < p + \eta$ for all $\eta > 0$. Hence, this PBE exists if (4) is satisfied, and in this PBE the incumbent is only reelected if q_I is revealed and $q_I \geq \hat{q}_I$. This shows (a).

For the remainder of the proof suppose the incumbent retains the status quo on the equilibrium path.

Suppose first that in a PBE $y^* > \hat{y}(\eta) \implies y^* > \overline{y}(q_{sq},\eta)$. Then the incumbent is reelected when she changes the status quo regardless of whether q_I is revealed. Then the incumbent changes the status quo if and only if (6) is satisfied. For this PBE to exist, it must be that

$$-(\hat{x}-x_{sq})^2 - r > \hat{y}(\eta)$$
$$-(\hat{x}-x_{sq})^2 - r > \overline{y}(q_{sq},\eta),$$

and (5) is satisfied. The first two conditions ensures that $y^* > \hat{y}(\eta)$ and $y^* > \overline{y}(q_{sq},\eta)$. The third ensures the incumbent retains on the equilibrium path. The first implies the second

and third which shows (f).

Next suppose $y^* = \hat{y}(\eta) \implies y^* > \overline{y}(q_{sq}, \eta)$. By the definition of $\hat{y}$, in this PBE, the incumbent must changes the status quo if and only if (18) is satisfied. For this to be an equilibrium, it must be that

$$-(\hat{x} - x_{sq})^2 - r > \overline{y}(q_{sq}, \eta)$$
$$\hat{q}_I + r \geq q_{sq} - (\hat{x} - x_{sq})^2$$
$$\hat{q}_I + (1-s)r \leq q_{sq} - (\hat{x} - x_{sq})^2$$

and (5) is satisfied. The first condition ensures that $y^* > \overline{y}(q_{sq}, \eta)$. The second and third ensure that the incumbent does not have a profitable deviation, and the fourth ensures the incumbent retains on the equilibrium path. That $y^* = \hat{y}(\eta)$ implies the first and fourth conditions. Combining the second and third shows (e).

Next suppose $y^* \in (\overline{y}(q_{sq}, \eta), \hat{y}(\eta))$. Then the incumbent is reelected if she changes the status quo and q_I is not revealed, but there are some realizations of q_I such that the incumbent changes the status quo and is not reelected if q_I is revealed. In this PBE, the incumbent changes the status quo if and only if (19) is satisfied. For this PBE to exist it must be that

$$\hat{y}(\eta) > -(\hat{x} - x_{sq})^2 - (1-s)r$$
$$\overline{y}(q_{sq}, \eta) < -(\hat{x} - x_{sq})^2 - (1-s)r$$

and (5) is satisfied. The first two conditions ensure $y^* \in (\overline{y}(q_{sq}, \eta), \hat{y}(\eta))$. The third ensures the incumbent retains on the equilibrium path. The second implies the third. This shows (d).

Suppose $y^* = \overline{y}(q_{sq}, \eta) \implies y^* < \hat{y}(\eta)$. In this case the voter is indifferent between the challenger and the incumbent when the incumbent changes the status quo and q_I is not revealed, and hence reelects the incumbent with probability $\rho \in [0, 1]$ if q_I is not revealed. Given ρ^*, the incumbent changes the status quo if and only if

$$q_I \geq q_{sq} - (\hat{x} - x_{sq})^2 - (1-s)\rho^* r. \tag{20}$$

For the voter to be indifferent, it must be that

$$\Leftrightarrow \rho^* = \frac{-(\hat{x} - x_{sq})^2 - \overline{y}(q_{sq}, \eta)}{(1-s)r}.$$

This PBE exists if

$$\hat{y}(\eta) > -(\hat{x} - x_{sq})^2 - (1 - s)r$$

$$\overline{y}(q_{sq}, \eta) \in [-(\hat{x} - x_{sq})^2 - (1 - s)r, -(\hat{x} - x_{sq})^2]$$

and (5) is satisfied. The first condition ensures $y^* < \hat{y}(\eta)$, the second ensures $\rho^* \in [0, 1]$, and the third ensures the incumbent retains on the equilibrium path. The first and third conditions are implied by the condition that $y^* = \overline{y}(q_{sq}, \eta)$. This shows (c).

Finally, suppose $y^* < \overline{y}(q_{sq}, \eta) \implies y^* < \hat{y}(\eta))$. Then the incumbent is not reelected unless she changes the status quo, q_I is revealed, and $q_I \geq \hat{q}_I$. Then, the incumbent changes the status quo if and only if (7) is satisfied. For this PBE to exist, it must be that

$$\overline{y}(q_{sq}, \eta) > -(\hat{x} - x_{sq})^2$$

and (5) is satisfied. The first condition ensures $y^* < \overline{y}(q_{sq}, \eta)$ and the second ensures the incumbent retains on the equilibrium path. This shows (b). ∎

Proposition 18. *Fix π_{sq} and $\eta = 0$.*

(a) *If $-(\hat{x} - x_{sq})^2 \leq (1 - s)r - q_{sq}$, there is a PBE where the incumbent changes the status quo for all q_I, and is reelected with probability $\rho^* \in [0, 1]$ if q_I is not revealed and with probability one if q_I is revealed and $q_I \geq \hat{q}_I$.*

(b) *If $-(\hat{x} - x_{sq})^2 \in ((1 - s)r - q_{sq}+, \hat{y}(\eta) + (1 - s)r)$, there is a unique PBE where the incumbent changes the status quo if and only if (19) is satisfied, and is reelected if q_I is not revealed or if q_I is revealed and $q_I \geq \hat{q}_I$.*

(c) *If $-(\hat{x} - x_{sq})^2 \in [\hat{y}(\eta) + (1 - s)r, \hat{y}(\eta) + r]$, there is a unique PBE where the incumbent changes the status quo if and only if (18) is satisfied, and is reelected if she changes the status quo.*

(d) *If $-(\hat{x} - x_{sq})^2 > \hat{y}(\eta) + r$, there is a unique PBE where the incumbent changes the status quo if and only if (6) is satisfied, and is reelected if she changes the status quo.*

Proof. Fix q_{sq} and $\eta = 0$, and suppose that off the equilibrium path the voter believes the incumbent has high ability with probability μ.

Suppose there is a PBE where the incumbent changes the status quo for all q_I. On the path, the incumbent is reelected with probability $\rho \in [0, 1]$, and off the path she is not

reelected because $\mu < p$. For a given ρ, this PBE exists if

$$0 \geq q_{sq} - (\hat{x} - x_{sq})^2 - (1 - s)\rho r. \tag{21}$$

Hence, if

$$0 \geq q_{sq} - (\hat{x} - x_{sq})^2 - (1 - s)r. \tag{22}$$

this PBE exists. This shows (a)

For the remainder of the proof suppose the incumbent retains the status quo on the equilibrium path. Hence, the incumbent is reelected when they change the status quo and q_I is not revealed.

Consider first a PBE where $y^* > \hat{y}(\eta)$. Then, the incumbent is reelected with probability one when she changes the status quo. In such an PBE, the incumbent will change the status quo if and only if (6) is satisfied. This PBE exists if

$$\hat{y}(\eta) < -(\hat{x} - x_{sq})^2 - r$$

and (5) is satisfied. The first condition ensures the incumbent is reelected even if q_I is revealed and the second ensures she retains on the equilibrium path. The first condition implies the second. This shows (d)

Next, consider a PBE where $y^* = \hat{y}(\eta)$. Then, by the definition of $\hat{y}$, the incumbent changes the status quo if and only if (18) is satisfied. This PBE exists if

$$\hat{q}_I + r \geq q_{sq} - (\hat{x} - x_{sq})^2$$
$$\hat{q}_I + (1 - s)r \leq q_{sq} - (\hat{x} - x_{sq})^2$$

and (5) is satisfied. The first two conditions ensure the incumbent does not have a profitable deviation, and the third ensures she retains on the equilibrium path. That $y^* = \hat{y}$ implies the third condition. This shows (c).

Finally, consider a PBE where $y^* < \hat{y}(\eta)$. Then, the incumbent is reelected if she changes the status quo and q_I is not revealed but is not reelected for some q_I that she changes the status quo for if q_I is revealed. Then, the incumbent changes the status quo if and only if (19) is satisfied. This is a PBE if

$$(\hat{x} - x_{sq})^2 - (1 - s)r < \hat{y}(\eta)$$

and (5) is satisfied. The first condition ensures $y^* < \hat{y}(\eta)$ and the second condition ensures

the incumbent retains on the equilibrium path. This shows (b). ■

Let Γ^O denote the game described in Section 5. Propositions 16, 17, and 18 imply that in any PBE the incumbent uses a threshold strategy. Then, an identical argument to the one used in Proposition 15 shows that in any PBE surviving D1, the voter must believe the incumbent is high ability with probability μ if she deviates to retaining, which is the only action that is ever off the path.

When $\eta < 0$ and $-(\hat{x} - x_{sq})^2 \in (\underline{y}(q_{sq}, \eta), \underline{y}(q_{sq}, \eta) + r)$, multiple PBE exist satisfying equilibrium conditions (i.)-(iii.). The PBE that survives equilibrium condition (4) is the one where the incumbent changes the status quo if and only if (7) is satisfied. Otherwise, the equilibrium is unique.

Fix π_{sq} and $\eta < 0$. Proposition 16 implies the incumbents quality threshold is continuous in s. Moreover, Proposition 16 implies the incumbent's quality threshold is weakly decreasing in s. Hence, $D(y^*_{\Gamma^O})$ is weakly decreasing in s.

When $\eta > 0$, there is always a unique PBE satisfying (i.)-(iii.) and hence, this equilibrium survives (4). Fix π_{sq} and $\eta < 0$. Proposition 17. Proposition 17 implies the incumbents quality threshold is continuous in s and that the incumbent's quality threshold is weakly decreasing in s. Hence, $D(y^*_{\Gamma^O})$ is weakly decreasing in s.

When $\eta = 0$, there is a unique PBE surviving (i.)-(iii.) except when $0 > q_{sq} - (\hat{x} - x_{sq})^2 - (1 - s)\rho r$, in which case there are a continuum of equilibria where the incumbent changes the status quo for all q_I. However, in all of these PBEs the incumbent changes the status quo with probability one, and hence (4) does not restric the set of equilibria further.

Fix π_{sq} and $\eta = 0$. Proposition 18. Proposition 18 implies the incumbents quality threshold is continuous in s and that the incumbent's quality threshold is weakly decreasing in s. Hence, $D(y^*_{\Gamma^O})$ is weakly decreasing in s.

It is trivial to see that when $s = 1$, there are examples $D(y^*_{\Gamma^O}) > 0$. For example, suppose $-(\hat{x} - x_{sq})^2 > \hat{\eta} + r$. When $s = 1$, the incumbent changes the status quo if and only if (6) is satisfied. Hence $D(y^*_{\Gamma^O}) = r > 0$

A.7 Proposition 7

Proof. Suppose $-(\hat{x} - x_{sq})^2 > r - q_{sq} \implies -(\hat{x} - x_{sq})^2 > (1 - s)r - q_{sq}$.

Fix π_{sq} and $\eta < 0$. If $-(\hat{x} - x_{sq})^2 > \hat{y}(\eta) + r$, the incumbent's expected utility is constant in s. Suppose $-(\hat{x} - x_{sq})^2 \leq \hat{y}(\eta) + r$. Then depending on the parameters, the equilibrium is described by (a), (b) or (c) in Proposition 16. Proposition 16 implies that when $-(\hat{x} - x_{sq})^2 \leq \hat{y}(\eta) + r$, the incumbent's expected utility is continuous in s. Hence, it is sufficient to show that the incumbent's expected utility is weakly decreasing in s for (b)

and (c) since (a) is ruled out by the assumption that $-(\hat{x} - x_{sq})^2 > r - q_{sq}$. If (b) describes the equilibrium, the incumbent's expected utility is

$$\int_0^{q_{sq}-(\hat{x}-x_{sq})^2-(1-s)r} (q_{sq} - (\hat{x} - x_{sq})^2)h(q_I)dq_I$$

$$+ \int_{q_{sq}-(\hat{x}-x_{sq})^2-(1-s)r}^{\hat{q}_I} (q_I + (1-s)r)h(q_I)dq_I$$

$$+ \int_{\hat{q}_I}^{\infty} (q_I + r)h(q_I)dq_I, \quad (23)$$

where $h(q_I) = pf(q_I) + (1-p)g(q_I)$. Differentiating,

$$\frac{\partial(23)}{\partial s} = -\int_{q_{sq}-(\hat{x}-x_{sq})^2-(1-s)r}^{\hat{q}_I(\eta)} rh(q_I)dq_I < 0.$$

Hence, the incumbent's expected utility is decreasing in s. If (c) describes the equilibrium, the incumbent's expected utility is constant in s.

Fix π_{sq} and $\eta > 0$. An equilibrium described by (a) in Proposition 17 is ruled out by the assumption that $-(\hat{x} - x_{sq})^2 > r - q_{sq}$.

If $-(\hat{x} - x_{sq})^2 \in (r - q_{sq}, \overline{y}(q_{sq}, \eta))$, then it is for all s. The incumbent's expected utility is

$$\int_0^{q_{sq}-(\hat{x}-x_{sq})^2} (q_{sq} - (\hat{x} - x_{sq})^2)h(q_I) + \int_{q_{sq}-(\hat{x}-x_{sq})^2}^{\hat{q}_I} (q_I)h(q_I)dq_I + \int_{\hat{q}_I}^{\infty} (q_I + sr)h(q_I)dq_I.$$

$$(24)$$

Differentiating,

$$\frac{\partial 24}{\partial s} = \int_{\hat{q}_I}^{\infty} rh(q_I)dq_I > 0.$$

Hence, the incumbent's expected utility is increasing in s.

If $-(\hat{x} - x_{sq})^2 \in [\overline{y}(q_{sq}, \eta), \overline{y}(q_{sq}, \eta) + (1-s)r]$, the incumbent's expected utility is

$$\int_0^{q_{sq}+\overline{y}(q_{sq},\eta)} (q_{sq} - (\hat{x} - x_{sq})^2)h(q_I) + \int_{q_{sq}+\overline{y}(q_{sq},\eta)}^{\hat{q}_I} (q_I - (\hat{x} - x_{sq})^2 - \overline{y}(q_{sq}, \eta))h(q_I)dq_I$$

$$+ \int_{\hat{q}_I}^{\infty} (q_I - (\hat{x} - x_{sq})^2 - \overline{y}(q_{sq}, \eta) + sr)h(q_I)dq_I. \quad (25)$$

Differentiating,

$$\frac{\partial 25}{\partial s} = \int_{\hat{q}_I}^{\infty} rh(q_I)dq_I > 0.$$

Hence, the incumbent's expected utility is increasing in s. If $-(\hat{x} - x_{sq})^2 = \overline{y}(q_{sq}, \eta)$, $-(\hat{x} - x_{sq})^2 \in [\overline{y}(q_{sq}, \eta), \overline{y}(q_{sq}, \eta) + (1 - s)r]$ for all s. Otherwise, there is an s sufficiently large that $-(\hat{x} - x_{sq})^2 \in (\overline{y}(q_{sq}, \eta) + (1 - s)r, \hat{y} + (1 - s)r)$, in which case the incumbent's expected utility is equivalent to (23). Hence, the incumbent's expected utility is decreasing in s. Note, Proposition 17 implies that if $-(\hat{x} - x_{sq})^2 \in (\overline{y}(q_{sq}, \eta), \overline{y}(q_{sq}, \eta) + (1 - s)r)$, the incumbent's expected utility is continuous in s. Hence, her utility is not monotone.

Finally, if $-(\hat{x} - x_{sq})^2 \geq \hat{y}(\eta) + (1 - s)r$, the incumbent's expected utility is constant in s.

Suppose lastly that $\eta = 0$. An equilibrium described by (a) in 18 is ruled out by the assumption that $-(\hat{x} - x_{sq})^2 > r - q_{sq}$. If $-(\hat{x} - x_{sq})^2 > \hat{y}(\eta) + r$, the incumbent's expected utility is constant in s. It remains to consider when $-(\hat{x} - x_{sq})^2 \in (\max\{r - q_{sq}, \hat{y}(\eta) + (1 - s)r\}, \hat{y}(\eta) + r)$. Proposition 18 implies that the incumbent's expected utility is continuous in r for all s. If $-(\hat{x} - x_{sq})^2 \in (r - q_{sq}, \hat{y}(\eta) + (1 - s)r)$, the incumbent's expected utility is equivalent to (23). Hence, it is decreasing in s. And if $-(\hat{x} - x_{sq})^2 \in [\hat{y}(\eta) + (1 - s)r, \hat{y}(\eta) + r]$, her expected utility is constant in s. ∎

A.8   Proposition 8

Proof. Fix q_{sq} and $\eta < 0$, and suppose $-(\hat{x} - x_{sq})^2 \in (r - q_{sq}, \underline{y}(q_{sq}, \eta))$. Hence, in the unique equilibrium of Γ, the incumbent revises and retains on the equilibrium path and is not reelected if she retains the status quo.

Suppose the incumbent chooses $x_I = \underline{x}^* \neq \hat{x}$. There are four cases to consider. First, suppose she chooses $\underline{x}^*$ sufficiently close to $\hat{x}$ that

$$-(\hat{x} - x_{sq})^2 + (\hat{x} - \underline{x}^*)^2 < \underline{y}(q_{sq}, \eta). \tag{26}$$

Then she is only reelected if she changes the status quo. Hence, her expected utility is

$$\int_0^{q_{sq} - (\hat{x} - x_{sq})^2 + (\hat{x} - \underline{x}^*)^2 - r} (q_{sq} - (\hat{x} - x_{sq})^2)h(q_I)dq_I$$
$$+ \int_{q_{sq} - (\hat{x} - x_{sq})^2 + (\hat{x} - \underline{x}^*)^2 - r}^{\infty} (q_I - (\hat{x} - \underline{x}^*)^2 + r)h(q_I)dq_I. \tag{27}$$

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Differentiating,

$$\frac{\partial(27)}{\partial \underline{x}^*} = \int_{q_{sq}-(\hat{x}-x_{sq})^2+(\hat{x}-\underline{x}^*)^2}^{\infty} 2(\hat{x}-\underline{x}^*)h(q_I)dq_I.$$

The derivative is negative when $\hat{x} < \underline{x}^*$, is positive when $\hat{x} > \underline{x}^*$, and equals zero when $\underline{x}^* = \hat{x}$. Hence, the incumbent has a profitable deviation from $\underline{x}^*$ by moving $\underline{x}$ closer to $\hat{x}$, which she can do for any $\underline{x}^*$ satisfying (26).

Second, suppose that in equilibrium, $\underline{x}^*$ is chosen to be sufficiently far from $\hat{x}$ that

$$-(\hat{x}-x_{sq})^2 + (\hat{x}-\underline{x}^*)^2 > \underline{y}(q_{sq},\eta). \tag{28}$$

Then she is reelected whether she changes the status quo or not. Hence, her expected utility is

$$\int_0^{q_{sq}-(\hat{x}-x_{sq})^2+(\hat{x}-\underline{x}^*)^2} (q_{sq}-(\hat{x}-x_{sq})^2+r)h(q_I)dq_I$$

$$+ \int_{q_{sq}-(\hat{x}-x_{sq})^2+(\hat{x}-\underline{x}^*)^2}^{\infty} (q_I-(\hat{x}-\underline{x}^*)^2+r)h(q_I)dq_I. \tag{29}$$

Differentiating,

$$\frac{\partial(29)}{\partial \underline{x}^*} = \int_{q_{sq}-(\hat{x}-x_{sq})^2+(\hat{x}-\underline{x}^*)^2}^{\infty} 2(\hat{x}-\underline{x}^*)h(q_I)dq_I.$$

The derivative is negative when $\hat{x} < \underline{x}^*$, is positive when $\hat{x} > \underline{x}^*$, and equals zero when $\underline{x}^* = \hat{x}$. Hence, the incumbent has a profitable deviation from $\underline{x}^*$ by moving $\underline{x}$ closer to $\hat{x}$, which can be done for any satisfying $\underline{x}^*$ satisfying (28).

Third, suppose that in equilibrium, if indifferent, the voter reelects the incumbent with probability $\rho^* < 1$, and that $\underline{x}^*$ is chosen such that

$$-(\hat{x}-x_{sq})^2 + (\hat{x}-\underline{x}^*)^2 + (\rho^*-1)r = \underline{y}(q_{sq},\eta).$$

That is, $\underline{x}^* = \hat{x} \pm \sqrt{\underline{y}(q_{sq},\eta) + (\hat{x}-x_{sq})^2 - (\rho^*-1)r}$. Then, the incumbent's expected utility is

$$\int_0^{q_{sq}+\underline{y}(q_{sq},\eta)} (q_{sq}-(\hat{x}-x_{sq})^2+\rho^* r)h(q_I)dq_I + \int_{q_{sq}+\underline{y}(q_{sq},\eta)}^{\infty} (q_I-(\hat{x}-\underline{x}^*)^2+r)h(q_I)dq_I. \tag{30}$$

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Suppose the incumbent deviates to $\underline{x}$ sufficiently far from $\hat{x}$ that

$$-(\hat{x} - x_{sq})^2 + (\hat{x} - \underline{x})^2 + (\rho^* - 1) > \underline{y}(q_{sq}, \eta).$$

Then either $\hat{x} < \underline{x}^* < \underline{x}$ or $\hat{x} > \underline{x}^* > \underline{x}$, and the incumbent's expected utility is

$$\int_0^{q_{sq} - (\hat{x} - x_{sq})^2 + (\hat{x} - \underline{x})^2} (q_{sq} - (\hat{x} - x_{sq})^2 + r)h(q_I)dq_I$$

$$+ \int_{q_{sq} - (\hat{x} - x_{sq})^2 + (\hat{x} - \underline{x})^2}^{\infty} (q_I - (\hat{x} - \underline{x})^2 + r)h(q_I)dq_I. \quad (31)$$

As $\underline{x} \to \underline{x}^*$, the incumbent's expected utility converges to

$$\int_0^{q_{sq} + \underline{y}(q_{sq},\eta)} (q_{sq} - (\hat{x} - x_{sq})^2 + r)h(q_I)dq_I + \int_{q_{sq} + \underline{y}(q_{sq},\eta)}^{\infty} (q_I - (\hat{x} - \underline{x}^*)^2 + r)h(q_I)dq_I, \quad (32)$$

which is larger than (30). Hence, there exist $\underline{x}$ sufficiently close to $\hat{x}$ that are profitable deviations.

Finally, suppose that in equilibrium, if indifferent, the voter reelects the incumbent with probability $\rho^* = 1$, and that $\underline{x}^*$ is chosen such that

$$-(\hat{x} - x_{sq})^2 + (\hat{x} - \underline{x}^*)^2 = \underline{y}(q_{sq}, \eta).$$

Hence, $\underline{x}^* = \hat{x} \pm \sqrt{\underline{y}(q_{sq}, \eta) + (\hat{x} - x_{sq})^2}$. Such an equilibrium exists if

$$\int_0^{q_{sq} + \underline{y}(q_{sq},\eta)} (q_{sq} - (\hat{x} - x_{sq})^2 + r)h(q_I)dq_I + \int_{q_{sq} + \underline{y}(q_{sq},\eta)}^{\infty} (q_I - (\hat{x} - \underline{x}^*)^2 + r)h(q_I)dq_I$$

$$\geq \int_0^{q_{sq} - (\hat{x} - x_{sq})^2 - r} (q_{sq} - (\hat{x} - x_{sq})^2)h(q_I)dq_I + \int_{q_{sq} - (\hat{x} - x_{sq})^2 - r}^{\infty} (q_I + r)h(q_I)dq_I, \quad (33)$$

where $h(q_I) = pf(q_I) + (1 - p)g(q_I)$. Rearranging, (33) is satisfied if

$$\int_{q_{sq} - (\hat{x} - x_{sq})^2 - r}^{q_{sq} + \underline{y}(q_{sq},\eta)} (q_{sq} - (\hat{x} - x_{sq})^2 - q_I)h(q_I)dq_I$$

$$- \int_{q_{sq} + \underline{y}(q_{sq},\eta)}^{\infty} ((\hat{x} - \underline{x}^*)^2)h(q_I)dq_I + \int_0^{q_{sq} - (\hat{x} - x_{sq})^2 - r} (r)h(q_I)dq_I \geq 0. \quad (34)$$

Suppose in particular that q_{sq} and η are such that $\underline{y}(q_{sq}, \eta) = 0$. Furthermore, suppose

$x_{sq} = 0$. Substituting in $\underline{x}^*$, as $\hat{x} \to x_{sq}$, the LHS of (34) converges to

$$\int_{q_{sq}-r}^{q_{sq}} (q_{sq} - q_I) h(q_I) dq_I + \int_0^{q_{sq}-r} (r) h(q_I) dq_I.$$

which is positive. Since the LHS of (34) is continuous in $\hat{x}$, for $\hat{x}$ sufficiently close to x_{sq}, the incumbent chooses $\underline{x}^*$.

∎

A.9 Lemma 2

Proof. Suppose in a PBE, the probability the challenger wins reelection when he blocks a proposed policy change is $\omega^* \in [0, 1]$ and the probability he wins reelection if he accepts a proposed policy change is $\alpha^* \in [0, 1]$. Note, (i.) one of the challengers's actions might be off the equilibrium path, and (ii.) neither ω^* nor α^* depend on q_I. Then, the challenger accepts the proposed policy change if and only if $q_I \geq q_{sq} + z^*$, where

$$z^* = \begin{cases} -q_{sq} & \text{if } q_{sq} - (\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 + (\omega^* - \alpha^*)r < 0 \\ -(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 + (\omega^* - \alpha^*)r & \text{if } q_{sq} - (\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 + (\omega^* - \alpha^*)r \geq 0. \end{cases}$$

∎

A.10 Proposition 9

In Propositions 20, 19, and 21 I provide characterization of all PBE where the incumbent proposes a policy change for all q_I and where off the path the voter believes the incumbent has high ability with probability μ if the challenger deviates. I then show that D1 forces the voter to believe that a deviation by the challenger occurs when $q_I = 0$ and as a result has high ability with probability μ. Proposition 9 follows from applying equilibrium condition (iv.) to Propositions 20, 19, and 21.

Proposition 19. *Fix q_{sq} and $\eta < 0$. Suppose the incumbent proposes a policy for all q_I.*

(a) *If $-(\hat{x}_C - x_{sq})^2 \leq -q_{sq} - (\hat{x}_C - \hat{x})^2 - r$, there is a unique PBE where the challenger accepts all proposed policy changes, and the incumbent is always reelected.*

(b) *If $-(\hat{x}_C - x_{sq})^2 \in (-q_{sq} - (\hat{x}_C - \hat{x})^2 - r, \underline{y}(q_{sq}, \eta) - (\hat{x}_C - \hat{x})^2 - r]$, there is a unique PBE where the challenger accepts the proposed policy change if and only if (38) is satisfied, and the incumbent is only reelected if the challenger accepts the proposed policy change.*

(c) If $-(\hat{x}_C - x_{sq})^2 \in (\underline{y}(q_{sq}, \eta) - (\hat{x}_C - \hat{x})^2 - r, \underline{y}(q_{sq}, \eta) - (\hat{x}_C - \hat{x})^2)$, there is a unique PBE where the challenger accepts the proposed policy change if and only if (39) is satisfied, and the incumbent is reelected with probability one if the challenger accepts the proposed policy change and with probability $\rho^* \in (0, 1)$ if the challenger blocks the proposed policy change .

(d) If $-(\hat{x}_C - x_{sq})^2 \geq \underline{y}(q_{sq}, \eta) - (\hat{x}_C - \hat{x})^2$, there is a unique PBE where the challenger accepts the proposed policy change if and only if (37) is satisfied, and the incumbent is always reelected.

Proof. Fix q_{sq} and $\eta < 0$, and suppose that off the equilibrium path the voter believes the challenger is high ability with probability μ. Recall that by assumption the incumbent proposes a policy for all q_I. By Lemma 4, in any PBE, the incumbent is reelected if the challenger accepts the proposed policy change .

Suppose there is a PBE where the challenger accepts every proposed policy change . In this case, the voter's posterior equals his prior, and because the incumbent leads, she is reelected on the equilibrium path. If the challenger deviates, the incumbent is not reelected because $\mu < p + \eta$ for all η satisfying Assumption 1. Hence, for this equilibrium to exist, it must be that

$$0 \geq q_{sq} - (\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 + r. \tag{35}$$

This shows (a) in the proposition

It remains to consider cases where the challenger accepts and rejects proposed policy change s on the equilibrium path. That is, when (35) is not satisfied. By Lemma 4, $\underline{y}(q_{sq}, \eta)$ exists. Hence, there are three cases: $z^* > \underline{y}(q_{sq}, \eta)$, $z^* < \underline{y}(q_{sq}, \eta)$, and $z^* = \underline{y}(q_{sq}, \eta)$. And, in any of these cases, it must be that

$$z^* > -q_{sq}. \tag{36}$$

First, suppose $\underline{y}(q_{sq}, \eta) < z^*$, in which case the incumbent is reelected whether her proposed policy change is accepted or blocked. Then the challenger accepts a proposed policy change if and only if

$$q_I \geq q_{sq} - (\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2. \tag{37}$$

For this PBE to exist, it must be that

$$-(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 > \underline{y}(q_{sq}, \eta)$$

and (36) is satisfied. The first condition ensures $\underline{y}(q_{sq}, \eta) < z^*$ and the second ensures the challenger accepts and rejects proposed policy change s on the equilibrium path. The first condition implies the second. This shows (d) in the proposition.

Next, suppose $\underline{y}(q_{sq}, \eta) > z^*$. In this case the incumbent is reelected if her proposed policy change is accepted but not if it is blocked. Then, the challenger accepts the incumbent's proposed policy change if and only if

$$q_I \geq q_{sq} - (\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 + r. \tag{38}$$

For this equilibrium to exist, it must be that

$$-(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 + r < \underline{y}(q_{sq}, \eta)$$

and (36) is satisfied. The first condition ensures $\underline{y}(q_{sq}, \eta) > z^*$ and the second ensures the challenger accepts and rejects proposed policy change s on the equilibrium path. This shows (b).

Finally, suppose $\underline{y} = z^*$. The the voter is indifferent when the challenger blocks a proposed policy change , and reelects the incumbent with probability ρ. Hence, given ρ, the challenger accepts a proposed policy change if and only if

$$q_I \geq q_{sq} - (\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 + (1 - \rho)r. \tag{39}$$

For the voter to be indifferent, it must be that

$$\rho^* = \frac{-(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 + r - \underline{y}(q_{sq}, \eta)}{r}.$$

Fir for this equilibrium to exist it must be that

$$\underline{y}(q_{sq}, \eta) \in [-(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2, -(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 + r]$$

and (36) is satisfied. The first condition ensures $\rho^* \in [0, 1]$ and the second ensures the challenger accepts and rejects proposed policy change s on the equilibrium path. Substituting ρ^* into the challenger's quality threshold shows that the first condition implies the second. This shows with the previous paragraph shows (c). ■

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Proposition 20. *Fix q_{sq} and $\eta > 0$. Suppose the incumbent proposes a policy for all q_I.*

(a) *If $-(\hat{x}_C - x_{sq})^2 \leq -q_{sq} - (\hat{x}_C - \hat{x})^2$, there is a unique PBE where the challenger accepts all proposed policy change s, and the incumbent is never reelected.*

(b) *If $-(\hat{x}_C - x_{sq})^2 \in (-q_{sq} - (\hat{x}_C - x_{sq})^2, \overline{y}(q_{sq}, \eta) - (\hat{x}_C - x_{sq})^2)$, there is a PBE where the challenger accepts the proposed policy change if and only if (37) is satisfied, and the incumbent is never reelected.*

(c) *If $-(\hat{x}_C - x_{sq})^2 \in [\underline{y}(q_{sq}, \eta) - (\hat{x}_C - \hat{x})^2 - r, \underline{y}(q_{sq}, \eta) - (\hat{x}_C - \hat{x})^2]$, there is a PBE where the challenger accepts the proposed policy change if and only if (41) is satisfied, and the incumbent is reelected with probability $\rho^* \in [0, 1]$ if the proposed policy change is accepted.*

(d) *If $-(\hat{x}_C - x_{sq})^2 > \overline{y}(q_{sq}, \eta) - (\hat{x}_C - x_{sq})^2 - r$, there is a PBE where the challenger accepts the proposed policy change if and only if (38) is satisfied, and the incumbent is reelected if the proposed policy change is accepted.*

Proof. Fix q_{sq} and $\eta > 0$, and suppose the incumbent proposes a policy for all q_I. Furthermore, suppose that off the equilibrium path the voter believes the challenger is high ability with probability μ. By Lemma 4, in any PBE, the incumbent is replaced if the challenger blocks the proposed policy change .

First, suppose there is a PBE where the challenger accepts every proposed policy change . On the path, the voter's posterior equals his prior so the incumbent is not reelected because she trails. And by the assumption about the off-the-path belief induced by deviation, the incumbent is also not reelected if the challenger deviates. Hence, for this to be a PBE it must be that

$$0 \geq q_{sq} - (\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2. \tag{40}$$

This shows (a).

It remains to consider cases where the challenger accepts and rejects proposed policy change s on the equilibrium path. That is, when (40) is not satisfied. By Lemma 4, $\overline{y}(q_{sq}, \eta)$ exists. Hence, there are three cases: $z^* > \overline{y}(q_{sq}, \eta)$, $z^* < \overline{y}(q_{sq}, \eta)$, and $z^* = \overline{y}(q_{sq}, \eta)$.

First suppose $z^* > \underline{y}(q_{sq}, \eta)$, in which case the incumbent is reelected if the challenger accepts the proposed policy change but not otherwise. Then, the challenger accepts a proposed policy change if (38) is satisfied. For this to be a PBE, it must be that

$$-(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 + r > \underline{y}(q_{sq}, \eta)$$

and (36). The first condition ensures $z^* > \underline{y}(q_{sq}, \eta)$ and the second ensures the challenger accepts and rejects proposed policy change s on the equilibrium path. The first condition implies the second. This shows (d).

Next, suppose $z^* < \underline{y}$, in which case the challenger is reelected whether or not he accepts the proposed policy change . Then, the challenger accepts a proposed policy change if and only if (37) is satisfied. For this to be a PBE, it must be that

$$-(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 < \underline{y}(q_{sq}, \eta)$$

and (36). The first condition ensures $z^* < \underline{y}$ and the second condition ensures the challenger accepts and rejects proposed policy change s on the equilibrium path. Combining the conditions shows (b) in the proposition.

Finally, suppose $z^* = \overline{y}$, in which case the voter is indifferent between the incumbent and challenger when the challenger accepts a proposed policy change . Hence, he reelects the incumbent with probability ρ. Given ρ, the challenger accepts a proposed policy change if

$$q_I \geq q_{sq} - (\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 + \rho r. \tag{41}$$

For the voter to be indifferent, it must be that

$$\rho^* = \frac{\overline{y}(q_{sq}, \eta) - +(\hat{x}_C - x_{sq})^2 - (\hat{x}_C - \hat{x})^2}{r}.$$

For this to be a PBE, it must be that

$$\overline{y}(q_{sq}, \eta) \in \left[-(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2, -(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 + r \right]$$

and (36). The first condition ensures $\rho^* \in [0, 1]$ and the second ensures the challenger accepts and rejects proposed policy change s on the equilibrium path. Substituting ρ^* into the challenger's quality threshold shows that the first condition implies the second. This shows (c). ∎

Proposition 21. *Fix q_{sq} and $\eta = 0$. Suppose the incumbent proposes a policy for all q_I.*

(a) *If $-(\hat{x}_C - x_{sq})^2 \leq -q_{sq} - (\hat{x}_C - \hat{x})^2$, there is a PBE where the challenger accepts all proposed policy change s, and the incumbent is reelected with probability $\rho^* \in [0, 1]$.*

(b) *If $-(\hat{x}_C - x_{sq})^2 > -q_{sq} - (\hat{x}_C - \hat{x})^2 - r$, there is a PBE where the challenger accepts the proposed policy change if and only if (38) is satisfied, and the incumbent is reelected if the proposed policy change is accepted.*

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Proof. Fix q_{sq} and $\eta = 0$, and suppose the incumbent proposes a policy change for all q_I. Furthermore, suppose that off the equilibrium path the voter believes the challenger is high ability with probability μ.

Additionally, suppose there is a PBE where the challenger accepts any proposed policy change . Then on the path the voter is indifferent between the challenger and incumbent and reelects the incumbent with probability $\rho \in [0, 1]$. If the challenger deviates, he is reelected since $\mu < p$. For a given ρ, this PBE exists if

$$0 \geq q_{sq} - (\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 + \rho r.$$

Hence, this PBE exists if $0 \geq q_{sq} - (\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2$. This shows (a).

Now suppose there is a PBE where the challenger accepts and blocks proposed policy change s on the equilibrium path. Hence, the incumbent is reelected when the challenger accepts a proposed policy change and is not reelected when the challenger blocks a proposed policy change . Thus, the challenger will agree to a proposed policy change if and only if

$$q_I \geq q_{sq} - (\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 + r.$$

For this to be an equilibrium it must be that (36) is satisfied ■

Proposition 22. *In any PBE of* Γ^{sb} *surviving D1,*

$$\Pr(\tau_I = \bar{\theta} | deviation\ off\ path) = \frac{pf(0)}{pf(0) + (1-p)g(0)}.$$

Proof. Because I focus on equilibria where the incumbent proposes a policy for all q_I, the only action that is potentially off the equilibrium path is an action by the challenger. Moreover, Lemma 2 implies that in any PBE the challenger uses a threshold. Hence, the only action that is off the path is blocking a proposed policy change .

Let σ be a PBE surviving D1 in which the challenger accepts every proposed policy change , and let $\varphi \in \mathbb{R}_+$ be an arbitrary type of challenger. Then, having observed $q_I = \varphi$, the challenger's utility from accepting the proposed policy change is

$$\varphi - (\hat{x}_C - x_I)^2 + \omega^* r,$$

where $\omega^* \in [0, 1]$ is the probability the challenger is elected if he accepts the proposed policy change under σ. This utility is increasing in q_I, hence his utility on the path is lowest when

$q_I = 0$ If he deviates off the path, his utility is

$$q_{sq} - (\hat{x}_C - x_{sq})^2 + \alpha r$$

where $\alpha \in [0, 1]$ is the probability the challenger is elected if he accepts the proposed policy change . This utility does not depend on q_I. By a similar argument to the proof of Proposition 15, if, in a PBE, the challenger is willing to deviate for some α, he will deviate for the largest set of α when $\varphi = 0$. Hence, D1 forces the voter to believe

$$\Pr(\tau_I = \overline{\theta} | \text{deviation off path}) = \frac{pf(0)}{pf(0) + (1-p)g(0)}.$$

∎

When $\eta < 0$, there is always a unique PBE satisfying equilibrium conditions (i.)-(iii.).

When $\eta = 0$, a multiple PBEs exist when $0 \geq q_{sq} - (\hat{x}_C - \hat{x})^2 + (\hat{x}_C - x_{sq})^2$. If $0 \geq q_{sq} - (\hat{x}_C - \hat{x})^2 + (\hat{x}_C - x_{sq})^2 + r$, then in all PBEs the challenger blocks all policy change so introducing equilibrium condition (4) does not restrict the set of PBEs. But if $q_{sq} - (\hat{x}_C - \hat{x})^2 + (\hat{x}_C - x_{sq})^2 + r > 0$ and $0 \geq q_{sq} - (\hat{x}_C - \hat{x})^2 + (\hat{x}_C - x_{sq})^2$, the unique equilibrium surviving (4) is the equilibrium where the challenger accepts and blocks on the equilibrium path.

When $\eta > 0$, there is a unique PBE surviving (i.)-(iii.) unless $\overline{y}(q_{sq}, \eta) \in (-(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2, -(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 + r)$, in which case there are three. The PBE surviving (4) is the one where the challenger accepts policy change if and only if (38) is satisfied.

In $\hat{\Gamma}^v$, the challenger's quality threshold is $-(\hat{x}_C - x_{sq}) + (\hat{x}_C - \hat{x})$, which is weakly positive by Assumption 2. Comparing this to the quality thresholds in Propositions 19, 20, and 21 shows that the challenger's quality threshold is weakly higher in any equilibrium of Γ^v than in $\hat{\Gamma}^v$. This proves (a) from Proposition 9. Part (c) follows immediately from (a), and part (b) follows from (a) and Assumption 2.

A.11 Proposition 10

Proof. Recall from Lemma 5 that $\underline{y}(q_{sq}, \eta)$ and $\overline{y}(q_{sq}, \eta)$ are increasing in η.

Fix q_{sq}. Propositions 19, 20, and 21 imply the following:

(1) If $\eta < 0$, $D^*(y^*_{\Gamma^v})$ is weakly increasing in $\underline{y}(q_{sq}, \eta)$ and $D^*(y^*_{\Gamma^v})$ is weakly less than $\min\{r, q_{sq} - (\hat{x} - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 + r\}$

(2) If $\eta = 0$, $D^*(y^*_{\Gamma^v}) = \min\{r, q_{sq} - (\hat{x} - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 + r\}$.

(3) If $\eta > 0$, $D^*(y^*_{\Gamma^v})$ is weakly decreasing in $\bar{y}(q_{sq}, \eta)$ and $D^*(y^*_{\Gamma^v})$ is weakly less than $\min\{r, q_{sq} - (\hat{x} - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 + r\}$.

These results combined with Lemma 5 imply that $D^*(y^*_{\Gamma^v})$ is weakly increasing as η approaches zero.

∎

A.12 Proposition 11

Fix q_{sq} and $\eta < 0$.

In Γ, if $\underline{y}(q_{sq}, \eta) > -(\hat{x} - x_{sq})^2 > -q_{sq}$, the incumbent is reelected if and only if she changes the status quo. And in Γ^v, if $\underline{y}(q_{sq}, \eta) \leq -(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2$, the incumbent is reelected regardless of whether the challenger accepts this proposed policy change . Hence, if

$$-(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 > -(\hat{x} - x_{sq})^2, \tag{42}$$

the probability of reelection in Γ is lower than the probability of reelection in Γ^v. Condition (42) is satisfied if the challenger's ideological benefit from policy change is strictly smaller than the incumbent's.

B Robustness

B.1 Second Policymaking Period

Suppose that after the election, there is a second policymaking period where the then-incumbent j develops an alternative $\check{\pi} = (\check{x}_j, \check{q}_j)$ and chooses whether to replace the status quo, $\check{\pi}_{sq} = (0, 0)$.

Incumbent j changes the status quo for all $\check{q}_j$. Hence, the voter strictly prefers to elect the incumbent in the first period if

$$\Pr(\tau_I = \bar{\theta}|\cdot) \int_0^\infty \check{q}_I f(\check{q}_I) d\check{q}_I + (1 - \Pr(\tau_I = \bar{\theta}|\cdot)) \int_0^\infty \check{q}_I g(\check{q}_I) d\check{q}_I - \check{x}$$
$$> p \int_0^\infty \check{q}_C f(\check{q}_C) d\check{q}_C + (1 - p) \int_0^\infty \check{q}_C g(\check{q}_C) d\check{q}_C - \check{x}_C.$$

This condition is equivalent to

$$\Pr(\tau_I = \bar{\theta}|\cdot) > p + \eta,$$

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where $\eta = \frac{(x_V - \check{x})^2 - (\check{x}_V - \check{x}_C)^2}{\int_0^\infty \check{q}f(\check{q})d\check{q} - \int_0^\infty \check{q}g(\check{q})d\check{q}}$.

B.2 Incumbent Knows Her Type

Suppose the incumbent knows her type. Furthermore, suppose that in equilibrium, the voter reelects the incumbent with probability $\lambda^* \in [0,1]$ when the incumbent retains the status quo, and with probability $\kappa^* \in [0,1]$ when the incumbent changes the status quo. Then an incumbent of type τ_j changes the status quo if and only if

$$q_I \geq q_{sq} - (\hat{x} - x_{sq})^2 + (\lambda^* - \kappa^*)r.$$

Note, the incumbent's strategy does not depend on her type.

B.3 Election Outcome Affects Policy

Consider a game where the incumbent chooses $\dot{\pi} \in \{\pi_{sq}, \pi_I\}$. If the incumbent is reelected, $\pi = \dot{\pi}$. If the voter elects the challenger, $\pi = \pi_{sq}$. Moreover, assume $f(q_I) = \lambda_f e^{-\lambda_g q_I}$ and $g(q_I) = \lambda_g e^{-\lambda_g q_I}$ with $\lambda_g > \lambda_f$.

If the voter elects the challenger, his expected utility is

$$p - x_{sq}^2 + q_{sq} + \eta. \tag{43}$$

If $\dot{\pi} = \pi_I$ and the voter elects the incumbent, his expected utility is

$$\Pr(\tau_I = \bar{\theta}|\dot{\pi} = \pi_I, y^*) - \hat{x}^2 + \int_{q_{sq}+y^*}^\infty q_I h(q_I) dq_I, \tag{44}$$

and if $\dot{\pi} = \pi_{sq}$ and the voter elects the incumbent, his expected utility from electing the incumbent is

$$\Pr(\tau_I = \bar{\theta}|\dot{\pi} = \pi_{sq}, y^*) - x_{sq}^2 + q_{sq}. \tag{45}$$

Suppose there is a PBE where the incumbent's decision is not electorally relevant either because she is reelected regardless or is not reelected regardless of her decision. In this PBE, the incumbent changes the status quo if and only if

$$q_I \geq q_{sq} - (\hat{x} - x_{sq})^2.$$

Suppose instead that there is a PBE where the incumbent changes and retains on the equi-

librium path, and is reelected only if she changes the status quo. In this PBE, the incumbent changes the status quo if and only if

$$q_I \geq q_{sq} - (\hat{x} - x_{sq})^2 - r.$$

Hence, when policy change is electorally consequential, the incumbent changes the status quo more than she does when policy change is not electorally consequential.

To show existence of a PBE where policy change is not electorally consequential, suppose $\hat{x} = 0$ and $y^* > -q_{sq}$. If $\eta < 0$, the voter strictly prefers to reelect the incumbent if she retains if

$$\frac{1}{1 + \frac{1-p}{p}\frac{e^{-\lambda_g(q_{sq}-(x_{sq})^2)}}{e^{-\lambda_f(q_{sq}-(x_{sq})^2)}}} - p \equiv \underline{\eta}(x_{sq}, x_I) > \eta, \tag{46}$$

and strictly prefers to reelect the incumbent if she changes the status quo if

$$\Pr(\tau_I = \bar{\theta} | \dot{\pi} = \pi_I, y^*) + \int_{q_{sq}-(x_{sq})^2}^{\infty} q_I(p\lambda_f e^{-\lambda_f q_I} + (1-p)\lambda_g e^{-\lambda_g q_I})dq_I > p - x_{sq}^2 + q_{sq} + \eta \tag{47}$$

Since the incumbent uses a threshold strategy, $\Pr(\tau_I = \bar{\theta} | \dot{\pi} = \pi_I, y^*) > p$ for all y^*. Moreover, if $x_{sq} = 0$,

$$\int_{q_{sq}-(x_{sq})^2}^{\infty} q_I(p\lambda_f e^{-\lambda_f q_I} + (1-p)\lambda_g e^{-\lambda_g q_I})dq_I > q_{sq}$$

The voter's expected utility from electing the incumbent is continuous in x_{sq} as is her expected utility from electing the challenger. Hence, for x_{sq} sufficiently close to zero that (47) is satisfied, η sufficiently negative that (46) is satisfied, and q_{sq} sufficiently large that $q_{sq} > x_{sq}^2$, which ensures the incumbent retains and changes the status quo on the equilibrium path, there is a PBE where the incumbent is reelected whether she retains or changes the status quo.

Continue to suppose $\hat{x} = 0$ and $y^* > -q_{sq}$. If $\eta > 0$, the incumbent is never reelected if she retains the status quo since $p + \eta > \Pr(\tau_I = \bar{\theta} | \dot{\pi} = \pi_{sq}, y^*)$ for all y^*. However, she is reelected if she changes the status quo if (47) is satisfied. Suppose $x_{sq}^2 < \eta$. By a similar argument to above, if x_{sq} is sufficiently close to zero, (47) is satisfied, Hence, for x_{sq} sufficiently close to zero that (47) is satisfied, η sufficiently small that $\eta < x_{sq}^2$, and q_{sq} sufficiently large that $q_{sq} > x_{sq}^2 + r$, there is a PBE where the incumbent is reelected if and only if she changes status quo.