Signaling Ability Through Policy Change

Benjamin Shaver*

University of Chicago

August 16, 2024

Updated often. Click here for the latest version.

Abstract

How does uncertainty about a policymaker's ability to develop high-quality policies affect their policymaking? I study a model where an incumbent policymaker chooses whether to retain or replace a status quo policy with a new policy. The voter learns about the incumbent's ability to develop high-quality policies from this decision, then reelects the incumbent or replaces them with a challenger. I show that when the incumbent trails the challenger and changing the status quo is a sufficiently strong signal of high ability, and when the incumbent leads the challenger and retaining is a sufficiently strong signal of low ability, the incumbent engages in "ability signaling," making additional, low-quality policy changes. Moreover, I show that the extent of ability signaling increases in the degree of ex-ante electoral competition. Next, I examine how the observability of policy quality and the ability to choose the ideology of a policy affects the incumbent's behavior in equilibrium. Finally, I explore what happens when the incumbent must secure the support of another policymaker to change the status quo while engaged in zero-sum electoral competition. This reduces the probability of policy change and increases the expected policy quality conditional on policy change. Yet, the need to secure support may be electorally beneficial for the incumbent.

---

*blshaver@uchicago.edu. I am deeply indebted to my dissertation chair, Wiola Dziuda, and dissertation committee, Ethan Bueno de Mesquita, Scott Gehlbach, and Zhaotian Luo, for their help on this project. This paper also benefited from discussion with Kevin Angell, Scott Ashworth, Peter Bils, Martin Castillo-Quintana, Álvaro Delgado-Vega, Giorgio Farace, Anthony Fowler, Will Howell, Barton Lee, Hongyi Li, Monika Nalepa, Jon Rogowski, Daniel Sonnenstuhl, and Adam Zelizer. Thank you to the audiences at the University of Chicago, MPSA, and SIOE.

1 Introduction

Voters want to choose policymakers who share their policy goals, work hard, understand which policies need to be undertaken, and can develop high-quality policy. However, these traits are difficult to observe, so voters are uncertain about their policymakers' types. Policymakers recognize this, and often take actions to demonstrate their quality. This phenomena has been discussed with respect to politicians' ideology (Fearon, 1999), effort (Austen-Smith and Banks, 1989; Banks and Sundaram, 1993), and understanding of which policies been do be done (Canes-Wrone et al., 2001; Ashworth and Shotts, 2010; Bils, 2023; Kartik et al., 2015); I consider their ability to develop high-quality policy.

Suppose an incumbent inherits a status quo policy and decides whether to retain or replace it after developing their highest quality alternative policy. Assume the incumbent's ability to develop a high-quality policy today—characterized by attributes such as a low cost-benefit ratio—is positively correlated with their ability to develop a high-quality policy tomorrow. The pivotal voter observes whether the policymaker changes the status quo and reelects them if the expected quality of policy the incumbent will develop tomorrow is sufficiently high. If the incumbent cares about policy quality and reelection, and if the voter knows the quality of policy the incumbent will develop tomorrow, the incumbent replaces the status quo when the new policy's quality exceeds the quality of the status quo. However, if the incumbent values policy quality and winning reelection, but the voter does not know the quality of the policy the incumbent will develop tomorrow, and the voter believes the incumbent changes the status quo if and only if the new policy's quality exceeds the quality of the status quo, changing the status quo may be electorally advantageous as it signals the ability to develop high-quality policies in the future.

In this paper, I build upon this simple logic to explore how uncertainty about a policymaker's ability to develop high-quality policies affects their policymaking. To do so, I study a formal model that adds structure to the previous example. In this model, 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 incur a cost to change it to a policy with their preferred ideology. Before deciding whether to change the policy, the incumbent privately learns the quality of the alternative policy they could implement. The quality of this policy is drawn from one distribution if the incumbent has high policymaking ability and from a different distribution if their ability is low. Notably, these distributions are such that a higher-quality policy is more likely to be developed by a high-ability policymaker. After the incumbent decides whether to change the status quo, but before the quality of the new policy is revealed, a voter who values policymaker's ability to produce high-quality policies decides whether to reelect the incumbent or to choose a challenger.

To illustrate the effect of uncertainty about the policymaker's ability, I begin by analyzing the benchmark case where the voter knows whether the incumbent has high or low ability. Consequently, the incumbent's decision whether to change the status quo has no effect on the outcome of the election. But, by changing the status quo, the incumbent moves the ideology of the policy to their ideal point and changes the quality. Hence, they will change the status quo when the ideological benefit and net change in quality from policy change exceed the cost.

I then solve the model where the incumbent's type is unknown. In some equilibria, as in the benchmark, the incumbent's decision to change the status quo does not affect the election. In these equilibria, the incumbent's strategy coincides with their strategy in the benchmark. In the remaining equilibria, the probability the incumbent is reelected is strictly greater if they change the status quo than if they retain it. In these equilibria, in addition to moving the ideology of the policy to their ideal point and changing the quality, policy change is associated with a relative increase in the probability of reelection. In equilibrium, this additional incentive induces the incumbent to change the policy for lower realizations of quality. I refer to this additional policy change relative to the benchmark as "ability signaling."

Whether ability signaling arises in equilibrium depends on two things. The first is the degree of ex-ante electoral competition between the incumbent and the challenger. When there is little ex-ante electoral competition, either because the incumbent leads or trails the challenger by a wide margin, the incumbent's policy change decision does not affect the election outcome. Hence, there is no ability signaling in equilibrium. However, once electoral competition increases to a sufficient degree, the incumbent's policy change decision is electorally relevant. In these cases, the incumbent engages in ability signaling.

The second is the strength of the signal conveyed by the incumbent's decision whether or not to change the status quo. When the non-policy quality benefits of policy change dominate the cost, the incumbent changes the status quo for relatively lower-quality alternative policies. In this case, changing the status quo is a weak signal of high ability, and retaining is a strong signal of low ability. When the cost dominates, the incumbent is more discerning, and changing the status quo is a strong signal of ability, while retaining is a weak signal of low ability. When the incumbent trails and is only reelected if they change the status quo and changing the status quo is a strong signal of ability, ability signaling arises if the non-policy quality benefits of policy change dominate the cost.

When they trail and are reelected unless they retain, and retaining is a strong signal of low ability, ability signaling arises if the cost dominates the non-policy quality benefits of policy change.

When a policymaker changes a policy late in their term, voters may not learn its quality before the next election, but if the change happens early in the term, voters have more time to assess it. Hence, the timing of the change influences voter information. To account for this, I assume there is an exogenous probability that the alternative policy's quality is revealed if the incumbent changes the status quo. In equilibrium, there are two types of alternative policies: policies of sufficiently high quality that the voter will reelect the incumbent if they change the status quo and the quality is revealed and policies of sufficiently low quality that if their quality is revealed, the voter elects the challenger. Late in the incumbent's term, when the probability of quality revelation is low, an incumbent's incentive to change the status quo is similar regardless of which type of alternative policy they developed. But earlier in their term, when the probability of revelation is high, an incumbent whose alternative policy is low quality has less incentive to change the status quo. Hence, as the probability of quality revelation increases, the extent of ability signaling decreases.

In light of this, one might conjecture that if given the choice of when to develop a policy, the incumbent prefers to wait until the end of their term in case it turns out their alternative policy is low quality. While this is true in some cases, in others, the incumbent prefers to develop a policy early in their term to increase the probability the voter learns the quality of their alternative policy if they eventually change the status quo. Hence, in some situations, the incumbent behavior is similar to the behavior predicted by the political business cycles literature, an incumbent pursuing policies with short-term benefits at the end of their term to boost electoral prospects (Nordhaus, 1975; Drazen, 2000). In other cases, their behavior aligns more with the "honeymoon hypothesis," where politicians use their early-term political capital to enact new policies (McCarty, 1997; Beckmann and Godfrey, 2007).

Policymakers are not required to develop policies that match their ideal point; they may choose more moderate or extreme policies. I study the model under the alternative assumption that the incumbent publicly chooses the ideology of their alternative policy before learning its quality. I then show that for some parameters, the incumbent develops a policy that differs from their ideal point to improve their electoral fortunes. In doing so, the incumbent makes policy change less attractive as the ideological benefit is smaller. Hence, the alternative policy must be of higher quality for the incumbent to change 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. This means the incumbent can sometimes win reelection with a higher probability than if they proposed a policy with their ideal ideology. Notably, unlike other papers where policy has an ideological and quality dimension, the incumbent does not propose a policy that differs from their ideal point for Downsian reasons but to affect the information conveyed by their decision whether to change the status quo (Hirsch and Shotts, 2012, 2018; Hitt et al., 2017).

So far, the incumbent unilaterally changes the status quo. However, many institutional arrangements require a policymaker to secure agreement from others to change policy. Moreover, in some cases, the policymaker must secure agreement from another actor with whom they are engaged in electoral competition. For example, when the incumbent is a majority party and the challenger is a minority party. To conclude, I study an extension where the incumbent, or the majority, proposes an alternative policy, which is implemented if and only if the challenger, or the minority, agrees to this proposal. Before deciding, the minority observes the quality of the majority's proposed alternative.

In equilibrium, relative to the baseline model, the probability of policy change is weakly lower, and the expected quality of policy conditional on policy change is weakly higher. This happens for two reasons. First, if the minority and majority have different ideal points, the minority blocks policy changes that yield them lower utility than the status quo. Perhaps more interestingly, the second reason is that the minority blocks policy change for electoral reasons. When successful policy change affects the election, the minority blocks policy change to win elections. Even if the majority and minority have the same ideal point, the minority will sometimes block policy change the incumbent would enact in the baseline. This result captures the strategic, electorally motivated opposition we see in roll-call voting, even on non-ideological issues (Lee, 2009).

Additionally, in equilibrium, the need to secure the minority's agreement is sometimes electorally beneficial for the majority in that they can win reelection in cases where the incumbent was not able to in the baseline model. Because the minority blocks some policy changes that the incumbent would have enacted in the baseline model, securing the minority's agreement is a stronger signal of high ability, and failing to secure the minority's agreement is a weaker signal of low ability. Hence, this model provides a theoretical account of why voters desire bipartisan policymaking, a preference that appears in public opinion polls and political pundits' columns (Harbridge et al., 2014; Friedman, 2012).

1.1 Related Literature

This paper considers how uncertainty about a policymaker's ability to develop high-quality policies affects their 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 a replacement policy. This makes the replacement policy more attractive to another player who has ideological preferences different from the policymaker's and who needs to agree to change the status quo to the replacement policy. With one exception, Hitt et al. (2017), policymakers in the existing models do not differ in their ability to develop high-quality policies. In contrast, in my model, some policymakers have more ability than others to develop high-quality policies. Moreover, unlike Hitt et al. (2017), I study a setting with imperfect information about policymakers' 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 what a policymaker knows about the state of the world (Canes-Wrone et al., 2001; Ashworth and Shotts, 2010; Kartik et al., 2015; Bils, 2023) and about a policymaker's ideal point (Fearon, 1999) among other topics. In both 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 ideal point. I examine a distinct source of uncertainty, uncertainty about a policymaker's ability to craft high-quality policies and show that this leads to distortions in the form of additional, low-quality policy change.

Within this literature, my paper is closest to Judd (2017), who studies a model where a policymaker unilaterally chooses whether to change the status quo. If they change the status quo, they directly reveal their skill, which a voter cares about when choosing whether to reelect the policymaker. In my model, the incumbent cannot directly reveal their ability for two reasons. First, when the incumbent changes the status quo, the voter only observes the decision to change; she doesn't observe the incumbent's type. Second, policymakers with ability can sometimes only enact low-quality policies, and policymakers without ability can sometime enact high-quality policies. Hence, even if the incumbent changes the status quo and the voter observes the quality of the new policy, she will still be uncertain whether the incumbent has high ability. An additional distinction between Judd (2017) and the model in this paper is that in this model, the incumbent has ideological preferences, which incentivize policy change and pays a cost to change the status quo, which incentivizes retaining the status quo. Since the voter doesn't learn the quality of the new policy, the incentives exerted by ideology and the cost of policy change affect the information the voter learns from the incumbent's choice to retain or change the status quo. This affects the incumbent's incentive to change the status quo.

By incorporating a cost to change the status quo, this paper is also related to the literature on costly policy change (Loeper and Dziuda, 2024; Gersbach and Tejada, 2018; Gersbach et al., 2023). It departs from this literature by incorporating a separate dimension of policy—policy quality—and uncertainty about the ability of a policymaker to enact high-quality policy. This contrast with the existing literature shows how the relationship between the costliness of policy change and the ideological benefit affects when policy change is electorally decisive.

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). 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 they act. Gibbs (2024) studies a similar question, although using a model where the policymaker's ability is related to the quality of their information about the right policy rather than their ability to develop high-quality policies.

Finally, in an extension of the baseline model, I study a setting where a majority party and minority party must agree to change the status quo while engaged in zero-sum electoral competition. The behavior of the parties in equilibrium is reminiscent of (Lee, 2009, 2016). Moreover, this model provides a micro-foundation for why a minority party would engage in the behavior identified by Lee (2016).

2 Model

There are three players: an incumbent policymaker (I, "they"), a challenger (C, "they"), and a voter (V, "she"). Each policymaker, $j \in \{I, C\}$, is either high ability ($\tau_j = \overline{\theta}$) 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 a new policy π_I, which has an exogenously determined ideology $\hat{x} \geq 0$ and quality $q_I \geq 0$. [1] While the incumbent and voter know $\hat{x}$, only the incumbent knows q_I, which they privately learn before publicly decides whether to change the status quo. After this decision is made, but without observing q_I, the voter chooses between reelecting the incumbent or replacing them with the challenger, $e \in I, C$.

The quality of the incumbent's replacement policy, q_I, is drawn from one of two distributions depending on their type. Let $f(q_I)$ be the prior distribution of q_I if the incumbent has high ability, and let $g(q_I)$ 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) such that

$$\frac{f(q_I)}{g(q_I)}$$

is strictly increasing in q_I (Milgrom, 1981).[2]

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.

Payoffs The incumbent cares about the quality and ideology of policy, winning reelection, and the cost of revision:

$$u_I(x, q) = -(x - x_I)^2 + q - \mathbb{1}_{\pi \neq \pi_{sq}} \kappa + \mathbb{1}_{e=I} r,$$

where $\kappa > 0$ is the cost of changing the status quo, x_I is the incumbent's ideal point, and r represents office rents. I begin by assuming $\hat{x} = x_I$, that is, the ideology of the

[1] In Section 6, I explore an extension where the incumbent chooses $\hat{x}$.

[2] Assuming that $f(q_I)$ and $g(q_I)$ have the strict MLRP ensures there is a unique threshold in the incumbent's strategy such that voter is indifferent between the incumbent and challenger. Without this assumption, none of the substantive results would change but there might be more equilibria. See Section 10.2 of the Appendix for more information.

incumbent's replacement policy matches their ideal point. But, in Section 6, I allow the incumbent to choose a policy with an ideology that differs from their ideal point.

The voter cares about policy and the ability of the policymaker:

$$u_V(x,q) = \mathbb{1}_{e=I}\mathbb{1}_{\tau_I=\overline{\theta}} + \mathbb{1}_{e=C}\mathbb{1}_{\tau_C=\overline{\theta}} + \mathbb{1}_{e=C}\eta - x^2 + q - \mathbb{1}_{\pi\neq\pi_{sq}}\zeta,$$

where the voter's ideal point is zero, $\eta \in \mathbb{R}$ represents the voter's preference for one of the policymakers for reasons other than ability and captures a notion of ex-ante electoral competition, and $\zeta \in \mathbb{R}_+$ are the adaptation costs the voter pays if the status quo changes. If $\eta > 0$, the incumbent ex-ante **trails** the challenger, and if $\eta < 0$, the incumbent ex-ante **leads** the challenger.

The voter's utility function means her voting decision does not affect her utility from policy.[3] Hence, in equilibrium, the voter reelects the incumbent with the following probability:

$$\Pr(e=C) = \begin{cases} 1 \text{ if} & \Pr(\tau_I = \overline{\theta}) > p+\eta \\ \rho \in [0,1] \text{ if} & \Pr(\tau_I = \overline{\theta}) = p+\eta \\ 0 \text{ if} & \Pr(\tau_I = \overline{\theta}) < p+\eta. \end{cases}$$

Equilibrium

1. The incumbent's strategy is a function $\sigma_I(\cdot) : \mathbb{R}_+ \to \Delta\{\pi, \pi_I\}$;

2. The voter's strategy is a function $\sigma_V(\cdot) : \{\pi, \pi_I\} \to \Delta\{I, C\}$.

A perfect Bayesian equilibrium surviving D1, referred to in the paper as an "equilibrium," satisfies the following:

1. each player's strategy is sequentially rational given their beliefs and the other players' strategies,

2. the voter's belief about the incumbent's ability satisfies Bayes' rule on the equilibrium path,

3. the voter's belief about the incumbent's ability satisfies the D1-criterion off the equilibrium path.

[3] In Section 8.2, I study a version of the model where the election's outcome affects policy.

The first two conditions are the usual conditions for a perfect Bayesian equilibrium and the third condition is the D1-criterion from Cho and Kreps (1987). For many parameters, a unique equilibrium satisfies the first three conditions, but, as I show in the next section, for other parameters, multiple equilibria exist satisfying the first three conditions. When that is the case, I sometimes focus on the "equilibrium with minimum policy change," which is the unique equilibrium that also satisfies:

(4.) and if multiple equilibria exist, this is the equilibrium with the lowest probability of policy change.

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. Despite this, it will be shown to exist. Notably, the results of the model do not change if I focus on the equilibrium with the highest probability of policy change. What is important is that I focus on a pure strategy equilibrium when one exists simultaneously with a mixed strategy.

3 Discussion of the Model

Policy Quality I model policy as having two dimensions. The first dimension, the ideology of the policy, represents where the policy falls along the left-right policy dimension. The second dimension, the quality of the policy, represents aspects of the policy that all players value such as cost effectiveness, lack of susceptibility to corruption and fraud, and the extent to which the policy achieves agreed upon goals like economic growth. In this way, a policy's quality is similar to a party or politician's valence (Stokes, 1963). To illustrate these dimensions, consider the example of the Paycheck Protection Program (PPP), established through the CARES Act during the Covid-19 crisis, which provided low-interest loans to business owners to cover pay roll. The ideology of the PPP can be represented by a point along the left-right policy dimension, and this ideology differs from the ideology of other policies that might have aimed to support businesses during the COVID-19 crisis. Additionally, there are 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 in part to the way applications were screened (Griffin et al., 2023; Brooks, 2023).[4] Relative to a version of the PPP that was drafted in a way that was less susceptible for fraud, this policy has lower quality.

Learning about Quality I assume the incumbent knows the quality of their proposed 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 it is implemented to learn about its quality. The model represents a situation where there is insufficient time for the voter to learn about quality before the election, so even if the incumbent changes the status quo, the voter doesn't observe the quality of the new policy. In Section 5, I relax this assumption by allowing the voter to learn the quality of the new policy with some probability, either through experience or learning from some other policy expert.

Ability to Craft High-Quality Policy In the model, the policymaker's type is related to their ability to develop high-quality policy. Policymakers differ in this ability 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 their ability to utilize lobbyists and interest groups to to help craft the policy.

This ability is related to the idea of 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 they are perceived as able to develop high-quality policies in that area. Existing work typically begins with the assumption that voters know which policymaker owns 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 they have ability or not. In the model, the incumbent and the challenger both have the same prior probability of having 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. So, this model speaks to more than cases where neither policymaker owns an issue.

Timing In the model, the policymaker learns the quality of their replacement policy and then decides whether to change or retain the status quo. This feature of the model rep-

[4] 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, the lenders had little incentive to scrutinize applications closely. See Brooks (2023) for more information.

resents how, after drafting a piece of legislation, a policymaker has the choice of whether to implement it. For example, after designing an executive order with their 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 proceed with 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 Affordable Care Act, replacing them with block grants to states (Frostenson, 2017). Although the amendment had support among most Senate Republicans, key votes like Susan Collins and John McCain stated they would vote against 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." (Collins, 2017)

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

Voter's Preferences The cost the voter pays if the status quo is changed represents the cost of adapting to or complying with a new policy. For example, after the passage of the Affordable Care Act, voters incurred a cost to learn about the policy (Am I eligible? What are the benefits of enrollment?) and a cost to comply with the policy (time spent navigating the marketplace and submitting an application). Businesses also faced costs to comply with the ACA as many no longer had the choice of whether to offer group health plan coverage to their employees. Even those businesses that are not required still need to follow the rules dictating which businesses must provide insurance to their employees.

4 Analysis

4.1 Benchmark: No Uncertainty about the Incumbent's Type

I begin by considering the benchmark case where there is no uncertainty about the incumbent's type. Denote this game by $\hat{\Gamma}$. Since the voter knows whether the incumbent has high ability, her voting decision is unrelated to the incumbent's decision whether to change the status quo. If the incumbent has high ability, the voter will reelect them, and if not, she will elect the challenger. Therefore, the incumbent changes the status quo if and only if the change increases their utility, which is when:

$$q_I > \max\{q_{sq} + \kappa - (x_I - x_{sq})^2, 0\}. \tag{1}$$

The incumbent's cutoff depends on the cost of policy change and the ideological benefit of policy change, but does not depend on the office rents obtained from winning the election. Additionally, note that when the ideological benefit of policy change dominates the cost, the incumbent sometimes changes the status quo to policies that are relatively lower quality.

4.2 Full Model: Uncertainty about the Incumbent's Type

I now turn to the full model as described in Section 2. Denote this game by Γ. When the voter chooses whether to reelect the incumbent, she has observed whether or not the incumbent changed the status quo but has not observed q_I. This means her strategy is a mapping from the incumbent's decision to a vote choice. Therefore, there are three potential types of equilibria. In the first, the voter's choice does not depend on the incumbent's decision. In this type of equilibrium, the incumbent changes the status quo if and only if condition (1) is satisfied, which means they use the same threshold as in $\hat{\Gamma}$. If η is sufficiently large, the voter elects the challenger independent of the incumbent's decision, and if η is sufficiently small, the voter reelects the incumbent independent of the incumbent's decision. Hence, this type of equilibrium exists for some regions of the parameter space.

In the remaining potential equilibria, the incumbent's probability of reelection depends on whether they change the status quo. One possibility is that in equilibrium the incumbent's probability of reelection is strictly greater when they retain the status quo than when they change it. In this potential equilibrium, the incumbent's utility from retaining the status quo is constant in q_I, while their utility from changing the status quo is increasing in q_I. Hence, they use a threshold strategy and change the status quo when q_I is sufficiently large.

The fact 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.[5] The implication is that there cannot be an equilibrium where

[5] This and additional properties of the voter's posterior belief when the incumbent uses a threshold

the incumbent's probability of reelection is strictly greater when they retain the status quo than when they change it. Hence, this potential equilibrium does not exist.

The other possibility is that in equilibrium, the incumbent's probability of reelection is strictly greater when they change the status quo than when they retain it. I refer to this type of equilibrium as an **equilibrium with beneficial policy change**. As in the previous potential equilibrium, in an equilibrium with beneficial policy change, the incumbent's utility from retaining the status quo is constant in q_I while their utility from changing the status quo is increasing in q_I. Hence, they use a threshold strategy and change 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 $q_I > q_{sq} + y^*$, where $y^* \in [-q_{sq}, \infty)$*

I refer to the incumbent's threshold as their **quality threshold**. In an equilibrium with beneficial policy change, the incumbent's desire for reelection incentivizes additional policy change. This produces distortions relative to the benchmark without uncertainty about the incumbent's type.

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

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

(b) and the expected quality of policy conditional on policy change is strictly lower.

Consider an incumbent in the benchmark model who, given the quality of their replacement policy, is essentially indifferent between changing the status quo and retaining it. Now consider an incumbent with that same replacement policy when there is uncertainty about their type. If changing the status quo increases their probability of reelection, the incumbent has an additional incentive to change the status quo. I refer to this additional policy change as **ability signaling**.

Definition 1. *Let y^*_Γ be the incumbent's quality threshold in Γ. If $q_{sq} + \kappa - (x_I - x_{sq})^2 > 0$ and*

$$y^*_\Gamma < \kappa - (x_I - x_{sq})^2,$$

strategy are derived in the Appendix.

the incumbent engages in ***ability signaling****. Moreover,*

$$D(y^*_\Gamma) \equiv \begin{cases} 0 & \textit{if } q_{sq} + \kappa - (x_I - x_{sq})^2 \leq 0 \\ \kappa - (x_I - x_{sq})^2 - \max\{y^*_\Gamma, 0\} & \textit{if } q_{sq} + \kappa - (x_I - x_{sq})^2 > 0 \end{cases}$$

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

When the incumbent engages in ability signaling, they enact low-quality policies that they would be unwilling to enact without uncertainty about their ability. Essentially, the incumbent is substituting office rents tomorrow for policy quality today.

While ability signaling decreases policy quality conditional on policy change, its effect on overall policy quality depends on the relationship between the cost of policy change and ideological benefit. If the ideological benefit of policy change dominates the cost, then in the benchmark model, the incumbent sometimes changes the status quo to a policy that is relatively lower quality. When the incumbent engages in ability signaling, they make additional, low-quality policy changes. Hence, ability signaling decreases overall policy quality.

However, if the cost of policy change dominates the ideological benefit, then in the benchmark the incumbent sometimes does not change the status quo even when they could do so to a policy of relatively higher quality. In this case, ability signaling may improve overall policy quality since the incumbent makes additional policy changes that may be higher quality than the status quo.

The logic underlying ability signaling is sometimes referred to as the "politician's syllogism":

1. We must do something
2. This is something
3. Therefore, we must do this.[6]

Moreover, this logic is invoked by political pundits and politicians to describe policy-makers' motivations for action (Krugman, 2012; Huppert, 2013).[7] But when does this behavior arise in equilibrium?[8]

[6]The original idea comes from a 1988 episode of the British TV show *Yes, Prime Minister* (Jay and Lotterby, 1988).

[7]Dow and Gorton (1997) develop a theory of delegated asset management with a similar underlying logic. A client cannot distinguish a manager who "actively does nothing" because doing nothing is the right choice for the client from "simply doing nothing." This leads to "noise trading," trades that occur even though the manager has no reason to prefer one asset from the other

[8]In the Section 10.2 of the Appendix, I provide a full characterization of all equilibria.

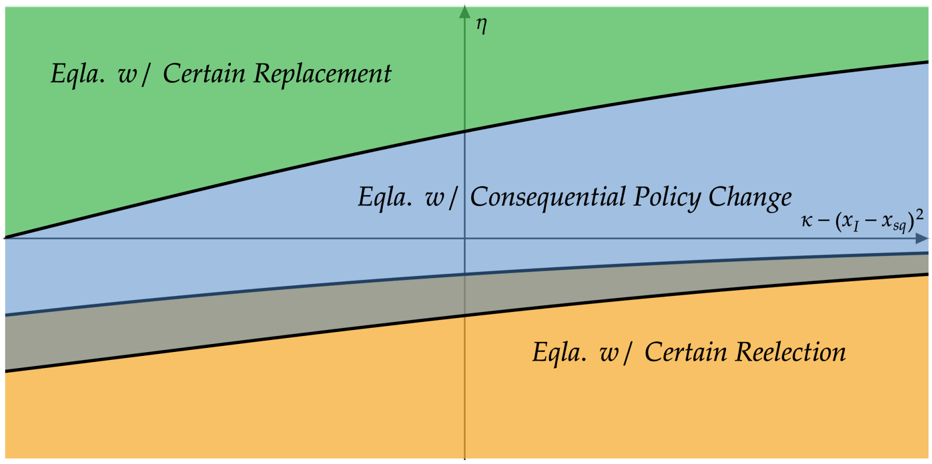

Figure 1: Regions of equilibria for $\kappa - (x_I - x_{sq})^2 > -q_{sq} = -1$, $f(q_I) = e^{-q_I}, g(q_I) = 2e^{-2q_I}, p = \frac{1}{2}$, and $r = 1$

Proposition 2. *An equilibrium with beneficial policy change exists if and only if*

(a) $\eta > 0$ and is not too large, the status quo is sufficiently high quality, and the cost of policy change is sufficiently large relative to the ideological benefit of policy change;

(b) $\eta = 0$;

(c) or $\eta < 0$ and is not too small, the status quo is sufficiently high quality, and the cost of policy change is sufficiently small relative to the ideological benefit of policy change and the office rents

In any other equilibrium, the incumbent's strategy coincides with their strategy in $\hat{\Gamma}$.

When $\eta > 0$, the incumbent ex-ante trails the challenger and will not win reelection if they retain the status quo. But if the incumbent does not trail by too much and the cost of policy change dominates the ideological benefit, changing the status quo is a sufficiently strong signal of high ability that the incumbent wins reelection with positive probability when they change the status quo. As a result, the incumbent engages in ability signaling in equilibrium. Hence, holding the cost of policy change fixed, when trailing the challenger, the incumbent engages in ability signaling on policies that are relatively less ideological.

One might wonder why does the condition for the existence of an equilibrium with beneficial policy change not depend on the office rents when the incumbent trails. The answer is related to the probability the voter reelects the incumbent when they change the status quo. If the incumbent trails, then in an equilibrium with beneficial policy change, the probability the incumbent is reelected given they change the status quo is weakly decreasing in the office rents. Moreover, as r goes to infinity, the probability the incumbent is reelected, given they change the status quo, goes to zero. The implication of this is that what matters for the existence of an equilibrium with beneficial policy change is whether the incumbent would be reelected if there were no office rents, in which case the relevant considerations determining the strength of signal conveyed by policy change are the cost of policy change and the ideological benefit.

When $\eta < 0$, the incumbent ex-ante leads the challenger and is certain to win reelection if they change the status quo. But if the incumbent does not lead by too much and the ideological benefit of policy change and office rents dominate the cost, retaining the status quo is a sufficiently strong signal of low ability, and the incumbent is not reelected when they retain the status quo. In this region of the parameter space, the incumbent engages in ability signaling. In contrast to when the incumbent is trailing, holding the cost of policy change fixed, when leading, the incumbent engages in ability signaling on relatively more ideological policies.

In addition to equilibria with beneficial policy change, there are two types of equilibria where the voter's reelection decision does not depend on the incumbent's decision: **equilibria with certain reelection**, where the incumbent is reelected regardless of whether they change the status quo, and **equilibria with certain replacement**, where the incumbent is replaced whether they change the status quo. Figure 1 depicts the regions of each type of equilibrium when q_{sq} is sufficiently high that the incumbent changes and retains on the equilibrium path.[9] When the incumbent leads, equilibria with beneficial policy change exist simultaneously with equilibria with certain reelection for some parameters.[10] This is depicted by the overlapping blue and orange regions. For these parameters, if the incumbent believes they will only be reelected if they change the status quo, they have an incentive to engage in ability signaling. This makes retaining the status quo a stronger signal of low ability, which means the voter will not reelect the incumbent if they retain the status quo. Hence, this is an equilibrium. On the other hand, if the incumbent believes they will not be reelected if they change the status quo, they don't have an incentive to engage in ability signaling. This means retaining is a weaker signal

[9]When q_{sq} is not sufficiently large, the incumbent always changes the status quo, and there is either an equilibrium with certain replacement or an equilibrium with certain reelection except possibly when $\eta = 0$. For more information, see Section 10.2 of the Appendix.

[10]In this region, a mixed-strategy equilibrium also exists where the voter reelects the incumbent with probability $\rho^* \in (0, 1)$ when the incumbent changes the status quo. See Section 10.2 of the Appendix for more information. When I focus on the equilibrium with minimum policy change, I focus on the equilibrium with certain reelection in this region.

of low ability. Therefore, the voter is willing to reelect the incumbent when they retain. Hence, this is an equilibrium as well.

Proposition 3. *In the equilibrium with minimum policy change, the extent of ability signaling is*

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

(b) weakly increasing in the office rents.

There is a connection between the degree of ex-ante electoral competition, which increases as η gets closer to zero, and ability signaling in the equilibrium with minimum policy change.[11] When there is little uncertainty because the incumbent is either leading by a lot or trailing by a lot, the outcome of the election does not depend on the incumbent's policy change decision. But, as ex-ante electoral competition increases—as η gets closer to zero—policy change becomes electorally relevant because the shift in the voter's posterior induced by policy change or policy retention is enough to decide the election. Because of this, the incumbent has an incentive to engage in ability signaling. Hence, it is when there is a large degree of ex-ante electoral competition that we should see distorted policymaking in the form of additional, low-quality policy change.

There is also a connection between ability signaling and office rents. Since the strength of the signal conveyed by the incumbent's decision to change or retain the status quo is related to incumbent's incentive to change the status quo, one might wonder why the effect of increasing office rents is monotonic. When the incumbent leads the challenger, the effect of increasing office rents is monotonic because the incumbent is always reelected when they change the status quo. While increasing office rents means the incumbent will change the status quo for lower quality policies, the voter still reelects the incumbent.

The intuition is different when the incumbent trails the challenger. In the unique equilibrium when r is especially large, the voter randomizes between reelecting the incumbent and the challenger when the incumbent changes the status quo. This has the following implication

Proposition 4. *When $\eta > 0$, the probability the incumbent is reelected is non-monotonic in the office rents.*

[11] These comparative static results hold if I focus instead on the equilibrium with the highest probability of policy change. What is important is that I focus on a pure strategy equilibrium when one exists simultaneously with a mixed strategy equilibrium.

When the office rents are large, increasing them further leads to a decrease in the probability the incumbent is reelected because in equilibrium, the probability the voter reelects the incumbent conditional on policy change decreases. But when the office rents are small, increasing them leads to an increase in the probability the voter reelects the incumbent. This is because the probability the incumbent is reelected if they change the status quo is constant, but the probability the incumbent changes the status quo increases.

4.3 Implications

Excessive Mutability of Laws Propositions 1 and 2 demonstrate that for some parameters uncertainty about the incumbent's ability combined with their desire for reelection leads to distorted policymaking relative to the benchmark with no uncertainty. Moreover, this distortion comes in the form of additional policy change. This result resonates with empirical work on state legislators that finds that reelection incentives motivate policymaking effort in the form of additional sponsored bills and attendance at more votes (Fouirnaies and Hall, 2022). In this model, this additional policy change may be bad for the voter. If the incumbent's ideal point is sufficiently far from the voter's ideal point or the voter pays a sufficiently large adaptation cost, then even without uncertainty about the incumbent's ability, there is too much policy change from the voter's perspective. In this case, ability signaling decreases the voter's welfare.[12]

Proposition 5. *If the incumbent's ideal point is sufficiently far from the voter's ideal point or the voter's adaptation costs are sufficiently large, the voter's welfare is weakly lower in Γ than in $\hat{\Gamma}$.*

The concern that elections might lead to too much policy volatility has been voiced since at least the founding of the United States. In Federalist 62, James Madison defended six year Senate terms by arguing:

> "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" (Madison, 1788a)

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

Alexis de Tocqueville also feared excessive mutability of laws, stating "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" (Tocqueville, 2003). The crux of Tocqueville and Madison's concern was that variation in the opinions of legislators brought on by frequent elections would result in too much volatility. The benchmark is consistent with this concern since the incumbent's ideological preferences may motivate them to change the status quo more often than the voter if she could choose directly. In particular, in the benchmark where there is no uncertainty about the incumbent's ability, if the incumbent's ideal point is sufficiently far from the voter's ideal point or the voter's adaptation costs are sufficiently large, the incumbent changes the status quo too much from the voter's perspective. But the model with uncertainty about the the incumbent's type illustrates an additional source of potential concern: ability signaling may make the voter even worse off. If the incumbent already changed the status quo too much from the voter's perspective in the benchmark, then uncertainty about the incumbent's type will make the voter even worse off due to ability signaling.

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 or someone who will potentially hire the current superintendent for a different job in the future. It seems to natural to suppose that in this case, $\eta = 0$. That is, the voter's decision depends entirely on the the incumbent's probability of having ability relative to the challenger's. Then Proposition 1 shows that in equilibrium, the incumbent always engages in ability signaling in equilibrium. This 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 quickly move to their next job—leads to "policy churn." To bolster their reputations, superintendents are incentivized to "assume the role of the reformer, initiating a great deal of activity" so they are not perceived as ""do nothing" and replaced by a more promising successor" (Hess, 1999, p.43). The desire to signal ability, leads to ineffective education policy reform.

5 Quality Observability

As Mayor of New York City, Eric Adams has presided over the development of a plan for a "Trash Revolution," which includes mandated trash bins, stronger enforcement of sanitary laws, and new garbage trucks (Lach, 2024; NYC, 2024). The roll out of this policy began in 2022 and will continue into spring 2025, which is a few months before next mayoral election. Since the policy was implemented well before the next election, voters may learn the quality by the time they decide whether to reelect Adams or replace him.

In the model, the voter observes whether the incumbent changes the status quo but does not observe q_I after policy change. But, as illustrated by the Trash Revolution example, depending on when a policy is enacted, voters may learn the quality of the policy before the election. 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. *The extent of ability signaling is weakly decreasing in s. However, the incumbent still engages in ability signaling for some parameters when $s = 1$.*

When the incumbent changes the status quo, they do so to one of two types of policies. The first is a policy that leads to their reelection even if the quality of the policy is revealed. The second is a policy that leads to their reelection only if the quality is not revealed. When it is unlikely the voter learns the quality of the new policy before the election, the distinction between these two types of policies matters little. But when the probability the quality of the new policy is revealed before the election increases, an incumbent for whom the quality of policy they can enact is too low to win reelection if revealed has less incentive to change the status quo.

However, an incumbent who is able to change the status quo to a policy that will win reelection whether the quality is revealed or not has the same incentive to change the status quo regardless of the probability quality is revealed. This is why there may still ability signaling in equilibrium if q_I is certain to be revealed. This case is very similar to Judd (2017), in which a policymaker chooses whether to reveal their ability by replacing the status quo with a policy that perfectly repeals the policymakers ability. In equilibrium, when the status quo has high quality, high-ability incumbents "show off" by implementing policies that are lower quality than the status quo, but that reveal the policymaker is of high enough skill to warrant reelection.

The primary implication of this result is that ability signaling will be more pervasive later on in a policymaker's term when it is less likely the quality of the new policy will be revealed before the election.[13] Another implication of this result is that the expected quality of policy conditional on policy change decreases over the course of a policymaker's term.

Corollary 1. *The expected quality of policy conditional on policy change is weakly decreasing in s.*

One might wonder how the incumbent's ex-ante expected utility depends on s.

Proposition 7. *For some parameters, the incumbent's expected utility is increasing in s. For others, the incumbent's expected utility is decreasing in s.*

Suppose that in equilibrium, for some realizations of q_I, the incumbent changes the status quo and is reelected whether q_I is revealed or not. But for other, lower, realizations of q_I, the incumbent changes the status quo and is only reelected if q_I is not revealed. As s increases, the incumbent's probability of winning reelection if they have one of these lower realizations of q_I decreases. Hence, the incumbent's ex-ante expected utility decreases as s increases.

Consider a different equilibrium where for some realizations of q_I the incumbent changes the status quo and is only reelected if q_I is revealed. And for other, lower, realizations of q_I, the incumbent changes the status quo and is never reelected. As s increases, the incumbent's probability of winning reelection if they have a sufficiently high realization of q_I increases. Hence, the incumbent's expected utility increases as s increases.

These two examples illustrate different countervailing forces. Increasing s means the voter is more likely to learn the incumbent changed the status quo to a low-quality policy, but it also means the voter is more likely to learn the incumbent changed the status quo to a high-quality policy. Depending on which of these effects dominates, the incumbent's expected utility may be increasing or decreasing in s.

The implication of this result is that if the incumbent chooses *when* to develop a policy during their term and then chooses *whether* to change the status quo after learning the

[13] This is similar to results in other models where there is uncertainty about a policymaker such as Canes-Wrone et al. (2001) and Gratton et al. (2015) who find that policymaking distortions are related to the "political horizon."

quality of their replacement policy, in some cases they will want to delay development until later in their term; in others, they will begin development immediately.[14]

6 Endogenous Choice of Ideology

The baseline model assumes the ideology of the incumbent's replacement policy is exogenously fixed at their ideal point. In a setting where the incumbent unilaterally changes the status quo, it may be reasonable to assume they will pursue their preferred policy since they don't require the agreement of any other actors. But, as Proposition 2 illustrates, whether policy change is electorally consequential depends on the strength of the signal conveyed by the incumbent's decision. And a key feature determining the strength of the signal is the ideological benefit of policy change. In light of this, does the incumbent have any incentive to propose a policy that differs from their ideal point? To answer this question, suppose the incumbent publicly chooses $\hat{x} \in \mathbb{R}$, then privately learns q_I, and then chooses whether to retain the status quo or replace it with $\pi_I = (\hat{x}, q_I)$.

Proposition 8. *When $\eta < 0$, there are parameters such that in any equilibrium, the incumbent proposes $\hat{x} \in \{\underline{\hat{x}}^*, \overline{\hat{x}}^*\}$, where $\underline{\hat{x}}^* = x_I - \epsilon$, $\overline{\hat{x}}^* = x_I + \epsilon$, and $\epsilon > 0$.*

Consider an equilibrium of the baseline game where the incumbent leads but only wins reelection if they change the status quo. The reason the incumbent is not reelected if they retain is that retaining the status quo is a sufficiently strong signal of low ability. By proposing a policy that differs from their ideal point, the incumbent reduces their own incentive to change the status quo because doing so will yield a lower ideological benefit of policy change.[15] That is, by proposing a policy that differs from their ideal point, the incumbent commits to a higher quality threshold. This makes retaining the status quo a relatively weaker signal of low ability. Of course, making such a commitment comes at a cost: successful policy change will yield a lower payoff—holding q_I fixed—but in some cases, the electoral benefit outweighs the ideological cost.[16]

[14]The decision of when to develop policy reveals nothing about the incumbent or the quality of their replacement policy because the decision is made before q_I is revealed. In a related but different setting, 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.

[15]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 their ideal point.

[16]When the incumbent trails, there are also parameters such that there are equilibria where the incumbent chooses a policy that differs from their ideal point. However, the parameters such that this type of equilibrium exists are the same parameters such that a mixed strategy equilibrium exists in the baseline.

Whether the incumbent proposes a policy that differs from their ideal point, the particular policy they propose is chosen to be sufficiently far from their ideal point as to make the voter indifferent between the incumbent and challenger. This means the incumbent is indifferent between two policies, one that is sufficiently to the right of their ideal point and one that is sufficiently to the left. Both choices will affect the voter's inference in the same way. But there are many reasons to think the incumbent will choose to break their indifference between the two policies by choosing the policy that is more moderate than their ideal point. If there is a small amount of uncertainty about the incumbent's ideal point, they have an incentive to choose a policy close to the voter's ideal point as in Fearon (1999). Or if the incumbent cares about the longevity of their policy and the challenger has an ideal point that is less than zero, the incumbent has an incentive to choose a policy that is closer to challenger's 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); Hitt et al. (2017), who also study models where policy has quality and ideology. In these models, moderation also emerges in equilibrium because a policymaker needs to secure agreement from another player with a different ideal point to change the status quo. That is, moderation emerges for a Downsian logic—by moving the ideology of a policy closer to the other player's ideal point, the policymaker makes their policy more attractive. The moderation that emerges in this model emerges for a reason entirely unrelated to Downsian logic. The policymaker moderates because it affects the information conveyed by their decision to retain or change the status quo.

Although the incumbent doesn't moderate because the voter prefers a more moderate policy, moderation often makes the voter better off. Denote the game where the incumbent publicly proposes $\hat{x}$ as $\Gamma^{\hat{x}}$. If the conditions for the voter's policy welfare to be weakly lower in Γ relative to $\hat{\Gamma}$ are satisfied, that is the incumbent's ideal point is sufficiently far from the voter's or the voter's adaptation costs are sufficiently large, some moderation improves the voter's policy welfare. But, if the incumbent moderates too much, they may be unwilling to change the status quo when the voter would like them to. When the incumbent trails, they are only reelected if they change the status quo, so the larger the office rents are, the more willing they are to moderate to win. Therefore, a sufficient

Moreover, the mixed strategy equilibrium continues to exist. Hence, I focus on the case where the ability to commit to $\hat{x}$ destroys some of the baseline equilibria.

condition for moderation to make the voter better off when the incumbent trails is for the office rents to be sufficiently small.

7 Vetoes

The baseline model assumes the incumbent can unilaterally change the status quo. But there are many institutional arrangements that require the incumbent to secure the agreement of another policymaker to change the status quo. Moreover, in some of these arrangements, the policymakers are under the shadow of electoral competition. For example, the incumbent might be the majority party in congress that needs the support of the minority party, the challenger, to pass legislation. A natural question to ask is how the challenger behaves when they can block the incumbent's proposed policy changes. I answer this question by studying an extended version of the baseline model, denoted Γ^v, where:

1. Nature draws the policymakers' types and q_I.
2. The majority (incumbent) privately learns q_I.
3. **The majority chooses whether to retain the status quo, $\pi = \pi_{sq}$, or propose a change, $\tilde{\pi} = (x_I, q_I)$.**
4. **If the majority proposes a policy change, the minority (challenger) observes q_I and chooses whether to block the change, $\pi = \pi_{sq}$, or accept it, $\pi = \tilde{\pi}$.**
5. **The voter observes the majority's decision and the minority's blocking decision but not q_I.**
6. **The voter chooses whether to elect the majority or the minority.**

In this extension, the majority's utility function is the same as the incumbent's in the baseline model, and the minority has a similar utility function:

$$u_C(p, q) = -(x_C - x)^2 + q - \mathbb{1}_{\pi \neq \pi_{sq}} \kappa + \mathbb{1}_{e=C} r,$$

where $x_C \leq 0$ is the minority's ideal point.

I also assume

$$(x_C - x_I)^2 - (x_C - x_{sq})^2 \geq -(x_I - x_{sq})^2.$$

This ensures the minority's ideological benefit of policy change is weakly smaller than the majority's.

Lemma 2. *In any equilibrium, the minority uses a threshold strategy and changes the status quo if and only if $q_I > q_{sq} + z^*$, where $z^* \in [-q_{sq}, \infty)$.*

In equilibrium, when the majority proposes a policy, the minority's utility from blocking the change is constant for all q_I. On the other hand, the minority's utility from changing the status quo is increasing in q_I. This implies that in any equilibrium, the minority uses a threshold strategy and accepts proposed policies that are sufficiently high quality. As a result, the voter updates about the majority's ability in a similar way to how she updates in the baseline model: when the minority agrees with a proposed policy, the voter updates positively about the majority's ability, and when the minority blocks a proposed policy, the voter updates negatively about the majority's policy.

Lemma 3. *In any equilibrium,*

(a) the majority proposes a policy for any q_I,

(b) the majority only proposes policies the minority will accept,

(b) or the probability the majority is reelected when they don't propose a policy is the same the probability they are reelected if they propose a policy and the minority blocks it.

Suppose that in equilibrium, for some q_I, the majority doesn't propose a policy, and for other q_I, the majority proposes a policy and the minority blocks the proposal. Furthermore, suppose the majority's probability of reelection differs in these two cases. Then the majority's utility differs in these two cases. This means the incumbent has a a profitable deviation.

The implication of Lemma 3 is that there are potentially many equilibria where the majority proposes some policies knowing the minority will block them and doesn't propose others knowing they would be blocked if they were proposed. But, across these equilibria, the voter responds the same when the majority does not propose a policy and when they do and the minority blocks the policy. In light of this, and to simplify exposition, I focus on equilibria where the majority proposes a policy for any q_I.

Proposition 9. *Fix an equilibrium of Γ. In any corresponding equilibrium in Γ^v,*

(a) the probability of policy change is weakly lower,

(b) and the expected quality of policy conditional on policy change is weakly higher.

Two forces explain why, when the majority needs to secure the minority's agreement, there is less policy change and the expected quality of policy change conditional on policy change has higher. The first is ideological disagreement between the majority and minority. Because the minority receives a weakly smaller ideological benefit from policy change, they are more discerning about the quality of policy that needs to be developed to make policy change worth it. As a result, their presence prevents the majority from making some lower quality policy change that the majority would make in the absence of the minority's veto power. In this way, the minority acts a salutary filter by blocking some low-quality policy changes.

While ideological disagreement between the minority and majority is sufficient to explain why there is less policy change and why the expected quality of policy conditional on policy change has higher in Γ^v, it is not necessary. Even if the minority and majority are completely ideologically aligned, the minority blocks policy change because it electorally beneficial.

Remark 1. *Fix an equilibrium of* Γ*, and suppose* $x_I = x_C$*. In any corresponding equilibrium in* Γ^v*,*

(a) the probability of policy change is weakly lower,

(b) and the expected quality of policy conditional on policy change is weakly higher.

Suppose there is no uncertainty about the majority's type and the minority is essentially indifferent between accepting and blocking a proposed policy change. Now suppose there is uncertainty about the majority's type. If the minority blocks a proposed change, the voter updates negatively about the majority's ability. Hence, in some cases, the minority has an additional incentive to block proposed policy change.

That the majority and minority will disagree on policy despite the absence of ideological disagreement is consistent with empirical and theoretical accounts of the behavior of parties in Congress. Lee (2009) uses roll-call votes to show how an enormous amount of disagreement between the democrats and republicans in the Senate arises on issues that lack a clear ideology. Lee (2009) then argues this disagreement can be explained by four factors: presidential leadership, "good government causes," conflict over control of the legislative agenda, and manipulation of the agenda toward issues the cleave the other party. This model offers a fifth factor explaining why the minority might vote against the majority's proposal even if there is no ideological disagreement, to prevent the voter from updating positively about the majority's ability to develop high-quality policy.

More generally, the minority's incentive to block policy change is consistent with Lee (2016), who argues that when there is uncertainty about which party will be in the majority tomorrow, congressional parties have an incentive to take actions that promote their own image and damage the other party's image. This argument is supported by evidence from staffers and legislators in the minority who are clear that they perceive blocking the majority as advantageous. For example, she quotes a Senate leadership staffer:

> "In the minority, you don't want to fuel the success of the majority... Too much deal making can perpetuate them in the majority," quoted in Lee (2016).

There is a large literature that examines the effect of bipartisanship on voters' perceptions of Congress as an institution and of individual legislators (Harbridge and Malhotra, 2011; Harbridge et al., 2014; Paris, 2017). This model suggests that another fruitful endeavour would be to examine the effect of bipartisanship on voters' perceptions of the quality of policy. An empirical implication of this model is that voters should perceive policies that are passed with bipartisan support as higher quality than those passed on partisan lines.

A key piece of the theory offered in Lee (2016) is that parties worry about their reputation relative to the other party's when there there is ex-ante uncertainty about which party will hold the majority tomorrow. This emerges in the model.

Proposition 10. *In the equilibrium with minimum policy change, the probability of policy change is decreasing in ex-ante electoral competition (as η approaches zero).*

The minority's aversion to policy change for ideological reasons is constant, while their aversion to change for electoral reasons depends on whether or not policy change is electorally relevant.[17] When there a large degree of ex-ante electoral uncertainty about which policymaker will win the election, policy change is relevant to the election outcome. Hence, the minority has the greatest incentive to block policy change. On the other hand, when there is no uncertainty about the election outcome, the minority has no additional incentive to block the majority beyond their ideological incentive.

Whether the minority's veto power improves the voter's utility from policy quality is complicated. Suppose the parameters of the model are such that in any equilibrium

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

of Γ, the incumbent changes the status quo too much compared to the threshold that maximizes the voter's policy utility.[18] If the minority's cost of policy change, the office rents, and the distance between the minority and majority's ideal points are all sufficiently small, then in any equilibrium of Γ^v the voter's utility from policy has higher.

However, as the cost of policy change, the office rents, or the distance between the minority and majority's ideal points grow, the minority blocks additional policy changes. Eventually, in at least some equilibria of Γ^v, the minority blocks policy changes the voter would would like. In this case, whether the voter is better off when the minority can veto depends on whether she prefers policy stability at the expense of not getting some high-quality she likes or if she prefers policy adaptation at the expense of getting some low-quality policies she dislikes. In James Madison's argument for the presidential veto power, the former was better:

> "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. But this objection will have little weight with those who can properly estimate the mischiefs of that inconstancy and mutability in the laws, which form the greatest blemish in the character and genius of our governments... The injury which may possibly be done by defeating a few good laws, will be amply compensated by the advantage of preventing a number of bad ones." (Madison, 1788b)

A final insight from this extension of the baseline model is that the need to secure the minority's agreement to change the status quo may be electorally beneficial for the majority.

Proposition 11. *For some parameters, in the unique equilibrium of* Γ^v*, the probability the majority is reelected has higher than the probability the incumbent is reelected in the unique equilibrium of* Γ*.*

The minority's higher quality threshold means successful policy change is a relatively stronger signal of high ability. The implication of this is that when the majority is behind in Γ^v, they sometimes win reelection when they successfully change the status quo in cases where they wouldn't in Γ. This is depicted in Figure 2, where the region of equilibria with beneficial policy change is larger relative to the baseline model. [19]

[18] See Proposition 5 for more information.

[19] The baseline regions are outlined by the solid line. When the green and blue regions overlap, both types of equilibria exist.

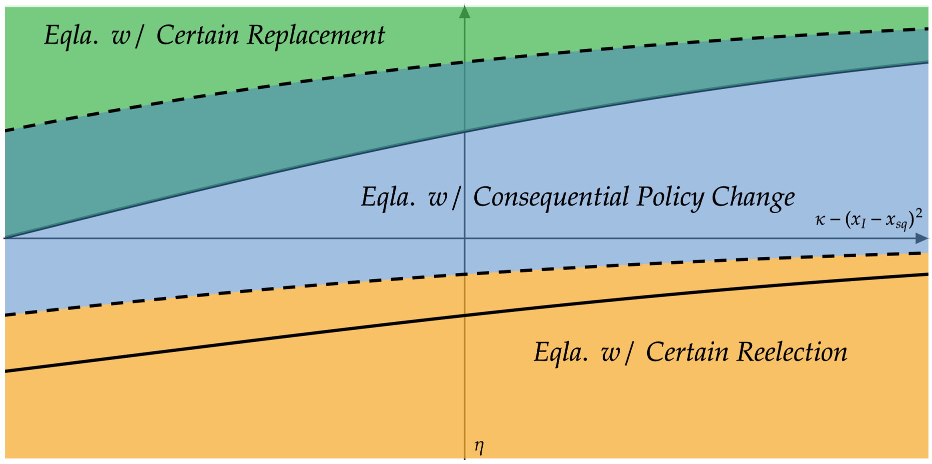

Figure 2: Regions of equilibria for $\kappa - (x_I - x_{sq})^2 > -q_{sq} = -1$, $f(q_I) = e^{-q_I}, g(q_I) = 2e^{-2q_I}, p = \frac{1}{2}, r = 1$, and $x_I = x_C$.

The story is similar when the majority is ahead. The minority's higher quality threshold means unsuccessful policy change is a weaker signal of low ability. The voter recognizes that sometimes policy change does not occur not because the majority could not develop a high-quality policy, but because the minority wanted to block the majority's proposal. This implies that the region of equilibria with beneficial policy change shrinks, which is depicted in Figure 2.

8 Robustness

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

8.1 Incumbent knows their Type

If the incumbent knows their type, then conditional on observing q_I, their utility from retaining the status quo is constant in q_I and does not depend on their type. Moreover, conditional on observing q_I, the incumbent's utility from changing the status quo is increasing in q_I, and also does not depend on their type. This means that in equilibrium, both types of incumbent use threshold strategy. Furthermore, they use the same threshold.

8.2 Election Outcome Affects Policy

Suppose the election outcome affects policy: if the incumbent is reelected, the policy they chose is implemented, and if the challenger is elected, the status quo is retained regardless of the incumbent's choice. Then, in addition to serving as a way of selecting the policymaker who is more likely to be competent, the election is a referendum on the incumbent's chosen policy.

If the incumbent retains the status quo, the election does not affect policy. This means, everything is as in the baseline. If the incumbent changes the status quo, the voter's expected utility from reelecting the incumbent is increasing in the incumbent's quality threshold because a higher threshold means higher expected quality of policy conditional on policy change and a higher probability the incumbent has high ability. This is the same as in the baseline, where the voter's expected utility of reelecting the incumbent is increasing in the incumbent's threshold. Hence, there are equilibria with beneficial policy change, certain reelection, and certain replacement.

9 Conclusion

I studied a model of policymaking when there is uncertainty about the policymaker's ability to develop high-quality policy. This uncertainty and the policymaker's desire for reelection leads to ability signaling.

Two natural extensions of this model come to mind. First, one could endogenize the status quo by studying a model with two periods of replacement policy change. In the first period, the incumbent chooses whether to implement a policy or retain the status quo, and then the voter chooses whether to retain the incumbent or replace them with a challenger without observing the quality of the incumbent's policy. In the second, the winner of the election chooses whether to retain the status quo inherited from the previous period or to change it after learning the quality of their replacement policy. This is similar to the extension described in Section 8.2, 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 the status quo, and she doesn't observe the quality of the status quo when she votes.

Second, one could allow the incumbent to choose when, if at all, to change the status quo after learning the quality of their replacement policy. In Section 5, I showed that if the incumbent chooses when to develop a replacement policy and then chooses whether to change the status quo, they sometimes delay development until the end of their term, and they sometimes start development immediately. When the incumbent chooses when to develop a policy and then whether to change the status quo, the timing conveys no information about quality. But if the incumbent chooses when, if at all, to change the status quo after learning the replacement policy's quality, things are more complicated. One might think that if the incumbent can only enact a low-quality policy, they wait until the end of their term to change the status quo to minimize the probability the quality is revealed. But then waiting to change the status quo will convey that the quality of policy is low.

References

(2024): "Mayor Adams, Sanitation Commissioner Tisch Unveil First-Ever Official NYC Bin for Trash Pick up, Release Timeline for Residential Containerization of all one to Nine Unit Buildings," Https://www.nyc.gov/office-of-the-mayor/news/530-24/mayor-adams-sanitation-commissioner-tisch-first-ever-official-nyc-bin-trash-pick-up-/0.

Ascencio, S. and M. B. Gibilisco (2015): "Endogenous Issue Salience in an Ownership Model of Elections," Tech. rep., Working Paper.

Ashworth, S. and K. W. Shotts (2010): "Does informative media commentary reduce politicians' incentives to pander?" *Journal of Public Economics*, 94, 838–847.

Austen-Smith, D. and J. Banks (1989): "Electoral accountability and incumbency," in *Models of strategic choice in politics*, ed. by P. Ordeshook, University of Michigan Press Ann Arbor.

Banks, J. S. and R. K. Sundaram (1993): "Adverse selection and moral hazard in a repeated elections model," in *Political Economy: Institutions, Competition, and Representation*, ed. by H. M. J. Barnett, William A. and N. J. Schofield, Cambridge University Press.

Beckmann, M. N. and J. Godfrey (2007): "The policy opportunities in presidential honeymoons," *Political Research Quarterly*, 60, 250–262.

Bils, P. (2023): "Overreacting and Posturing: How Accountability and Ideology Shape Executive Policies," *Quarterly Journal of Political Science*, 18, 153â–182.

Binder, S. A. and F. Maltzman (2002): "Senatorial delay in confirming federal judges, 1947-1998," *American Journal of Political Science*, 190–199.

Brooks, S. (2023): "Uncovering Coivd Loan Cons," *Medium*, `https://www.nbcnews.com/politics/justice-department/biggest-fraud-generation-looting-covid-relief-program-known-ppp-n1279664`.

Canes-Wrone, B., M. C. Herron, and K. W. Shotts (2001): "Leadership and pandering: A theory of executive policymaking," *American Journal of Political Science*, 532–550.

Cho, I.-K. and D. M. Kreps (1987): "Signaling games and stable equilibria," *The Quarterly Journal of Economics*, 102, 179–221.

Collins, S. (2017): "Senator Collins Opposes Graham-Cassidy Health Care Bills," Https://www.collins.senate.gov/newsroom/senator-collins-opposes-graham-cassidy-health-care-bills.

Dow, J. and G. Gorton (1997): "Noise trading, delegated portfolio management, and economic welfare," *Journal of Political Economy*, 105, 1024–1050.

Drazen, A. (2000): "The political business cycle after 25 years," *NBER macroeconomics annual*, 15, 75–117.

Fearon, J. D. (1999): "Electoral accountability and the control of politicians: selecting good types versus sanctioning poor performance," *Democracy, accountability, and representation*, 55–97.

Fouirnaies, A. and A. B. Hall (2022): "How do electoral incentives affect legislator behavior? Evidence from US state legislatures," *American Political Science Review*, 116, 662–676.

Fox, J. and R. Van Weelden (2012): "Costly transparency," *Journal of Public Economics*, 96, 142–150.

Friedman, T. L. (2012): "Hope and Change: Part 2," *The New York Times*, https://www.nytimes.com/2012/11/07/opinion/friedman-hope-and-change-part-two.html.

Frostenson, S. (2017): "Graham-Cassidy health care bill: What you need to know," *Politico*, https://www.politico.com/interactives/2017/graham-cassidy-health-care-bill-what-you-need-to-know/.

Gersbach, H., M. O. Jackson, P. Muller, and O. Tejada (2023): "Electoral competition with costly policy changes: A dynamic perspective," *Journal of Economic Theory*, 214, 105716.

Gersbach, H. and O. Tejada (2018): "A reform dilemma in polarized democracies," *Journal of Public Economics*, 160, 148–158.

Gibbs, D. (2024): "Hedging, Pandering, and Gambling: a Model of Policy Timing," *Working Paper*.

Gratton, G., L. Guiso, C. Michelacci, and M. Morelli (2015): “From weber to kafka: Political activism and the emergence of an inefficient bureaucracy,” *The American Economic Review*.

Griffin, J. M., S. Kruger, and P. Mahajan (2023): “Did FinTech lenders facilitate PPP fraud?” *The Journal of Finance*, 78, 1777–1827.

Harbridge, L. and N. Malhotra (2011): “Electoral incentives and partisan conflict in Congress: Evidence from survey experiments,” *American Journal of Political Science*, 55, 494–510.

Harbridge, L., N. Malhotra, and B. F. Harrison (2014): “Public preferences for bipartisanship in the policymaking process,” *Legislative Studies Quarterly*, 39, 327–355.

Hess, F. M. (1999): *Spinning wheels: The politics of urban school reform*, Brookings Institution Press.

Hirsch, A. V. and K. W. Shotts (2012): “Policy-Specific Information and Informal Agenda Power,” *American Journal of Political Science*, 56, 67–83.

——— (2015): “Competitive policy development,” *American Economic Review*, 105, 1646–1664.

——— (2018): “Policy-development monopolies: adverse consequences and institutional responses,” *The Journal of Politics*, 80, 1339–1354.

Hitt, M. P., C. Volden, and A. E. Wiseman (2017): “Spatial models of legislative effectiveness,” *American Journal of Political Science*, 61, 575–590.

Huang, T. and S. M. Theriault (2012): “The Strategic Timing behind Position-taking in the US Congress: A Study of the Comprehensive Immigration Reform Act,” *The Journal of Legislative Studies*, 18, 41–62.

Hummel, P. (2013): “Resource allocation when different candidates are stronger on different issues,” *Journal of Theoretical Politics*, 25, 128–149.

Huppert, J. (2013): “House of Commons Debate,” Https://www.theyworkforyou.com/debates/?id=2013-06-12a.389.0.

Jay, Anthony, L. J. (Writer). and S. (Director). Lotterby (1988): “Yes, Prime Minister - Power to the People,” .

Judd, G. (2017): "Showing off: promise and peril in unilateral policymaking," *Quarterly Journal of Political Science*, 12, 241–268.

Kartik, N., F. Squintani, K. Tinn, et al. (2015): "Information revelation and pandering in elections," *Columbia University, New York*, 36, 8.

Krasa, S. and M. Polborn (2010): "Competition between specialized candidates," *American Political Science Review*, 104, 745–765.

Krugman, P. (2012): "The "Yes, Minister" Theory of the Medicare Age," *The New York Times*, https://archive.nytimes.com/krugman.blogs.nytimes.com/2012/12/12/the-yes-minister-theory-of-the-medicare-age/.

Lach, E. (2024): "The Ex-N.Y.P.D. Official Trying to Tame New York's Trash," *The New Yorker*, https://www.newyorker.com/magazine/2024/04/15/the-ex-nypd-official-trying-to-tame-new-yorks-trash.

Lee, F. E. (2009): *Beyond ideology: Politics, principles, and partisanship in the US Senate*, University of Chicago Press.

——— (2016): *Insecure majorities: Congress and the perpetual campaign*, University of Chicago Press.

Loeper, A. and W. Dziuda (2024): "Voters and the trade-off between policy stability and responsiveness," *Journal of Public Economics*, 232, 105093.

Londregan, J. B. (2000): *Legislative institutions and ideology in Chile*, Cambridge University Press.

Madison, J. (1788a): "The Federalist Papers, No. 62," .

——— (1788b): "The Federalist Papers, No. 73," .

McCarty, N. M. (1997): "Presidential reputation and the veto," *Economics & Politics*, 9, 1–26.

Milgrom, P. R. (1981): "Good news and bad news: Representation theorems and applications," *The Bell Journal of Economics*, 380–391.

Nordhaus, W. D. (1975): "The political business cycle," *The review of economic studies*, 42, 169–190.

Ostrander, I. (2016): "The logic of collective inaction: Senatorial delay in executive nominations," *American Journal of Political Science*, 60, 1063–1076.

Paris, C. (2017): "Breaking down bipartisanship: when and why citizens react to cooperation across party lines," *Public Opinion Quarterly*, 81, 473–494.

Petrocik, J. R. (1996): "Issue ownership in presidential elections, with a 1980 case study," *American journal of political science*, 825–850.

Stokes, D. E. (1963): "Spatial models of party competition," *American political science review*, 57, 368–377.

Thrower, S. (2018): "Policy disruption through regulatory delay in the Trump administration," *Presidential Studies Quarterly*, 48, 517–536.

Tocqueville, A. (2003): *Democracy in America: And two essays on America*, Penguin UK.

10 Appendix: Main Results

10.1 Proof of Lemma 1

Proof. Suppose in equilibrium the incumbent is reelected with probability $\gamma^* \in [0,1]$ if they retain the status quo and with probability $\lambda^* \in [0,1]$ if they change it. Note that λ and γ do not depend on q_I since the voter does not observe q_I before the election in either case. In this equilibrium, the incumbent changes the status quo if and only if

$$q_I - \kappa + \lambda r > q_{sq} + \underbrace{\kappa - (x_I - x_{sq})^2 + (\gamma^* - \lambda^*)r}_{y^*}. \tag{2}$$

Hence, the incumbent uses a threshold strategy and changes the status quo if and only if $q_I > q_{sq} + y^*$. ■

10.2 Proof of Propositions 1 and 2

I begin by proving Lemmas 4 and 5, which I use to fully characterize the equilibria of the model in Propositions 12, 13, and 14 under the assumption that off the equilibrium path,

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

Then, I show the assumed off the path belief is the off the path belief in any perfect Bayesian equilibrium that survives D1 in Proposition 15. Propositions 1 and 2 follow immediately.

Lemma 4. *If the incumbent uses a threshold such that they change the status quo if and only if $q_I > q_{sq} + y$, 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) $\Pr(\tau_I = \overline{\theta}|\pi = \pi_{sq}) < p$ *and* $\Pr(\tau_I = \overline{\theta}|\pi = \pi_{sq}, y)$ *is increasing in y.*

Proof. $\Pr(\tau_I = \overline{\theta}|\pi = \pi_{sq}) = \frac{1}{1+\frac{1-p}{p}\frac{G(q_{sq}+y^*)}{F(q_{sq}+y^*)}}$. Differentiating:

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

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 $\frac{f(x)}{g(x)} > \frac{F(x)}{G(x)}$. Hence, $\Pr(\tau_I = \overline{\theta}|\pi = \pi_{sq})$ is increasing in y^*.

Rearranging, $\Pr(\tau_I = C|\pi_1 = \pi_{sq}) = \frac{F(q_{sq}+y^*)p}{F(q_{sq}+y^*)p+G(q_{sq}+y^*)(1-p)}$, which is less than p if

$$F(q_{sq}+y^*) < F(q_{sq}+y^*)p + G(q_{sq}+y^*)(1-p),$$

which is immediate due to MLRP implying first order stochastic dominance (FOSD). This proves the first result in the proposition.

$\Pr(\tau_I = \overline{\theta}|\pi = \pi_I) = \frac{1}{1+\frac{1-p}{p}\frac{(1-G(q_{sq}+y^*))}{(1-F(q_{sq}+y^*))}}$. Differentiating with respect to y^*,

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

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. Hence, $\Pr(\tau_I = \overline{\theta}|\pi = \pi_I)$ is increasing in y^*.

Rearranging, $\Pr(\tau_I = C|\pi_1 = \pi_{sq}) = \frac{(1-F(q_{sq}+y^*))p}{(1-F(q_{sq}+y^*))p+(1-G(q_{sq}+y^*))(1-p)}$. This is less than p if

$$(1-F(q_{sq}+y^*)) > p(1-F(q_{sq}+y^*)) + (1-p)(1-G(q_{sq}+y^*)).$$

This is immediate due to MLRP implying FOSD. This proves the second result in the proposition. ■

Lemma 5. *(a) If $\eta < 0$ and $p+\eta \leq \underline{L}$,* $\Pr(\tau_I = \overline{\theta}|\pi = \pi_{sq}, y^*) > p+\eta$ *for all*

y, otherwise, there exists $\underline{y} \in (-q_{sq}, \infty)$ such that for all $y \geq \underline{y}$, $\Pr(\tau_I = \overline{\theta}|\pi = \pi_{sq}, y) \geq p + \eta$.

(b) If $\eta > 0$ and $p + \eta \geq \overline{L}$, $\Pr(\tau_I = \overline{\theta}|\pi = \pi_I, y^*) < p + \eta$ for all y, otherwise, there exists $\overline{y} \in (-q_{sq}, \infty)$ such that for all $y \geq \overline{y}$, $\Pr(\tau_I = \overline{\theta}|\pi = \pi_I) \geq p + \eta$.

Proof. Suppose $\eta < 0$. Then

$$\lim_{y \to -q_{sq}} \frac{1}{1 + \frac{1-p}{p}\frac{g(q_{sq}+y)}{g(q_{sq}+y)}} = \frac{1}{1 + \frac{1-p}{p}\frac{g(0)}{f(0)}} \equiv \underline{L}$$

By Lemma 4, $\Pr(\tau_I = C|\pi = \pi_{sq}, y)$ is strictly increasing in y. Hence, if $p + \eta > \underline{L}$, there exists a unique $\underline{y} \in (-q_{sq}, \infty)$ such that $\Pr(\tau_I = \overline{\theta}|\pi = \pi_{sq}, y) = p + \eta$, and for all $y \geq \underline{y}$, $\Pr(\tau_I = \overline{\theta}|\pi = \pi_{sq}, y) \geq p + \eta$. Otherwise, if $p + \eta \leq \underline{L}$, $\Pr(\tau_I = C|\pi = \pi_{sq}, y) > p + \eta$ for all $y \in (-q_{sq}, \infty)$.

Now suppose $\eta > 0$. By Lemma 4, $\Pr(\tau_I = \overline{\theta}|\pi = \pi_I)$ is strictly increasing in y. Moreover, $\Pr(\tau_I = C|\pi = \pi_I, y)$ is a probability so it is bounded above by one. Hence, there is a least upper bound of $\Pr(\tau_I = C|\pi = \pi_I, y)$, and that is the limit as $y \to \infty$. Call this least upper bound $\overline{L}$. Hence, if $p+\eta < \overline{L}$ there exists $\overline{y}$ such that $\Pr(\tau_I = C|\pi = \pi_I, y) \geq p + \eta$ for all $y \geq \overline{y}$. Otherwise, if $p + \eta \geq \overline{L}$, $\Pr(\tau_I = C|\pi = \pi_I, y^*) < p + \eta$ for all y. ∎

From Lemma 5, there are two distinct cases. If

$$\eta \in (-\infty, \underline{L} - p] \cup [\overline{L} - p, \infty). \tag{3}$$

$\eta \neq 0$ and $\underline{y}$ and $\overline{y}$ do not exist. In this case, the incumbent's choice does not affect the election outcome. If (3) is not satisfied, the incumbent's choice may affect the election.

Proposition 12. *If $\eta < 0$,*

(a) and (3) is satisfied, there is a unique equilibrium where the incumbent changes the status quo if and only if (6) is satisfied, and is always reelected.

Otherwise, if $\eta < 0$ and (3) is not satisfied:

(b) and $\underline{y} \geq \kappa - (x_I - x_{sq})^2 - r$, there is an equilibrium where the incumbent changes the status quo if and only if (8) is satisfied, and is reelected if and only if they change the status quo.

(c) and $\underline{y} \leq \kappa - (x_I - x_{sq})^2$, there is an equilibrium where the incumbent changes the status quo if and only if (4) is satisfied and is always reelected.

(d) *and* $\underline{y} \in (\kappa - (x_I - x_{sq})^2 - r, \kappa - (x_I - x_{sq})^2)$*, there is an equilibrium where the incumbent changes the status quo if and only if (9) is satisfied, and is reelected with probability one if they change the status quo and with probability* $\rho^* \in (0, 1)$ *if they retain the status quo.*

Proof. Suppose $\eta < 0$ and (3) is satisfied. In any equilibrium the incumbent wins reelection whether they retain the status quo or change it. Hence, the incumbent changes the status quo if and only if

$$q_I > q_{sq} + \kappa - (x_I - x_{sq})^2. \tag{4}$$

If

$$0 > q_{sq} + \kappa - (x_I - x_{sq})^2, \tag{5}$$

retaining the status quo is off the equilibrium path. By assumption, the voter believes the incumbent has high ability with probability μ if the incumbent deviates. Because (3) is satisfied, the incumbent will still win reelection if they deviate off the equilibrium path. Hence, the incumbent does not deviate if (4) is satisfied, which holds for $q_I = 0$, and hence for all q_I. This shows (a) in the proposition, in which the incumbent changes the status quo if and only if

$$q_I > \max\{q_{sq} + \kappa - (x_I - x_{sq})^2, 0\}. \tag{6}$$

For the remainder of the proof, Suppose $\eta < 0$ and (3) is not satisfied which implies $\underline{y}$ exists. If $y^* < \underline{y}$, the incumbent is reelected if and only if they change the status quo. Therefore, the incumbent changes the status quo if and only if

$$q_I > q_{sq} + \kappa - (x_I - x_{sq})^2 - r. \tag{7}$$

For this equilibrium to exist, it must be that $\kappa - (x_I - x_{sq})^2 - r < \underline{y}$. If $0 > q_{sq} + \kappa - (x_I - x_{sq})^2 - r$, retaining is off the equilibrium path. Given the voter's assumed off the path belief, if the incumbent deviates, they will not be reelected. Hence, the incumbent will not deviate as long as (7) is satisfied, which holds for $q_I = 0$, and hence for all q_I. This shows (b) in the proposition, in which the incumbent changes the status quo if and only if

$$q_I > \max\{q_{sq} + \kappa - (x_I - x_{sq})^2 - r, 0\} \tag{8}$$

If $y^* > \underline{y}$, the incumbent is reelected whether they retain or change the status quo. Therefore, they change the status quo if and only if (4) is satisfied. For this equilibrium to exist, it must be that $\kappa - (x_I - x_{sq})^2 > \underline{y}$. By definition, $\underline{y} > -q_{sq}$. This, and the fact that $\kappa - (x_I - x_{sq})^2 - r > \underline{y}$ implies the incumbent retains and changes the status quo on the equilibrium path in this equilibrium. This (c) in the proposition

Finally, suppose $y^* = \underline{y}$. Then, the voter reelects the incumbent if they change 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 they retain. Then the incumbent changes the status quo if

$$q_I > q_{sq} + \kappa - (x_I - x_{sq})^2 + (\rho^* - 1)r. \tag{9}$$

For the voter to be indifferent, it must be that

$$\kappa - (x_I - x_{sq})^2 + (\rho^* - 1)r = \underline{y},$$

which implies $\rho^* \equiv \frac{\underline{y}-\kappa+(x_I - x_{sq}^2)}{r} + 1$. Hence, there is a mixed strategy equilibrium. For such an equilibrium to exist, it must be that $\frac{\underline{y}-\kappa+(x_I - x_{sq}^2)}{r} + 1 \in [0, 1]$. That is,

$$\underline{y} \in [\kappa - (x_I - x_{sq})^2 - r, \kappa - (x_I - x_{sq})^2]$$

This shows (d) in the proposition. Moreover, since $\underline{y} > -q_{sq}$ and $y^* = \underline{y}$, the incumbent changes and retains on the equilibrium path.

Note, when $\underline{y} \in [\kappa - (x_I - x_{sq})^2 - r, \kappa - (x_I - x_{sq})^2]$, multiple equilibria exist. Otherwise, there is a unique equilibrium. ■

Proposition 13. *If $\eta > 0$,*

(a) and (3) is satisfied, there is a unique equilibrium where the incumbent changes the status quo if and only if (6) is satisfied, and is never reelected.

Otherwise, if $\eta > 0$ and (3) is not satisfied,

(b) and $\overline{y} \geq \kappa - (x_I - x_{sq})^2$, there is a unique equilibrium where the incumbent changes the status quo if and only if (6) is satisfied, and is never reelected.

(c) *and $\overline{y} < \kappa - (x_I - x_{sq})^2$, there is a unique equilibrium where the incumbent changes the status quo if and only if (10) is satisfied, and is reelected with probability $\rho^* \in (0, 1]$ if they change the status quo.*

Proof. Suppose $\eta > 0$ and (3) is satisfied. Hence, $\overline{y}$ does not exist. In any equilibrium the incumbent will not be reelected whether they change or retain the status quo. Hence, they change the status quo if and only if (4) is satisfied. If (5) is satisfied, retaining is off the equilibrium path. By assumption, if the incumbent deviates off the equilibrium path, the voter believes the incumbent has high ability with probability μ. Because the incumbent trails, they will not win reelection if the deviate. Hence, the incumbent will not deviate as long as (4) is satisfied, which holds for all q_I. This shows (a) in the proposition.

For the remainder of the proof suppose $\eta > 0$ and (3) is not satisfied. If $y^* < \overline{y}$, the incumbent is never reelected. Then the incumbent changes the status quo if (4) is satisfied. For this equilibrium to exist, it must be that $\kappa - (x_I - x_{sq})^2 < \overline{y}$. If (5) is satisfied, retaining is off the equilibrium path. Given the assumed off the path beliefs and the assumption that the incumbent trails, the incumbent will not be reelected if they deviate. Hence, the incumbent will not deviate as long as (4) is satisfied, which holds for all q_I. This shows (b) in the proposition.

If $y^* > \overline{y}$, the incumbent is reelected with probability one when they change the status quo but not if they retain it. Then the incumbent changes the status quo if and only if (7) is satisfied. For this equilibrium to exist, it must be that $\kappa - (x_I - x_{sq})^2 - r > \overline{y}$. Since $\overline{y} > -q_{sq}$, in this equilibrium, the incumbent changes and retains on the equilibrium path.

Finally, suppose $y^* = \overline{y}$. In this case, the voter is indifferent between electing the challenger and the incumbent when the incumbent changes the status quo and, hence, reelects the incumbent with probability ρ^*. Given ρ^*, the incumbent changes the status quo if and only if

$$q_I > q_{sq} + \kappa - (x_I - x_{sq})^2 - \rho^* r. \tag{10}$$

For the voter to be indifferent, it must be that

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

which implies $\rho^* \equiv \frac{\kappa - (x_I - x_{sq})^2 - \overline{y}}{r}$. $\rho^* \in [0, 1]$ for

$$\overline{y} \in [\kappa - (x_I - x_{sq})^2 - r, \kappa - (x_I - x_{sq})^2]$$

Hence, a mixed strategy equilibrium exists for $\overline{y} \in [\kappa - (x_I - x_{sq})^2 - r, \kappa - (x_I - x_{sq})^2]$. This shows (c) in the proposition.

■

Proposition 14. *If $\eta = 0$.*

(a) and if $q_{sq} + \kappa - (x_I - x_{sq})^2 - r \geq 0$, there is a unique equilibrium where the incumbent changes the status quo if and only if (7) is satisfied, and is reelected if and only if they change the status quo;

(b) otherwise, a continuum of equilibria exist where the incumbent changes the status quo for all q_I and is reelected with probability $\rho^* \in [0, 1]$.

Proof. Suppose $\eta = 0$. And suppose the incumbent changes and retains the status quo on the equilibrium path. Hence, for any $y^* \in (q_{sq}, \infty)$, the incumbent is reelected when they change the status quo and is not reelected when they retain the status quo. Hence, the incumbent changes the status quo if and only if (7) is satisfied. This is an equilibrium as long as $q_{sq} + \kappa - (x_I - x_{sq})^2 - r \geq 0$.

Now suppose the incumbent changes the status quo for any q_I. Then, in equilibrium, the posterior probability the incumbent has high ability equals the prior and the voter reelects the incumbent with probability ρ^*. Therefore, the incumbent lacks a profitable deviation if $0 > q_{sq} + \kappa - (x_I - x_{sq})^2 - r\rho^*$. That is, if there is a ρ^* such that the condition is satisfied, there is an equilibrium where the incumbent changes the status quo for any q_I.

■

Proposition 15. *In any equilibrium surviving D1,*

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

Proof. By Lemma 1, in any equilibrium 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.

Suppose there is an equilibrium where the incumbent changes the status quo for all q_I. Let $\xi \in \mathbb{R}_+$ be this arbitrary incumbent's type. Note that the type does not include whether the incumbent has high ability because the incumbent does not observe this. Define $D(\xi)$ as the set of reelection probabilities for which type ξ strictly prefers deviating to retaining the status quo over receiving their equilibrium payoff on the path, and define

$D_0(\xi)$ as the set of reelection probabilities for which type ξ is indifferent between retaining the status quo and receiving their equilibrium payoff. D1 requires the voter putting probability zero on a type ξ deviating if there exists another type ξ' such that $D(\xi) \cup D_0(\xi) \subseteq D(\xi')$ (Cho and Kreps, 1987).

Let $\lambda \in [0, 1]$ be the probability the voter elects the incumbent on the path and let $\omega \in [0, 1]$ be the probability the voter elects the incumbent when they deviate off the path. Then, an incumbent of type ξ will deviate off the path if

$$\frac{\xi - q_{sq} + \lambda r - \kappa + (x_I - x_{sq})^2}{r} < \omega.$$

It that the set of ω such that the incumbent deviates is weakly decreasing in ξ.

There are three cases to consider. First, suppose $0 > q_{sq} + \kappa - (x_I - x_{sq})^2 + (1 - \lambda)r$. Then for any $\omega \in [0, 1]$, an incumbent with type $\xi = 0$ will not deviate. The incumbent's utility on the path is increasing in q_I, hence no types deviate.

Next, suppose $0 \in (q_{sq} + \kappa - (x_I - x_{sq})^2 + \lambda r, q_{sq} + \kappa - (x_I - x_{sq})^2 + (1 - \lambda)r)$. Therefore,

$$\frac{-q_{sq} + \lambda r - \kappa + (x_I - x_{sq})^2}{r} > 0.$$

Thus, an incumbent of type $\xi = 0$ deviates for some realizations of q_I. Since the incumbent's utility on the path is increasing in q_I, an incumbent of type $\xi = 0$ 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 $\xi = 0$. This induces the following posterior

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

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

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

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

10.3 Proof of Proposition 3

Proof. **First Result:** η

I first prove a preliminary lemma.

Lemma 6. *$\underline{y}$ and $\overline{y}$ are increasing in η.*

Proof. $y = \overline{y}$ solves

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

By Lemma 4, the LHS is increasing in y. Hence, if η increases, $\overline{y}$ increases to maintain equality. By an identical argument to above, the same can be shown for $\underline{y}$. ■

If (5) or (3) either $\underline{y}$ and $\overline{y}$ do not exist or the incumbent changes the status quo for all q_I absent ability signaling. Hence, $D(y^*_\gamma) = 0$ for all η.

For the remainder of the proof for this result, suppose neither (5) nor (3) are satisfied. Then $\underline{y}$ and $\overline{y}$ exist and the incumbent retains on the equilibrium path. Suppose $\eta < 0$, and fix an equilibrium with minimum policy change. In particular, this means that if $\underline{y} \in [\kappa - (x_I - x_{sq})^2 - r, \kappa - (x_I - x_{sq})^2]$, the incumbent changes the status quo if and only if (4) is satisfied and is reelected whether they change the status quo or not. Then Proposition 12 and Lemma 6 imply $D(y^*_\gamma)$ is weakly increasing in η and is always weakly smaller than $\min\{r, q_{sq} + \kappa - (x_I - x^2_{sq})\}$.

Now suppose $\eta = 0$. Then $D(y^*_\gamma) = \min\{r, q_{sq} + \kappa - (x_I - x^2_{sq})\}$.

Finally, suppose $\eta > 0$. Then $\overline{y}$ exists. When $\eta > 0$, there is always a unique equilibrium. Hence, the set of equilibria and the equilibrium with minimum policy change are identical. Then Proposition 13 and Lemma 6 imply $D(y^*_\gamma)$ is weakly decreasing in in η and is always weakly smaller than $\min\{r, q_{sq} + \kappa - (x_I - x^2_{sq})\}$.

Second Result: r

If (5) or (3) either $\underline{y}$ and $\overline{y}$ do not exist or the incumbent changes the status quo for all q_I absent ability signaling. Hence, $D(y^*_\gamma) = 0$ for all r. For the remainder of the proof suppose neither (5) nor (3) are satisfied.

Suppose $\eta > 0$. Then $\overline{y}$ exists. Then Proposition 13 implies $D(y^*_\Gamma)$ is weakly increasing in r.

Next, consider $\eta = 0$. Then Proposition 14 implies $D(y^*_\Gamma)$ is weakly increasing in r.

Finally, suppose $\eta < 0$, and fix an equilibrium with minimum policy change. In particular, this means that if $\underline{y} \in [\kappa - (x_I - x_{sq})^2 - r, \kappa - (x_I - x_{sq})^2]$, the incumbent changes the status quo if and only if (4) is satisfied and is reelected whether they change the status quo or not. Then $\underline{y}$ exists. Proposition 13 implies $D(y^*_\Gamma)$ is weakly increasing in r.

■

10.4 Proof of Proposition 4

Proof. Suppose $\eta > 0$. If $\kappa - (x_I - x_{sq})^2 - r > \overline{y}$, the probability the incumbent is reelected is $p(1 - F(q_{sq} + \kappa - (x_I - x_{sq})^2) - r) + (1-p)(1 - G(q_{sq} + \kappa - (x_I - x_{sq})^2) - r)$. This is clearly increasing in r.

Now consider r sufficiently large that $\overline{y} \in (\kappa - (x_I - x_{sq})^2 - r, \kappa - (x_I - x_{sq})^2)$. Then the probability that the incumbent is reelected is $p(1 - F(\overline{y}) + (1-p)(1 - G(\overline{y})\rho^*$, where $\rho^* = \frac{\overline{y} - \kappa + (x_I - x_{sq})^2}{r}$. Since ρ^* is decreasing in r, the probability the incumbent is reelected is decreasing in r. ■

10.5 Proof of Proposition 5

Proof. The voter's utility from policy is maximized when the incumbent changes the status quo if and only if $q_I > \max\{q_{sq} - x_{sq}^2 + x_I^2 + \xi, 0\}$. In $\hat{\Gamma}$, the incumbent changes the status quo if and only if $q_I > \max\{q_{sq} + (x_I - x_{sq})^2 - \kappa, 0\}$. Therefore, the incumbent changes the status quo too much from the voter's perspective if

$$\kappa - (x_I - x_{sq})^2 < \xi - x_{sq}^2 + x_I^2. \tag{11}$$

(11) is satisfied if ξ is sufficiently large or if x_I is sufficiently large.

Suppose (11) is satisfied. By Proposition 1, in any equilibrium of Γ, the incumbent probability of policy change is weakly higher. Hence, the voter's utility from policy is weakly lower. ■

10.6 Proof of Proposition 6

I begin by proving Lemma 7, which I use to provide a full characterization of the equilibria when q_I is revealed with probability $s \in [0, 1]$ if the incumbent changes the status quo in Propositions 16, 17, and 18. Proposition 6 follows.

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

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

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

$$p + \eta \in \left(\frac{1}{1 + \frac{1-p}{p} \frac{g(0)}{f(0)}}, \lim_{q_I \to \infty} \frac{1}{1 + \frac{1-p}{p} \frac{g(q_I)}{f(q_I)}} \right),$$

$\hat{q}_I$ exists. Note this condition can be rearranged to obtain (3). Define $\hat{y} \equiv \hat{q}_I - q_{sq}$.

Lemma 7. *$\overline{y} < \hat{y}$ and $\underline{y} > \hat{y}$*

Proof. Suppose not for the first part of the lemma, then $\overline{y} \geq \hat{y}$. By the definitions of $\overline{y}$ and $\hat{y}$,

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

Hence,

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

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

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

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

Suppose not for the second part of the lemma, then $\underline{y} \leq \hat{y}$. Using the definitions of $\underline{y}$ and $\hat{y}$, it must be that

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

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

$$\begin{aligned} \frac{f(q_{sq} + \hat{y})}{g(q_{sq} + \hat{y})} &\geq \frac{f(q_{sq} + \underline{y})}{g(q_{sq} + \underline{y})} \\ \implies \frac{F(q_{sq} + \underline{y})}{G(q_{sq} + \underline{y})} &\geq \frac{f(q_{sq} + \underline{y})}{g(q_{sq} + \overline{y})} \end{aligned}$$

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

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

■

Proposition 16. *If* $\eta > 0$

(a) and (3) is satisfied, there is an equilibrium where the incumbent changes the status quo if and only if (6) is satisfied, and is never reelected.

Otherwise, if $\eta > 0$ *and (3) is not satisfied:*

(b) and if $\hat{y} \leq \kappa - (x_I - x_{sq})^2 - (1-s)r$*, the incumbent changes the status quo if and only if (12) is satisfied, and is reelected if they change the status quo.*

(c) and if $\overline{y} \leq \kappa - (x_I - x_{sq})^2 - (1-s)r < \hat{y}$*, the incumbent changes the status quo if and only if (13) is satisfied, and the incumbent is reelected if they change the status quo and* q_I *is not revealed or if* q_I *is revealed and* $q_I > \hat{q}_I$*.*

(d) and if $\overline{y} \in (\kappa - (x_I - x_{sq})^2 - (1-s)r, \kappa - (x_I - x_{sq})^2)$*, the incumbent changes the status quo if and only if (14) is satisfied, and is reelected with probability* $\rho^* < 1$ *if they change the status quo and* q_I *is not revealed or if* q_I *is revealed and* $q_I > \hat{q}_I$*.*

(e) and if $\overline{y} \geq \kappa - (x_I - x_{sq})^2$ *the incumbent changes the status quo if and only if (6) is satisfied, and is reelected with probability one if they change the status quo,* q_I *is revealed, and* $q_I > \hat{q}_I$*.*

Proof. Fix $\eta > 0$. Furthermore, suppose that (3) is satisfied, in which case $\overline{y}$ and $\hat{y}$ do not exist. Then the incumbent is never reelected if they change the status quo. Hence, they change the status quo if and only if (4) is satisfied. When $q_{sq} + \kappa - (x_I - x_{sq})^2 < 0$, retaining is off the equilibrium path. By assumption, if the incumbent deviates to an action off the equilibrium path, the probability they are high ability is $\mu < p$. Therefore, the incumbent will not deviate as long as (4) is satisfied, which holds for all q_I. This proves the first result of the proposition.

Now suppose $\eta > 0$ and (3) is not satisfied. In equilibrium, the incumbent's expected utility from changing the status quo is

$$q_I - \kappa + (1-s)\lambda r + s\gamma(q_I)r$$

where λ is the probability the incumbent is reelected if q_I is not revealed and $\gamma(q_I)$ is the probability the incumbent is reelected if q_I is revealed. This expected utility is increasing in q_I since $\gamma(q_I)$ is weakly increasing in q_I. Hence, it is sufficient to solve for q_I such that the incumbent is indifferent between retaining and changing since they will strictly prefer changing for any larger q_I.

Focus on equilibria where the incumbent is reelected with positive probability when they change the status quo and q_I is not revealed. That is, equilibria where $\overline{y} \leq y^*$. First suppose the incumbent is reelected with probability one when they change the status quo and q_I is not revealed. Then, in equilibrium, the incumbent changes the status if and only if (7) is satisfied. For this to be an equilibrium, it must be that $\hat{y} < \kappa - (x_I - x_{sq})^2 - r$ and $\underline{y} < \kappa - (x_I - x_{sq})^2 - r$, where the first implies the second.

Next, suppose there is an equilibrium where the incumbent changes the status quo if and only if $q_I > \hat{q}_I$. This implies that the incumbent is reelected if they change the status quo. In addition to the restrictions on the voter's beliefs that are satisfied by the definition of $\hat{y}$, two other conditions must be satisfied for this to be an equilibrium. First, if the incumbent wins reelection if q_I is revealed, they must prefer to change the status quo. That is,

$$\hat{q}_I \geq q_{sq} + \kappa - (x_I - x_{sq})^2 - r.$$

Second, an incumbent for whom $q_I < \hat{q}_I$ cannot want to deviate to changing the status quo and getting reelected with probability $1 - s$. That is,

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

These conditions are satisfied if $\hat{y} \in [\kappa - (x_I - x_{sq})^2 - r, \kappa - (x_I - x_{sq})^2 - (1 - s)r]$

Summarizing, if $\hat{y} \leq \kappa - (x_I - x_{sq})^2 - (1 - s)r$, in equilibrium, the incumbent changes the status quo if and only if

$$q_I > \max\{q_{sq} + \kappa - (x_I - x_{sq})^2 - r, \hat{q}_I\}. \tag{12}$$

This proves the second result in the proposition.

Continue to suppose that in equilibrium the incumbent is reelected with probability one if they change the status quo. But suppose there are realizations of q_I such that they change the status quo but are not reelected if q_I is revealed. This means that an indifferent incumbent will not be reelected if q_I is revealed. The incumbent is indifferent if $q_I = q_{sq} + \kappa - (x_I - x_{sq})^2 - (1 - s)r$, and hence changes the status quo if and only if

$$q_I > q_{sq} + \kappa - (x_I - x_{sq})^2 - (1 - s)r. \tag{13}$$

For this to be an equilibrium, it must be that

$$\overline{y} < \kappa - (x_I - x_{sq})^2 - (1-s)r < \hat{y}$$

Finally, suppose there is an equilibrium where the incumbent is reelected with probability $\rho^* \in [0,1]$ if they change the status quo and q_I is not revealed. Since the voter mixes, it must be that $y^* = \overline{y}$, which implies $y^* < \hat{y}$ and hence the incumbent is sometimes not reelected if they change the status quo and q_I is revealed. In particular, the incumbent who is indifferent will not be reelected if q_I is revealed. In this potential mixed strategy equilibrium, the incumbent is indifferent between retaining and changing when $q_I = q_{sq} + \kappa - (x_I - x_{sq})^2 - (1-s)\rho^* r$, and hence changes the status quo if and only if

$$q_I > q_{sq} + \kappa - (x_I - x_{sq})^2 - (1-s)\rho^* r. \tag{14}$$

The voter is willing to mix if

$$\Leftrightarrow \rho^* = \frac{\kappa - (x_I - x_{sq})^2 - \overline{y}}{(1-s)r}.$$

$\rho^* \in (0,1)$ if

$$\overline{y} \in (\kappa - (x_I - x_{sq})^2 - (1-s)r, \kappa - (x_I - x_{sq})^2).$$

Additionally, note that when when $\overline{y} = \kappa - (x_I - x_{sq})^2 - (1-s)r$, $\rho^* = 1$, and when $\overline{y} = \kappa - (x_I - x_{sq})^2$, $\rho^* = 0$.

It remains to consider equilibria where the incumbent is not reelected when q_I is not revealed. In such an equilibrium, there must be realizations of q_I such that the incumbent changes the status quo and is not reelected if q_I is revealed. As a result, the incumbent is indifferent when $q_I = q_{sq} + \kappa - (x_I - x_{sq})^2$, and hence changes the status quo if and only if (4) is satisfied. This requires $\overline{y} > \kappa - (x_I - x_{sq})^2$. Which means this equilibrium exists when $\kappa - (x_I - x_{sq})^2 < 0$. ■

Proposition 17. *If $\eta = 0$:*

(a) and if $0 > q_{sq} + \kappa - (x_I - x_{sq})^2 - (1-s)r$, there is an equilibrium where the incumbent changes the status quo for any q_I, and is reelected with probability $\rho^* \in [0,1]$ if they change the status quo and q_I is not revealed and with probability one if q_I is revealed and $q_I > \hat{q}_I$.

Otherwise, if $\eta = 0$, $0 \leq q_{sq} + \kappa - (x_I - x_{sq})^2 - (1-s)r$:

(b) and if $\hat{y} \leq \kappa - (x_I - x_{sq})^2 - (1-s)r$, there is a unique equilibrium where the incumbent changes the status quo if and only if (12) is satisfied, and is reelected if they change the status quo.

(c) and if $\hat{y} > \kappa - (x_I - x_{sq})^2 - (1-s)r$, there is a unique equilibrium where the incumbent changes the status quo if and only if (13) is satisfied, and is reelected if they change the status quo and q_I is not revealed or if q_I is revealed and $q_I > \hat{q}_I$.

Proof. Fix $\eta = 0$. Moreover, suppose there is an equilibrium where the incumbent changes the status quo for any q_I. Further, consider an incumbent for whom $q_I = 0$. Since $\eta = 0$, $\hat{q}_I$ exists and $\hat{q}_I > 0$. Thus, changing the status quo is a best response for this incumbent if and only if

$$0 > q_{sq} + \kappa - (x_I - x_{sq})^2 - (1-s)\rho r. \tag{15}$$

By a similar argument to the one used in Proposition 16, in equilibrium, the incumbent's expected utility from changing the status quo is increasing in q_I. Hence, if 15, the incumbent changes the status quo for all q_I. Hence, if $0 > q_{sq} + \kappa - (x_I - x_{sq})^2 - (1-s)r$, a continuum of equilibria exist where the incumbent changes the status quo with probability one and is reelected with probability with probability ρ^* where $0 > q_{sq} + \kappa - (x_I - x_{sq})^2 - (1-s)\rho^*$.

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 an equilibrium where the incumbent is reelected with probability one when they change the status quo. In such an equilibrium, the incumbent will change the status quo if and only if (7) is satisfied. This equilibrium exists if $\hat{y} < \kappa - (x_I - x_{sq})^2 - r$.

Next, consider a strategy profile where the incumbent changes the status quo if and only if $q_I > \hat{q}_I$ and is reelected with probability one when they change the status quo. By a similar argument to the one used in Proposition 16, for this to be an equilibrium, it must be that

$$\hat{y} \in (\kappa - (x_I - x_{sq})^2 - r, \kappa - (x_I - x_{sq})^2 - (1-s)r)$$

which is true by assumption.

Finally, consider an equilibrium where the incumbent is only reelected if they change the status quo and q_I is not revealed or if q_I is revealed and $q_I > \hat{q}_I$. Hence, the incumbent changes the status quo if and only if (13) is satisfied. For this to be an equilibrium it must be that $\hat{y} > \kappa - (x_I - x_{sq})^2 - (1-s)r$.

It remains to check two knife edge cases. Suppose $\hat{y} = \kappa - (x_I - x_{sq})^2 - (1-s)r$, which is the same as saying $\hat{q}_I = q_{sq} + \kappa - (x_I) - x_{sq}^2 - (1-s)r$. In the previously proposed equilibrium the incumbent changes the status quo, $q_I > \hat{q}_I$, and is reelected with probability one when they change the status quo. Hence, this is an equilibrium.

Finally, suppose $\hat{y} = \kappa - (x_I - x_{sq})^2 - r$. This is the same as saying $\hat{q}_I = q_{sq} + \kappa - (x_I) - x_{sq}^2 - (1-s)r$. In the previously proposed equilibrium the incumbent changes the status quo, $q_I > \hat{q}_I$, and is reelected with probability one when they change the status quo. Hence, this is an equilibrium. ■

Proposition 18. *If $\eta < 0$,*

(a) and (3) is satisfied, there is a unique equilibrium where the incumbent changes the status quo if and only if (6) is satisfied, and is always reelected.

Otherwise, if $\eta < 0$ and (3) is not satisfied,

(b) if $\underline{y} \leq \kappa - (x_I - x_{sq})^2$, there is an equilibrium where the incumbent changes the status quo if and only if (9) is satisfied, and is reelected with probability one if they change the status quo and with $\rho^* \in (0,1]$ if they retain the status quo.

(c) if $\overline{y} \geq \kappa - (x_I - x_{sq})^2 - r$ and $\kappa - (x_I - x_{sq})^2 - (1-s)r \geq \hat{y}$, there is an equilibrium where the incumbent changes the status quo if and only if (12) is satisfied, and is reelected if they change the status quo.

(d) if $\hat{y} > \kappa - (x_I - x_{sq})^2 - (1-s)r$, there is an equilibrium where the incumbent changes the status quo if and only if (13) is satisfied, and is reelected if they change the status quo if q_I is not revealed or if $\hat{q}_I$ is revealed and $q_I > \hat{q}_I$.

Proof. Fix $\eta < 0$. Furthermore, suppose (3) is satisfied, and hence $\underline{y}$ and $\hat{y}$ do not exist. Then the incumbent is reelected whether they change or retain the status quo. Hence, the incumbent changes the status quo if and only if (4) is satisfied. If $q_{sq} + \kappa - (x_I - x_{sq})^2 < 0$, retaining is off the equilibrium path. Given the assumption about the off the path beliefs, the incumbent will be reelected if they deviate. Hence, they will not deviate if (4) is satisfied which holds for all q_I. This shows existence of the first equilibrium in the proposition.

For the remainder of the proof suppose (3) is not satisfied. Since $\eta < 0$, the incumbent is always reelected if they change the status quo and q_I is not revealed. Moreover, by a similar argument to the one used in the proof of Proposition 16, the incumbent's expected utility in equilibrium from changing the status quo is increasing in q_I. Hence, it is sufficient to find the realization of q_I such that the incumbent is indifferent as they will change the status quo for any higher realizations of q_I.

Additionally, note that if the incumbent is reelected when they retain the status quo, they are also reelected when they change the status quo and q_I is revealed. To see this, suppose not. Then there exist $q_I < q_I'$ such that

$$\frac{1}{1 + \frac{1-p}{p}\frac{G(q_I)}{F(q_I)}} > p + \eta > \frac{1}{1 + \frac{1-p}{p}\frac{g(q_I)}{f(q_I)}}.$$

Hence,

$$\begin{aligned} \frac{g(q_I')}{f(q_I')} &> \frac{G(q_I)}{F(q_I)} \\ \implies \frac{1 - G(q_I')}{1 - F(q_I')} &> \frac{G(q_I')}{F(q_I')}, \end{aligned}$$

where the second line is a contradiction due to the FOSD property of MLRP.

Now, suppose there is an equilibrium where the incumbent is reelected with probability one whether they change the status quo or not. In that case, the incumbent changes the status quo if and only if (4) is satisfied. This equilibrium exists if $\underline{y} < \kappa - (x_I - x_s)^2$ and $\hat{y} < \kappa, -(x_I - x_s)^2$, where the first implies the second.

Next, suppose there is an equilibrium where the incumbent is reelected with some probability less than one when they retain the status quo. In equilibrium, the incumbent changes the status quo if and only if (9) is satisfied. For the voter to be willing to randomize, it must be that

$$\rho^* = \frac{\overline{y} - \kappa + (x_I - x_{sq})^2 + r}{r}.$$

For $\rho^* \in [0, 1]$, it must be that

$$\underline{y} \in [\kappa - (x_I - x_{sq})^2 - r, \kappa - (x_I - x_{sq})^2].$$

Summarizing, if $\underline{y} \leq \kappa - (x_I - x_{sq})^2$, there is an equilibrium where the incumbent changes the status quo if and only if (9) is satisfied.

In the remaining equilibria, the incumbent is certain to be reelected when they retain the status quo and q_I is not revealed and is not reelected when the retain. That is, $\underline{y} > y^*$. What happens when q_I is revealed depends on the equilibrium.

First, suppose there is an equilibrium where the incumbent is reelected with probability one if they change the status quo but is not reelected if they retain. That is, $\overline{y} > y^* \geq \hat{y}$. In equilibrium, the incumbent will change the status quo if (7) is satisfied. Hence, this equilibrium exists if

$$\overline{y} > \kappa - (x_I - x_{sq})^2 - r > \hat{y}$$

Now consider a strategy for the incumbent where the change the status quo if and only if $q_I > \hat{q}_I$. For this to be an equilibrium, it must be that

$$\hat{y} < (\kappa - (x_I - x_{sq})^2 - r, \kappa - (x_I - x_{sq})^2 - (1-s)r).$$

Summarizing, if $\overline{y} \geq \kappa - (x_I - x_{sq})^2 - r$, and $\kappa - (x_I - x_{sq})^2 - (1-s)r \leq \hat{y}$, there is an equilibrium where the incumbent changes the status quo if and only if (12) is satisfied.

Finally, suppose there is an equilibrium where the incumbent is reelected with probability one if they change 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 $q_I = q_{sq} + \kappa - (x_I - x_{sq})^2 - (1-s)r$. Hence, the incumbent changes the status quo if and only (13) is satisfied. This equilibrium exists if $\hat{y} > q_{sq} + \kappa - (x_I - x_{sq})^2 - (1-s)r$. Note, this allows for the possibility that $0 > \kappa - (x_I - x_{sq})^2 - (1-s)r$ ■

10.7 Proof of Proposition 7

Suppose (3) is satisfied and $\eta > 0$. Fix $\hat{y}$ and $\overline{y}$ such that $\hat{y} > \kappa - (x_I - x_{sq})^2 - (1-s)r \geq \overline{y}$. Hence, the incumbent changes the status quo if and only if (13) is satisfied. Note, the preliminary assumption implies $\hat{q}_I > q_{sq} + \kappa - (x_I - x_{sq})^2 - (1-s)r$. Hence, their ex-ante expected utility is

$$\int_0^{q_{sq}+\kappa-(x_I-x_{sq})^2-(1-s)r} (q_{sq}-(x_I-x_{sq})^2)h(q_I)dq_I \\ + \int_{q_{sq}+\kappa-(x_I-x_{sq})^2-(1-s)r}^{\hat{q}_I} (q_I-\kappa+(1-s)r)h(q_I)dq_I \\ + \int_{\hat{q}_I}^{\infty} (q_I-\kappa+r)h(q_I)dq_I, \quad (16)$$

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

$$\frac{\partial(16)}{\partial s} = -\int_{q_{sq}+\kappa-(x_I-x_{sq})^2-(1-s)r}^{\hat{q}_I} rh(q_I)dq_I < 0.$$

Hence, for small increases in s, the incumbent's expected utility is decreasing.

Now, suppose $\overline{y} \geq \kappa - (x_I - x_{sq})^2$. Then, the incumbent changes the status quo if and only if (6). In particular, $q_{sq} + \kappa - (x_I - x_{sq})^2 \geq 0$. Then the incumbent's expected utility is

$$\int_0^{q_{sq}+\kappa-(x_I-x_{sq})^2} (q_{sq}-(x_I-x_{sq})^2)h(q_I)dq_I \\ + \int_{q_{sq}+\kappa-(x_I-x_{sq})^2}^{\hat{q}_I} (q_I-\kappa)h(q_I)dq_I \\ + \int_{\hat{q}_I}^{\infty} (q_I+sr)h(q_I)dq_I, \quad (17)$$

Differentiating,

$$\frac{\partial(17)}{\partial s} = \int_{\hat{q}_I}^{\infty} rh(q_I)dq_I > 0.$$

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

10.8 Proof of Proposition 8

I analyze this model for $\eta < 0$ and $\eta > 0$.

Proof. Suppose $\eta < 0$. By identical arguments to those used in Proposition 12, the following equilibria exist in the subgame induced by $\hat{x}$:

(a) if $\kappa - (x_I - x_{sq})^2 + (x_I - \hat{x})^2 \geq \underline{y}$, the incumbent changes the status quo if and only if $q_I > q_{sq} + \kappa - (x_I - x_{sq})^2 + (x_I - \hat{x})^2$, and is reelected regardless of their decision

(b) if $\underline{y} \geq \kappa - (x_I - x_{sq})^2 + (x_I - \hat{x})^2 - r$, the incumbent changes the status quo if and only if $q_I > q_{sq} + \kappa - (x_I - x_{sq})^2 + (x_I - \hat{x})^2 - r$, and the voter reelects the incumbent with probability one if they change the status quo

(c) if $\underline{y} \in (\kappa - (x_I - x_{sq})^2 + (x_I - \hat{x})^2 - r, \kappa - (x_I - x_{sq})^2 + (x_I - \hat{x})^2 - r)$, the incumbent changes the status quo if and only if $q_I > q_{sq} + \kappa - (x_I - x_{sq})^2 + (x_I - \hat{x})^2 - (1 - \rho^*)r$, and the voter reelects the incumbent if they change the status quo with probability one and if it retains with probability $\rho^* \in (0, 1)$.

Consider the incumbent's initial proposal decision, focusing on the case where $\underline{y} < \kappa - (x_I - x_{sq})^2$, and hence the incumbent is not reelected if they propose $\hat{x} = x_I$ and retain the status quo. If the incumbent chooses $\hat{x} \neq x_I$, their optimal choice is $\hat{x}$ such that the voter is indifferent between the incumbent and the challenger when the incumbent retains the status quo. Hence, $\hat{x}^*$ solves

$$
\begin{aligned}
q_{sq} + \underline{y} &= q_{sq} + \kappa - (x_I - x_{sq})^2 + (x_I - \hat{x})^2, \\
\Leftrightarrow \hat{x}^* &= x_I \pm \sqrt{\underline{y} - \kappa + (x_I - x_{sq})^2}.
\end{aligned}
$$

To show existence of an equilibrium where $\hat{x} \neq x_I$, consider the following example: $f(q_I)$ and $g(q_I)$ are exponential distributions with rate parameters 1 and 2, respectively; $p = 0.5$; and $\eta = p - \frac{1}{1 + \frac{1 - e^{-2}}{1 - e^{-1}}} \approx 0.078$. If the incumbent changes the status quo if and only if $q_I > 1$,

$$
\Pr(\tau_I = \overline{\theta} | \pi_1 = \pi_{sq}) = p + \eta.
$$

Therefore, if $q_{sq} = 1$, $\underline{y} = 0$. Finally, suppose that, $\kappa = 0.16$, and $r = 0.5$. Hence, as $x_I \to 0.6$,

$$
\begin{aligned}
(x_I - x_{sq})^2 - \kappa + r &\to 0.5 > \underline{y} \\
(x_I - x_{sq})^2 - \kappa = 0 &\to \underline{y},
\end{aligned}
$$

and the incumbent's expected utility from choosing $\hat{x} = \hat{x}^*$ is

$$\left(\frac{1}{2}\left(1 - e^{-1}\right) + \frac{1}{2}\left(1 - e^{-2}\right)(1 - 0.16 + 0.5)\right.$$
$$\left. + \int_1^\infty (q_I - 0.16 + 0.5)\left(\frac{1}{2}e^{-q_I} + \frac{1}{2}2e^{-2q_I}\right) dq_I \approx 1.5577,\right.$$

and their expected utility from proposing $\hat{x} = x_I$ is

$$\left(\frac{1}{2}\left(1 - e^{-1}\right) + \frac{1}{2}\left(1 - e^{-2}\right)(1 - 0.16)\right.$$
$$\left. + \int_1^\infty (q_I - 0.16 + 0.5)\left(\frac{1}{2}e^{-q_I} + \frac{1}{2}2e^{-2q_I}\right) dq_I \approx 1.1835.\right.$$

For x_I sufficiently close to 0.6, $\kappa - (x_I - x_{sq})^2 > \underline{y}$. Moreover, because the incumbent's expected utility is continuous in x_I, for x_I sufficiently close to 0.6, the incumbent's expected utility from choosing $\hat{x} = \hat{x}^*$ is greater than their expected utility from choosing $\hat{x} = x_I$. This demonstrates the existence of equilibria where $\hat{x} = \hat{x}^*$ when $\eta < 0$.

Now consider the case where $\eta > 0$. By the same arguments used in Proposition 13, the following equilibria exist in the subgame induced by $\hat{x}$:

(a) if $\overline{y} \leq \kappa - (x_I - x_{sq})^2 + (x_I - \hat{x})^2$, the incumbent changes the status quo if and only if $q_I > q_{sq} + \kappa - (x_I - x_{sq})^2 + (x_I - \hat{x})^2 - r$, and is reelected with probability one if they change the status quo

(b) if $\overline{y} \geq \kappa - (x_I - x_{sq})^2 + (x_I - \hat{x})^2$, the incumbent changes the status quo if and only if $q_I > q_{sq} + \kappa - (x_I - x_{sq})^2 + (x_I - \hat{x})^2$, and the voter reelects the incumbent with probability one if they changes the status quo

(c) if $\overline{y} \in (\kappa - (x_I - x_{sq})^2 + (x_I - \hat{x})^2 - r, \kappa - (x_I - x_{sq})^2 + (x_I - \hat{x})^2 - r)$, the incumbent changes the status quo if and only if $q_I > q_{sq} + \kappa - (x_I - x_{sq})^2 + (x_I - \hat{x})^2 - (1 - \rho^*)r$, and the voter reelects the incumbent with probability $\rho^* \in (0, 1)$ if they change the status quo.

Now consider the incumbent's proposal decision. In particular, focus on the case where $\kappa - (x_I - x_{sq})^2 - r < \overline{y}$, as this is the case where the incumbent is not reelected with probability one if they propose $\hat{x} = x_I$ and change the status quo.

If the incumbent proposes a policy that differs from their ideal point, they will choose the policy such that when the voter observes revision, she is at indifferent between the policymakers. That is, they will choose $\hat{x}$ such that

$$q_{sq} + \overline{y} = q_{sq} + \kappa - (x_I - x_{sq})^2 + (x_I - \hat{x})^2 - r$$
$$\hat{x} = x_I \pm \sqrt{r + (x_I - x_{sq})^2 + \overline{y} - \kappa}.$$

Suppose $\overline{y} \in (\kappa - (x_I - x_{sq})^2 - r, \kappa - (x_I - x_{sq})^2)$. The incumbent's expected utility from proposing $\hat{x} = \hat{x}^*$ is

$$(q_{sq} - (x_I - x_{sq})^2)(pF(q_{sq} + \overline{y}) + (1-p)G(q_{sq} + \overline{y})) + \int_{q_{sq}+\overline{y}}^{\infty} (q_I - (x_I - x_{sq})^2 - \overline{y})h(q_I)dq_I$$

and their expected utility from proposing $\hat{x} = x_I$, in which case there is a mixed strategy equilibrium, is

$$(q_{sq} - (x_I - x_{sq})^2)(pF(q_{sq} + \overline{y}) + (1-p)G(q_{sq} + \overline{y})) + \int_{q_{sq}+\overline{y}}^{\infty} (q_I - (x_I - x_{sq})^2 - \overline{y}h(q_I)dq_I$$

Hence, an equilibrium exists where the incumbent proposes $\hat{x} = \hat{x}^*$. ■

10.9 Proof of Lemma 2

Proof. Suppose that in equilibrium, the probability that the minority wins reelection when they block the proposed change is ω and the probability they win reelection if they accept the proposal is λ. Then, the minority accepts the change if and only if

$$q_I > q_{sq} + \kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2 + (\omega - \lambda)r.$$

Therefore, the minority agrees to a change if and only if q_I is sufficiently large. ■

10.10 Proof of Lemma 3

Proof. Suppose not and that $q_{sq} + z^* \geq 0$. If $q_{sq} + z^* < 0$, then it is trivially true that in equilibrium the majority only proposes policies the minority will accept.

Then, because the proposition is not true, there are intervals $Q \subset [0, q_{sq})$ and $Q' \subset [0, q_{sq})$ with $Q \cup Q' = [0, q_{sq})$ and $Q \cap Q' =$ such that if $q_I \in Q$ the incumbent retains the status quo and if $q_I \in Q'$ the incumbent proposes a policy change. Moreover, the probability the incumbent is reelected if $q_I \in Q'$ is different from the probability they are reelected if $q_I \in Q'$. Denote these probability υ_Q and $\upsilon_{Q'}$. Since q_I is not revealed to the voter in either cases, neither υ_Q nor $\upsilon_{Q'}$ depend on q_I.

When $q_I \in Q$, the incumbent's expected utility is

$$q_{sq} - (x_I - x_{sq})^2 + \upsilon_Q r,$$

and when $q_I \in Q'$, the incumbent's expected utility is

$$q_{sq} - (x_I - x_{sq})^2 + \upsilon_{Q'} r.$$

Hence, the incumbent has a profitable deviation from action with the lower probability of reelection to the action with the higher probability. ■

10.11 Proofs of Proposition 9

I provide a full characterization of equilibrium behavior in Propositions 19, 20, and 21. Proposition 9 follows immediately.

Proposition 19. *If $\eta > 0$,*

(a) and (3) is satisfied, there is a unique equilibrium where the majority proposes a policy for any q_I, the minority accepts the proposal if and only if (18) is satisfied, and the majority is never reelected.

Otherwise, if $\eta > 0$ and (3) is not satisfied:

(b) if $\kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2 + r \geq \overline{y}$, there is an equilibrium where the majority proposes a policy for any q_I, the minority accepts the proposal if and only if (19) is satisfied, and the majority is reelected if the proposal is accepted.

(c) if $\kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2 \leq \overline{y}$, there is an equilibrium where the majority proposes a policy for any q_I, the minority accepts the proposal if and only if (18) is satisfied, and the majority is never reelected.

(d) if $\overline{y} \in (\kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2, \kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2 + r)$, there is an equilibrium where the majority proposes a policy for any q_I, the minority accepts the proposal if and only if (21) is satisfied, and the majority is with probability $\rho^* \in (0,1)$ if the proposal is accepted.

Proof. Fix $\eta > 0$. Since the minority uses a threshold, the majority is never reelected if the minority blocks a proposed policy. Additionally, fix a strategy for the majority of proposing a policy for any q_I. Any equilibrium with this strategy will satisfy the equilibrium selection criterion of focus on equilibria where the majority proposes the largest interval of policies as this is the largest possible interval.

Then suppose (3) is satisfied. Then the majority cannot win reelection and will accept a proposed change if

$$q_I > \max\{q_{sq} + \kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2, 0\} \tag{18}$$

For the remainder of the proof suppose (3) is not satisfied. Hence, $\overline{y}$ exists. Furthermore, suppose $z^* > \underline{y}$, in which case the majority is reelected if the minority accepts the proposed policy but not otherwise. Then, the minority accepts a proposed policy if

$$q_I > q_{sq} + \kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2 + r. \tag{19}$$

For this to be an equilibrium, it must be that $\kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2 + r > \underline{y}$.

Next, suppose $z^* < \underline{y}$, in which case the minority is reelected whether or not they accept the proposed policy. Then, the minority accepts a proposed policy if and only if

$$q_I > q_{sq} + \kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2. \tag{20}$$

For this to be an equilibrium, it must be that $\kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2 < \underline{y}$. Note, this allows for the possibility that $q_{sq} + \kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2 < 0$, in which case the minority accepts any proposed policy. Hence, the minority's threshold is to accept a proposal if and only if (18) is satisfied.

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

$$q_I > q_{sq} + \kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2 + \rho^* r. \tag{21}$$

Then, such an equilibrium exists if

$$\frac{\overline{y} - \kappa + (x_C - x_{sq})^2 - (x_C - x_I)^2}{r} = \rho^*,$$

and if $\overline{y} \in [\kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2, \kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2 + r]$.

Note, when $\overline{y} \in (\kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2, \kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2 + r])$, multiple equilibria exist. ■

Proposition 20. *If $\eta < 0$,*

(a) and (3) is satisfied, there is an equilibrium where the majority proposes a policy for any q_I, the minority accepts the proposal if and only if 18 is satisfied, and the majority is always reelected.

Otherwise, if $\eta < 0$ and (3) is not satisfied,

(b) if $\kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2 \geq \underline{y}$, there is an equilibrium where the majority proposes a policy for any q_I, the minority accepts the proposal if and only if (21) is satisfied, and the majority is always reelected.

(c) if $\kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2 < \underline{y}$, there is an equilibrium where the majority proposes a policy for any q_I, the minority accepts the proposal if and only if (22) is satisfied, and the majority is reelected with probability one if the minority accepts the policy and with probability $\rho^* \in [0, 1)$ if the minority blocks the policy.

Proof. Fix $\eta < 0$. Since the minority uses a threshold, the majority is always reelected if the minority accepts the proposed policy. Additionally, fix a strategy for the majority of proposing a policy for any q_I. Any equilibrium with this strategy will satisfy the equilibrium selection criterion of focusing on equilibria where the majority proposes the largest interval of policies as this is the largest possible interval.

Then suppose (3) is satisfied. Then the majority always wins reelection and will accept a proposed change if and only if (18) is satisfied.

For the remainder of the proof suppose (3) is not satisfied, and hence, $\underline{y}$ exists.

First, suppose $\underline{y} < z^*$, in which case the majority is reelected whether they retain or change the status quo. Then the minority accepts a proposed policy if and only if (18) is satisfied. For this equilibrium to exist, it must be that $\kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2 > \underline{y}$.

Now, suppose $\underline{y} > z^*$, in which case the majority is reelected if they change but not if they retain. Then the minority accepts a proposed policy if and only if

$$q_I > q_{sq} + \kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2 + r.$$

For this equilibrium to exist, it must be that $\kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2 + r < \underline{y}$.

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

$$q_I > q_{sq} + \kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2 + (1 - \rho^*)r.$$

For this to exist, it must be that

$$\rho^* = \frac{\kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2 + r - \underline{y}}{r}$$

and if $\overline{y} \in [\kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2, \kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2 + r]$.

Summarizing, if $\underline{y} \geq \kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2$, the minority accepts the proposed policy if and only if

$$q_I > q_{sq} + \kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2 + (1 - \rho^*)r, \tag{22}$$

for $\rho \in [0, 1)$. ■

Proposition 21. *If* $\eta = 0$

Proof. Fix $\eta = 0$. Fix a strategy for the majority of proposing a policy for any q_I.

Additionally, suppose there is an equilibrium where the minority accepts any proposal. Then on the path the voter is indifferent between the minority and majority and reelects the majority with probability ρ^*. For such an equilibrium to exist, it must be that

$$0 > q_{sq} + \kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2 + (1 - \rho^*)r.$$

Since $\rho^* \in [0, 1]$, if $0 > q_{sq} + \kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2$, a continuum of equilibria exist.

For the remainder of the proof, suppose the minority blocks some proposed policies on the equilibrium path. Hence, the majority is reelected when the minority accepts a proposal and is not reelected when the minority blocks a proposal. Hence, the minority will accept a proposal if and only if

$$q_I > q_{sq}\kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2 + r$$

■

10.12 Proof of Proposition 10

Proof. Recall from Lemma 6 that $\underline{y}$ and $\overline{y}$ are increasing in η.

If (3) is satisfied or if

$$q_{sq} + \kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2 + r < 0, \tag{23}$$

the probability of policy change is constant in η.

For the remainder of the proof suppose neither 3 nor 23 are satisfied. Then $\underline{y}$ and $\overline{y}$ exists and the minority blocks some proposed policies in equilibrium. Suppose first that $\eta < 0$. There is a unique equilibrium in this case so the set of equilibria is the same as the equilibrium with minimal policy change. Proposition 20 implies that the probability of policy change is weakly increasing in η and weakly smaller than

$$pF(q_{sq} + \kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2 + r) \\ + (1-p)G(q_{sq} + \kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2 + r). \tag{24}$$

Now suppose $\eta = 0$. Then the probability of policy change is either one or (24)

Finally, suppose $\eta > 0$. In the equilibrium with minimum policy change, if $\underline{y} \in (\kappa - (x_C - X_{sq})^2 + (x_C - x_I)^2, \kappa - (x_C - X_{sq})^2 + (x_C - x_I)^2 + r)$, the incumbent changes the status quo if and only if (18) is satisfied. Proposition 19 implies that the probability of policy change is weakly decreasing in η and is weakly smaller than (24). ■

10.13 Proof of Proposition 11

In Γ, if $\underline{y} \geq \kappa - (x_I - x_{sq})^2$, the unique equilibrium is one with electorally beneficial policy change where the incumbent is reelected if and only if they change the status quo. And in Γ^v, if $\underline{y} \leq \kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2$, the unique equilibrium is one with certain reelection. Hence, if

$$\kappa - (x_C - x_{sq})^2 + (x_C - x_I)^2 > \kappa - (x_I - x_{sq})^2, \tag{25}$$

the probability of reelection in the unique equilibrium of Γ is lower than the probability of reelection in the unique equilibrium of Γ^v. Condition (25) is satisfied if the minority's ideological benefit of policy change is strictly smaller than the majority's.

11 Appendix: Robustness

11.1 Incumbent knows their Type

Suppose the incumbent knows their 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 $\gamma \in [0,1]$ when the incumbent changes the status quo. Than an incumbent of type τ_j changes the status quo if and only if

$$q_I > q_{sq} + \kappa - (x_I - x_{sq})^2 + (\lambda - \gamma)r.$$

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

11.2 Election Outcome Affects Policy

Suppose that if the challenger is elected, the status quo is implemented regardless of what the incumbent chosen in the previous period. Specifically, suppose that the incumbent chooses $\tilde{\pi} \in \{\pi_{sq}, \pi_I\}$. If the incumbent is reelected, $\pi = \tilde{\pi}$. Otherwise, $\pi = \pi_{sq}$.

If $\tilde{\pi} = \pi_{sq}$, the voter reelects the incumbent if

$$\Pr(\tau_I = \overline{\theta} | \pi = \pi_{sq}) - x_{sq}^2 + q_{sq} > p - x_{sq}^2 + q_{sq} + \eta.$$

Hence, this is as in the baseline model.

By an identical argument to that used above, the incumbent will use a threshold strategy in any equilibrium. That is, in equilibrium, they will change the status quo if and only if

$$q_I > q_{sq} + w^*.$$

If $\tilde{\pi} = \pi_I$, the voter reelects the incumbent with probability one if

$$\frac{(1 - F(q_{sq} + w^*))p}{(1 - F(q_{sq} + w^*))p + (1 - G(q_{sq} + w^*))(1 - p)} - x_I^2 + \mathbb{E}[q_I | \tilde{\pi} = \pi_I, w^*] - \zeta$$
$$> p - x_{sq}^2 + q_{sq} + \eta. \quad (26)$$

By Lemma 4, and the fact that $\mathbb{E}[q_I | \tilde{\pi} = \pi_I, w^*]$ is increasing in w^*, the voter's expected utility from reelecting the incumbent, the LHS of (26), is increasing in w^*. Hence, if the incumbent changes the status quo, they are reelected if w^* is sufficiently large and are not reelected otherwise. Call the cutoff such that w^* is sufficiently large $\overline{w}$.

Suppose first that $\eta > 0$, and hence the incumbent is not reelected if they retain the status quo. Then, suppose that $w^* < \overline{w}$, in which case the incumbent is never reelected. Then, the incumbent changes the status quo if and only if

$$q_I > q_{sq} + \kappa - (x_I - x_{sq})^2.$$

For this to exist, it must be that

$$\kappa - (x_I - x_{sq})^2 < \overline{w}.$$

Hence, for some parameters, there is an equilibrium with certain replacement.

Suppose next that $w^* > \overline{w}$, in which case the incumbent is reelected if and only if they change the status quo. In this case, the incumbent changes the status quo if and only if

$$q_I > q_{sq} + \kappa - (x_I - x_{sq})^2 - r.$$

For this to exist, it must be that

$$\kappa - (x_I - x_{sq})^2 - r > \overline{w}.$$

Hence, for some parameters, there is an equilibrium with beneficial policy change.

Finally, suppose $\eta < 0$, in which case the incumbent is reelected if they retain the status quo. Furthermore, suppose $w^* > \overline{w}$, in which case they are reelected if they change the status quo. In this case, the incumbent changes the status quo if and only if

$$q_I > q_{sq} + \kappa - (x_I - x_{sq})^2.$$

For this to exist, it must be that

$$\kappa - (x_I - x_{sq})^2 > \overline{w}.$$

Hence, for some parameters, there is an equilibrium with certain reelection.