Signaling Ability Through Policy Change

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Abstract

A voter is uncertain about an incumbent's ability to develop high-quality policies. The incumbent develops a reform, observes its quality, and decides whether to implement it. The voter observes this decision but not the quality of the reform and decides whether to reelect the incumbent. I show the incumbent sometimes engages in ability signaling: she implements the reform even if it is lower quality than what she would implement under complete information about her ability. Whether she does depends on her ideological opposition to the status quo. I then show that requiring the incumbent to secure the agreement of a second policymaker with whom she is electorally competing may create the opposite distortion: the second policymaker blocks reforms he would allow under complete information. Whether this distortion arises also depends on ideological preferences. Finally, I demonstrate an informational logic for ideological moderation or extremism.

1 Introduction

In 2017, congressional Republicans, who held a majority in the Senate and the House, attempted to repeal the Affordable Care Act (ACA).[1] Despite concerns among GOP legislators that the potential reforms had significant problems—Republican Senator Susan Collins feared the policy would "have a substantially negative impact on the number of people covered by insurance"—congressional Republicans exerted considerable effort to make good on what had been a critical plank in their 2016 platform (Collins 2017). In fact, in the telling of Republican Senator Chuck Grassley, it was precisely that American voters knew just how badly Republicans disliked the ACA that made it imperative to pass the reform:

> "You know, I could maybe give you 10 reasons why this bill shouldn't be considered, but Republicans campaigned on this so often that you have a responsibility to carry out what you said in the campaign. That's pretty much as much of a reason as the substance of the bill."

In this paper, I develop a theory of policy reform that explains why a policymaker would implement a reform despite knowing it is low quality. Moreover, the theory illustrates how sometimes it is precisely because voters are aware the policymaker dislikes the status quo that the policymaker implements the low-quality reform. To do so, I study a game-theoretic model in which policies have two dimensions: ideology and quality. In the model, an incumbent policymaker (she), driven by policy goals and the prospect of reelection, decides whether to retain an inherited policy of publicly known ideology and quality or implement a reform, which moves policy to her ideal point along the ideological dimension. Before deciding whether to implement the reform, the incumbent privately learns the reform's quality, which is drawn from a distribution that depends on her unobserved ability. Notably, a higher-quality reform is more likely to be developed by a high-ability policymaker. A voter observes the incumbent's decision but not the quality of the reform and reelects the incumbent if the probability she has high ability is sufficiently high.

I begin by showing that in some regions of the parameter space, the incumbent engages in *ability signaling*—relative to a benchmark where the voter knows the incumbent's ability, she implements additional, relatively lower-quality reforms. Ability signaling decreases expected reform quality since the additional reforms are low-quality reforms the incumbent would not otherwise implement, as well as overall policy quality since these additional reforms are lower quality than the status quo.

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[1] By using the budget reconciliation process, Senate Republicans could have passed the repeal despite lacking a filibuster-proof majority.

The observation that reelection concerns—reputation concerns more broadly—might motivate a policymaker to enact additional, lower-quality reforms is present in previous work (e.g., Judd 2017). However, I show whether this distortion emerges depends critically on the incumbent's ideological preferences vis-à-vis the status quo. In equilibrium, the voter updates positively about the incumbent when she implements a reform and updates negatively when she retains the status quo; this is what drives ability signaling. Yet, how much the voter updates depends on the incumbent's ideological preferences. For example, the more ideologically opposed the incumbent is to the status quo, the more negatively the voter updates about her ability if she retains it. This is because the voter recognizes that an incumbent who strongly dislikes the existing policy will implement a reform unless it is *particularly* low quality. Hence, if the incumbent fears what the voter will believe if she does not implement the reform—such as when she is always reelected if she does—she engages in ability signaling when she is especially ideologically opposed to the status quo. From this, we see that it may have been congressional Republicans' fear of what voters would believe if they failed to implement a reform, exacerbated by their ideological opposition to the ACA, that led them to try and push through policies they internally thought were low-quality.

On the other hand, the less ideologically opposed the incumbent is to the status quo, the more positively the voter updates about the incumbent when she implements a reform. The voter reasons that if the incumbent does not dislike existing policy, she will only implement a reform if she develops one that is reasonably high-quality. Hence, if the incumbent is concerned with what the voter believes when she implements the reform, like when her only hope for reelection is to implement it, she engages in ability signaling when she is not ideologically opposed to the status quo. In summary, the model illustrates two reasons why uncertainty about the incumbent's ability leads to additional reform. First, the incumbent engages in ability signaling because she fears what the voter will believe if she retains the status quo. Second, she engages in ability signaling because of what the voter will believe if she implements a reform. Whether one of these reasons affects her behavior in equilibrium depends on her ideological preferences vis-á-vis the status quo.

In many cases, an incumbent policymaker cannot unilaterally change the status quo; instead, she must secure agreement from another policymaker with potentially different ideological preferences. Moreover, these negotiations often occur under the shadow of an upcoming election. I study an extension of the baseline model where the incumbent chooses whether to propose the reform, which is implemented if and only if the challenger (he) agrees to it. Before deciding, the challenger observes the quality of the incumbent's reform.

In this extension, uncertainty about the incumbent's type distorts the challenger's behavior. In some regions of the parameter space, he engages in *ability blocking*—relative to

the complete information benchmark of this extension, he blocks additional higher-quality reforms. This distortion decreases the probability of reform and expected policy quality, the latter since the additional reforms the challenger blocks would improve upon the quality of the status quo.

Whether ability blocking arises in equilibrium also depends on ideological preferences— the challenger's ideological preferences vis-á-vis the incumbent's proposed reform. The more ideologically opposed the challenger is to the reform, the more positively the voter updates about the incumbent's ability when the challenger agrees to a proposed reform. Hence, when the challenger fears what the voter will believe if he accepts the proposed reform, he engages in ability blocking if he is especially ideologically opposed to the status quo. On the other hand, the less ideologically opposed the challenger is to the status quo, the more negatively the voter updates about the incumbent when the challenger blocks the proposed reform. Hence, when the challenger is concerned with what the voter believes when he blocks the proposed reform, and he is less ideologically opposed to the status quo, he engages in ability signaling. From this, we can see two distinct reasons for ability blocking. First, the challenger engages in ability blocking because the voter will update positively about the incumbent if he agrees to her proposed reform. Second, the challenger engages in ability blocking because the voter will update negatively about the incumbent if he blocks the reform. Whether one of these reasons affects the challenger's behavior in equilibrium depends on his ideological preferences vis-á-vis the incumbent's reform.

Unsurprisingly, introducing the challenger's veto decreases the probability of reform relative to when the incumbent can act unilaterally. However, I show that the presence of the challenger's veto can also be electorally beneficial for the challenger. Because the challenger blocks some reforms that the incumbent would make if she could act unilaterally, securing the challenger's agreement is a stronger signal of high ability, and failing to secure the challenger's agreement is a weaker signal of low ability. Hence, this model provides a microfoundation for the conventional wisdom that voters have a preference for bipartisanship (e.g., Friedman 2012).

The core insight of the model is that ideological preferences affect the information conveyed about the incumbent's ability by reform and retention of the status quo. To conclude, I ask whether this means the incumbent ever wants to develop a reform that is not at her ideological ideal point and show the answer is "yes." Specifically, I study an extension of the baseline model where the incumbent publicly chooses the ideology of her reform before privately learning its quality. Despite being able to reform the status quo unilaterally, for some regions of the parameter space, she develops a reform with an ideology that differs from her ideological ideal point. Importantly, she does not do this to move the ideology of the reform

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closer to the voter's ideological ideal point but to affect the information conveyed by her decision whether to reform the status quo. As a result, she sometimes wins reelection with a higher probability than if she develops a reform with her preferred ideology. The model thus highlights an informational logic for ideological moderation or ideological extremism in unilateral policymaking.

1.1 Related Literature

This paper formalizes a theory of how uncertainty about a policymaker's ability to develop high-quality policies affects policymaking in a setting with ideological preferences. To formalize this theory, I study a model where policy has two dimensions: ideology and quality. This model builds on a small but growing literature of formal models where policy has an ideological component and a valence component (e.g., Hirsch and Shotts 2012; Hirsch and Shotts 2015; Hirsch and Shotts 2018; Hitt, Volden, and Wiseman 2017; Londregan 2000). Many of the papers within this literature build upon the same basic model where a policymaker makes a costly investment in developing the quality of an alternative to the status quo. By doing this, the policymaker makes her reform more attractive to a different player who must agree to change the status quo. With one exception, Hitt, Volden, and Wiseman (2017), policymakers in the existing models have the same ability to develop high-quality policies. In contrast, in my model, some policymakers have more ability than others. Moreover, unlike Hitt, Volden, and Wiseman (2017), I study a setting with incomplete information about the policymaker's ability and show this affects policymakers' incentives to implement reforms.

This paper is also related to the literature on electoral accountability when there is uncertainty about a policymaker's type (e.g., Canes-Wrone, Herron, and Shotts 2001; Ashworth and Shotts 2010; Maskin and Tirole 2004; Kartik, Squintani, Tinn, et al. 2015; Bils 2023; Gailmard and Patty 2019). Across a wide range of settings, uncertainty about the policymaker leads to distorted policymaking. I demonstrate a similar result using a novel setup that incorporates horizontal and vertical dimensions of policy.

Within this literature, my model is closely related to Judd (2017) and Fu and Li (2014), who study models where a policymaker signals her ability by unilaterally changing the status quo. In both models, the policymaker's reputation concerns incentivize them to make reforms that are bad for the voter. My contribution relative to these papers is to show how the incumbent's ideological preferences affect whether her behavior is distorted. I also show how the incumbent's desire to be reelected may lead her to develop a policy that is more moderate or extreme than her ideal point along the ideological dimension.

Within this literature, my model is also closely related to work incorporating ideological

preferences and uncertainty about a policymaker's ability or competence (e.g., Bils 2023; Fox and Shotts 2009). Relative to existing work, I show that ideological preferences affect when a policymaker's behavior will be distorted because ideological preferences affect the information revealed about the incumbent's type.

Finally, in an extension of the baseline model, I study a setting where the challenger can veto the incumbent's proposed reform. This extension is related to work on electoral accountability where one player can veto another player's proposal (e.g., Buisseret 2016; Noble 2023; Fox and Stephenson 2011; Fox and Van Weelden 2010), and, in particular, work where one player proposes a policy with ideological and quality dimension and another player can veto it (e.g., Caillaud and Tirole 1999). In the closest paper to mine, Hirsch and Kastellec (2022) study a model where a potential saboteur chooses whether to prevent a policy passed by an opposing party from being implemented. I compliment Hirsch and Kastellec (2022) by showing how the challenger's ideological preferences affect whether he blocks reforms. I also show how the challenger's veto power can lead the incumbent to be reelected with a higher probability than she would if she could implement reform alone.

2   Model

There are three players: an incumbent policymaker (I, "she"), a challenger (C, "he"), and a voter (V, "he"). Each policymaker, $j \in \{I, C\}$, either has high ability ($\tau_j = 1$) or low ability ($\tau_j = 0$), and their types are unknown to all players.[2] 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, $q_{sq} \in \mathbb{R}$. The incumbent has the option to maintain this status quo, $\pi = \pi_{sq}$, or implement the reform, π_I, which has an exogenously determined ideology, $x_I \in \mathbb{R}$, and quality, $q_I \in \mathbb{R}$. While the incumbent and the voter know x_I, only the incumbent knows q_I, which she privately learns before publicly deciding whether to implement the reform. Observing this decision, but without observing q_I, the voter chooses between reelecting the incumbent ($e = 1$) and replacing her with the challenger ($e = 0$)

The quality of the incumbent's reform, q_I, is drawn from one of two distributions depending on her type. Let f be the prior distribution of q_I if the incumbent has high ability, and let g be the prior distribution of q_I if the incumbent has low ability. I assume $f(q_I) > 0$ and

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[2] The assumption that the incumbent does not know her type is made to avoid additional notation, but it is of no consequence to my results. In Appendix B, I show my results do not change if the incumbent learns her type at the start of the game.

$g(q_I) > 0$ for $q_I \in \mathbb{R}$ and $f(q_I)$ and $g(q_I)$ have the strict monotone likelihood ratio property (MLRP)(Milgrom 1981).[3]

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 implement the reform.

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

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

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

$$u_I(x, q) = -(\hat{x} - x)^2 + q + er,$$

where $\hat{x}$ is the incumbent's ideological ideal point and $r > 0$ represents office rents.[4] I assume $x_I = \hat{x}$, that is, the ideology of the incumbent's reform matches her ideological ideal point. However, I relax this assumption in Section 6.

The voter cares about the policymakers' ability:

$$u_V = e\tau_I + (1 - e)(\tau_C + \eta).$$

where $\eta \in \mathbb{R}$ represents the voter's preference for or against the challenger for reasons other than ability. The parameter η represents a notion of ex-ante electoral competition; it might represent things like the incumbency advantage or the voter's ideological or partisan preference for one of the policymakers. If $\eta > 0$, the incumbent ex-ante *trails* the challenger, and if $\eta < 0$, the incumbent ex-ante *leads* the challenger.

I also make the following parameter assumption.

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

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[3]Assuming $f(q_I)$ and $g(q_I)$ have the strict MLRP means $\frac{f(q_I)}{g(q_I)}$ is strictly increasing in q_I.

[4]The particular functional form of the incumbent's ideological preferences is not critical to my results. Suppose the incumbent's utility from a policy with ideology x and quality q is given by $l(\hat{x}, x, q)$, where $l(\hat{x}, x, q)$ is continuous and strictly increasing in q. If $l(\hat{x}, x, q)$ is weakly decreasing in the distance between $\hat{x}$ and x, my qualitative results survive. And if $l(\hat{x}, x, q)$ is weakly increasing or is not monotone with respect to the distance between $\hat{x}$ and x, most of my qualitative results are preserved.

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

Equilibrium The incumbent's strategy is a function $\sigma_I(\cdot) : \mathbb{R} \to \Delta\{\pi, \pi_I\}$, and the voter's strategy is a function $\sigma_V(\cdot) : \{\pi, \pi_I\} \to \Delta\{0,1\}$.[5] A perfect Bayesian equilibrium with minimum policy change, referred to in the paper as an "equilibrium," satisfies the following:

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

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

 (iii.) There is no other equilibrium with lower probability of reform.

The first two conditions are the conditions for a perfect Bayesian equilibrium. I adopt the third condition in light of the existence of multiple equilibria. For much of the parameter space, a unique perfect Bayesian equilibrium satisfies the first two conditions, but in some cases, multiple perfect Bayesian equilibria exist. Adopting the third condition ensures uniqueness. Notably, the comparative statics results derived when I focus on the equilibrium with minimum policy change are the same as those if I focus on the equilibrium with maximum policy change.[6]

3   Discussion of the Model

Policy Quality I model policy as having two dimensions: ideology and quality. Ideology represents the dimension of policy over which people disagree, and quality represents aspects of the policy everyone values, such as cost-effectiveness, lack of susceptibility to fraud, and the extent to which the policy achieves agreed-upon goals like economic growth. Consider the Paycheck Protection Program (PPP), which provided low-interest loans to business owners during the COVID-19 pandemic. The ideology of the PPP can be represented by a point along the left-right policy dimension. There are also aspects of the PPP that are separate from ideology that contribute to the quality of the policy. For example, the PPP was highly susceptible to fraud—by some estimates, 10 percent of the money dispersed was for

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[5]In both cases, $\Delta(X)$ denotes the space of lotteries over X.

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

fraudulent claims—due partly to the way applications were screened (Griffin, Kruger, and Mahajan 2023; Brooks 2023).[7].

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

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

Learning about Quality I assume the incumbent knows the quality of her reform when deciding whether to implement it, but the voter does not. This asymmetry reflects that the policymaker is a policy expert, but the voter needs time to observe an implemented reform to learn its quality. This model represents a situation where there is insufficient time for the voter to learn about quality before the election.

Timing In the model, the policymaker learns the quality of her reform and then decides whether to implement it. This feature of the model represents how, after drafting a piece of legislation, a policymaker has the choice of whether to proceed with it. For example, during the 2024 Presidential Debate, Donald Trump discussed his campaign's efforts to develop an alternative to the ACA:

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

> Obamacare was lousy health care. Always was. It's not very good today. We're looking at different plans. If we can come up with a plan that's going to cost our people, our population less money and be better health care than Obamacare, then I would absolutely do it. But until then I'd run it as good as it can be run.[8]

Taken at face value, this quote illustrates how after developing a reform, a policymaker evaluates its quality before choosing whether to implement it.

Voter's Preferences I assume the voter has a preference for policymakers with high ability. This assumption represents that a policymaker with high ability will be more likely to develop high-quality policies in the future.[9] There is empirical evidence that voters care about legislator effectiveness or ability in elections (e.g., Treul et al. 2022).

4 Analysis

Given the incumbent's choice whether to implement the reform, $\pi \in \{\pi_{sq}, \pi_I\}$, the voter strictly prefers to reelect the incumbent when $\Pr(\tau_I = 1 | \pi) > p + \eta$.[10]

4.1 Benchmark: No Uncertainty about the Incumbent's Ability

I begin with the complete information benchmark, where the incumbent's type is known by all players. Denote this game by Γ^K. When the voter knows whether the incumbent has high ability, his voting decision is unrelated to the incumbent's decision whether to implement the reform. Therefore, the incumbent implements the reform if and only if doing so increases her utility from policy, which is when her ideological benefit from implementing the reform exceeds the net change in quality:

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

It is clear that as long as the incumbent has some degree of ideological opposition to the status quo, she sometimes implements reforms that are of relatively lower quality. Moreover, as the incumbent's ideological opposition to the status quo increases, the probability she implements the reform increases, and expected policy quality decreases.

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[8]Hoffman 2024

[9]The assumption that voters care about policymakers' ability in an unmodeled second period is extremely common in the electoral accountability literature (e.g., Fox and Stephenson 2011; Gibbs 2024).

[10]Slightly abusing notation, here π represents the incumbent's decision rather than the policy itself since the voter does not observe q_I.

4.2 Full Model: Uncertainty about the Incumbent's Ability

I now turn to the model described in Section 2 where the incumbent's type is unknown, denoted by Γ^U. When the voter chooses whether to reelect the incumbent, his strategy is a mapping from the incumbent's decision to a vote choice. Therefore, there are three possible types of equilibria. In the first, the voter's choice does not depend on the incumbent's decision, in which case the incumbent implements the reform if and only if condition (1) is satisfied, which is the same threshold she uses in Γ^K.

In the remaining possible equilibria, the incumbent's probability of reelection depends on whether she implements the reform. One possibility is that in equilibrium, the incumbent's probability of reelection is strictly greater when she retains the status quo than when she implements the reform. Suppose such an equilibrium exists. In this equilibrium, the incumbent's utility from retaining the status quo does not depend on q_I. However, her utility from implementing the reform is increasing in q_I. Hence, she must use a threshold strategy where she implements the reform if and only if it is sufficiently high quality.

That $f(q_I)$ and $g(q_I)$ satisfy strict MLRP means that if the incumbent uses a threshold strategy, implementing the reform signals high ability while retaining the status quo signals the opposite.[11] As a result, there cannot be an equilibrium where the incumbent's probability of reelection is higher when she retains the status quo than when she implements the reform. This rules out the possibility that this potential equilibrium exists.

In the other possible equilibrium, the incumbent's probability of reelection is strictly greater when she implements the reform than when she retains the status quo. I refer to this as an *equilibrium with consequential policy change*. The same argument about the necessity of the incumbent using a threshold strategy applies here. Hence, she uses a threshold strategy and implements the reform if and only if it is sufficiently high quality.

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

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

In an equilibrium with consequential policy change, the incumbent's desire for reelection is an additional incentive to implement the reform. This additional incentive leads to distorted policymaking relative to the complete information benchmark.

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

Proposition 1. *There are regions of the parameter space where an equilibrium with consequential policy change exists. Moreover, relative to Γ^K, in an equilibrium with consequential policy change,*

(a) *the probability of reform is strictly higher,*

(b) *expected reform quality is strictly lower,*

(c) *and expected policy quality is strictly lower.*

Consider an incumbent in the complete information benchmark who, given the quality of her reform, is essentially indifferent between implementing it and retaining the status quo. If there is uncertainty about her type and changing the status quo increases her probability of reelection, she has an extra incentive to implement it relative to the benchmark. I refer to the additional reforms that arise due to this as *ability signaling*. These additional reforms reduce expected reform quality because they are lower quality than the other reforms the incumbent implements. Moreover, they reduce expected policy quality because the additional reforms are lower quality than the status quo.

The incumbent and voter's behavior within an equilibrium with consequential policy change parallels results in many related papers where a policymaker undertakes inefficient reform because voters reward such behavior (e.g., Judd 2017; Bils 2023; Fu and Li 2014). But under what conditions does such an equilibrium exist?[12] In the following proposition, I show that existence depends on the incumbent's ideological preferences.

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

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

(b) $\eta = 0$;

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

where $\overline{y}(q_{sq}, \eta)$ *and* $\underline{y}(q_{sq}, \eta)$ *solve* $\Pr(\tau_I = 1 | \pi = \pi_I, \overline{y}(q_{sq}, \eta)) = p + \eta$ *and* $\Pr(\tau_I = 1 | \pi = \pi_{sq}, \underline{y}(q_{sq}, \eta)) = p + \eta$. *In any other equilibrium, the incumbent's strategy coincides with her strategy in* Γ^K.

The core of this result is that the incumbent's ideological preferences vis-à-vis the status quo affect the voter's belief about her ability. For example, the more ideologically opposed the incumbent is to the status quo the incumbent is, the more negatively the voter updates about her ability when she retains the status quo. This is because the voter recognizes that

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[12]In Section A in the Appendix, I provide a full characterization of all PBE.

if the incumbent is very ideologically opposed to the status quo, she will only retain it if her reform is *particularly* low quality. On the other hand, the less ideologically opposed to the status quo the incumbent is, the more positively the voter updates about her ability when she implements the reform. In this case, the voter recognizes that the incumbent is implementing the reform because it is high quality rather than because she dislikes the status quo.

When the incumbent trails the challenger ($\eta > 0$), she is never reelected if she retains the status quo. Whether she engages in ability signaling depends on whether she is reelected with positive probability if she implements her reform. She will be as long as she is not too ideologically opposed to the status quo. When the necessary condition is satisfied, which depends on $\underline{y}(q_{sq}, \eta)$, the incumbent engages in ability signaling because the voter will reelect her if she implements a reform.

When the incumbent leads the challenger ($\eta < 0$), she is always reelected if she implements a reform. Whether she engages in ability signaling depends on whether she is reelected with a probability of less than one if she retains the status quo. This is the case if she is sufficiently ideologically opposed to the status quo. When the necessary condition is satisfied, which depends on $\overline{y}(q_{sq}, \eta)$, the incumbent engages in ability signaling because she fears what the voter will believe if she retains the status quo. Thus, we see that there are two distinct logics for ability signaling: the desire to be perceived as the type of incumbent who implements a reform and the fear of being perceived as the type of incumbent who retains the status quo.

Returning to the 2017 attempt by congressional Republicans to repeal the ACA discussed in the introduction; the second case provides an intuition for why the congressional Republicans felt the need to push through reform after campaigning heavily on repealing the ACA. Having made their ideological opposition to the status quo clear to voters, failure to implement the reform would have been an especially bad signal of their ability. If congressional Republicans feared what voters would believe if they retained the status quo, i.e., $\eta < 0$, they would have engaged in ability signaling and would have been willing to push through a lower-quality reform than they would have been willing to otherwise.

In the remaining regions of the parameter space, there are two other types of equilibria: an *equilibrium with certain reelection*, where the incumbent is reelected regardless of whether she implements the reform, and an *equilibrium with certain replacement*, where the incumbent is replaced whether she implements the reform or not.

4.3 Comparative Statics

Definition 1. *Let y_Γ^* be the incumbent's quality threshold in an equilibrium of Γ^U. If $y_\Gamma^* < -(\hat{x} - x_{sq})^2$, the incumbent engages in ability signaling. Moreover,*

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

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

Proposition 3. *The extent of ability signaling is*

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

(b) and weakly increasing in the office rents.

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

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

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

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

4.4 Implications

Ability Signaling without Elections Although there is a voter and an election in the model, the model can depict policymaking by an unelected policymaker. Suppose the incumbent is the superintendent of a school district who is deciding whether to enact an education reform, and the voter is someone who might hire the superintendent for a different job in the future. Proposition 1 suggests the superintendent may engage in ability signaling. 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 move to their next job quickly —leads to "policy churn." Superintendents are incentivized to "assume the role of the reformer, initiating a great deal of activity" to bolster their reputations. Otherwise, they will be perceived as "'do nothing' and will be replaced by a more promising successor" (Hess 1999, p. 43).

Connection to Empirical Literature Empirical work on electoral accountability provides evidence that policymakers' desire for reelection incentivizes action (e.g. Alt, Bueno de Mesquita, and Rose 2011; Fouirnaies and Hall 2022). For example, Volden and Wiseman (2018) find that in the two years prior to running for reelection, U.S. senators have higher legislative effectiveness scores, which measure a legislator's ability to usher legislation they sponsor into law.[13]

One story that explains this empirical finding is that uncertainty about a senator's ability leads them to engage in ability signaling in the lead-up to running for reelection. However, an implication of this is that this additional effectiveness may make voters worse off.[14] Suppose the voter has preferences over policy of a similar form to the incumbent, has an ideological ideal point of zero, and that the incumbent's ideological benefit from reform is weakly larger than the challengers (i.e., $(\hat{x} - x_{sq})^2 \geq x_{sq}^2$).

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[13]These scores attempt to capture the "proven ability to advance a member's agenda items through the legislative process and into law." For more information about the scores, see Volden and Wiseman's website: https://thelawmakers.org/faq

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

Proposition 4. *The voter's welfare is weakly lower in Γ^U than it is in Γ^K.*

If the incumbent has a weakly larger ideological benefit from reform than the voter, then in the complete information benchmark, the incumbent implements reforms too often relative to the amount that would maximize the voter's welfare. Incomplete information about the incumbent's ability exacerbates this since she sometimes engages in ability signaling, which means she implements additional reforms. If the additional action senators take to usher their sponsored legislation through the legislative process is for reforms that are lower quality than the status quo, the empirical effect documented in Volden and Wiseman (2018) may make voters worse off.

Excessive Mutability of Laws   Since the founding of the United States, some have feared there is a connection between elections and excessive reform. James Madison and Alexis de Tocqueville both feared that political turnover via elections would lead to excessive reform because different policymakers had different preferences.[15]   There is a sense in which this concern is captured by my model.

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

That said, my model identifies an additional reason why elections and excessive reform might be connected: the desire of a policymaker to signal the ability to develop high-quality policies. It also shows how the policymaker's policy preferences affect whether ability signaling arises in equilibrium.

5   Veto Institutions

The baseline model assumes the incumbent can unilaterally reform the status quo, and I show that in such a setting, uncertainty about her ability and her desire for reelection leads to ability signaling. What happens if the incumbent cannot act unilaterally? In many policymaking institutions, a policymaker must secure the agreement of other policymakers to change the status quo. Moreover, it is common for policymakers to interact under the shadow of future electoral competition. For example, the incumbent might be the majority party in the Senate that needs the support of the minority party, the challenger, to pass legislation. To study the effect of uncertainty about the ability to develop high-quality

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[15]Alexis de Tocqueville wrote, "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). See also the James Madison quote in the introduction.

policies in this type of setting, I study an extended version of the baseline model, denoted Γ^V, where:

1. Nature draws the policymakers' types and q_I.

2. The incumbent privately learns q_I.

3. The incumbent chooses whether to propose the reform, $\tilde{\pi} = (x_I, q_I)$.

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

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

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

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

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

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

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

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

This assumption—that the ideology of the status quo is on the Pareto frontier—implies the challenger's ideological benefit from reform is weakly smaller than the incumbent's.[16]

I begin with a lemma that establishes the structure of any equilibrium.

Lemma 2. *In any equilibrium,*

(a) *the challenger uses a threshold strategy and agrees to a proposed reform if and only if $q_I \geq q_{sq} + z^*$, where $z^* \in (-\infty, \infty)$,*

(b) *the incumbent proposes the reform for all $q_I \geq q_{sq} + z^*$,*

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[16]Stated differently, this assumption means the ideology of the status quo is in the gridlock interval. This means that if the incumbent and challenger only care about ideology, they will never agree to change the status quo. Callander and Martin (2017) show that the addition of policy quality means there can be policy change despite the status quo beginning in the gridlock interval.

(c) *and the probability the incumbent is reelected if she proposes the reform and the chal-lenger blocks it is the same as the probability she is reelected if she does not propose the reform.*

Part (a) implies the voter's updating is similar to his updating in the baseline model. When the challenger agrees to a proposed reform, the voter updates positively about the incumbent's ability, and when the challenger blocks a proposed reform, the voter updates negatively about the incumbent's ability.

Part (a) and Assumption 2 together imply that if the challenger prefers accepting a proposed reform to blocking it, the incumbent prefers proposing it to retaining the status quo. As a result, the challenger's threshold strategy determines how high quality the reform must be to be implemented in equilibrium. This means that given z^*, the incumbent can employ a multitude of proposal strategies in equilibrium. However, any proposal strategy must have the property that the beliefs induced by it lead the incumbent to be reelected with the same probability whether she retains the status quo or proposes the reform and is blocked.

In light of part (c), and to streamline the analysis, I make the following restriction.

Equilibrium In addition to conditions (i.)-(iii.), I focus on equilibria satisfying the follow-ing:

(iv.) On the equilibrium path, the incumbent proposes the reform for all q_I, and if the incumbent deviates, the voter's belief survives the D1-criterion from Banks and Sobel 1987.

Let Γ^{KV} be the complete information benchmark of Γ^V where the incumbent's type is known. As in the baseline version, there are regions of the parameter space where an equilibrium with consequential policy change exists.

Proposition 6. *There are regions of the parameter space where an equilibrium with conse-quential policy change exists. Moreover, relative to Γ^{KV}, in an equilibrium with consequential policy change,*

(a) *the probability of reform is strictly lower,*

(b) *expected reform quality is strictly higher,*

(c) *and expected policy quality is strictly lower.*

Suppose there is no uncertainty about the incumbent's ability, and given the incumbent's proposed reform, the challenger is essentially indifferent between agreeing to it and blocking it. If there is uncertainty about the incumbent's type and blocking the reform increases the challenger's probability of winning the election, he has an additional incentive to block relative to the benchmark. This produces a new distortion: the challenger blocks reforms that he would allow absent uncertainty about the incumbent's ability. I refer to this as *ability blocking*.[17]

Ability blocking has different effects on expected reform quality and expected policy quality. On the one hand, ability blocking increases expected reform quality. When the challenger engages in ability blocking, he blocks the lowest quality reforms he would otherwise agree to, which increases expected reform quality. On the other hand, ability signaling decreases expected policy quality. In the absence of uncertainty about the incumbent's type, Assumption 2 implies the challenger blocks some reforms that would improve the quality of the status quo. When the challenger engages in ability blocking, she blocks additional reforms that are of higher quality than the status quo, decreasing expected policy quality.

The result that partisan competition leads a veto player to block additional reform arises in other, related models (e.g., Hirsch and Shotts 2018; Fox and Van Weelden 2010). The following result shows that whether this distortion emerges depends on ideological preferences, which shape the voter's beliefs.

Proposition 7. *An equilibrium with consequential policy change exists if and only if*

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

(b) $\eta = 0$;

(c) $\eta < 0$ *and* $-(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 < \underline{y}(q_{sq}, \eta)$.

In any other equilibrium, the challenger's strategy coincides with his strategy in Γ^{KV}.

As in the baseline model, ideological preferences affect whether distorted policymaking arises in equilibrium. However, when the challenger can veto, it is his ideological preferences

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

vis-á-vis the incumbent's reform that matter.[18] This is because the challenger's ideological preferences affect the voter's belief about the incumbent's ability. For example, the more ideologically opposed to the incumbent's reform the challenger is, the more positively the voter updates about the incumbent's ability when he agrees to a proposed reform. On the other hand, the less ideologically opposed to the incumbent's reform the challenger is, the more negatively the voter updates about the incumbent's ability when the challenger blocks a reform.

When the challenger trails the incumbent ($\eta < 0$), he never wins the election if he agrees to the proposed reform. He engages in ability blocking if he is elected with a positive probability when he blocks the proposed status quo. This is the case if he is not especially ideologically opposed to the status quo. Hence, we see that the challenger engages in ability signaling because blocking increases his probability of election.

When the challenger leads the incumbent ($\eta > 0$), he wins the election if he blocks the proposed reform. Whether he engages in ability blocking depends on whether he is elected with a probability of less than one if he agrees to the reform. He will be if he is sufficiently ideologically opposed to the status quo. Thus, the challenger engages in ability blocking because he fears what the voter will believe if he agrees to the reform.

While the challenger's ideological preferences affect when ability signaling arises, it is not necessary for him to disagree with the incumbent for ability blocking to arise.

Remark 1. *A region of the parameter space exists where there is an equilibrium with consequential policy change even if $\hat{x}_C = \hat{x}$.*

The challenger's behavior is consistent with the strategic, electorally motivated opposition observed in roll-call voting in Congress. Notably, even if the challenger and incumbent have the same ideological preferences, the challenger will sometimes block reforms he would allow if there was no uncertainty about the incumbent's type. This is reminiscent of Lee (2009), who uses roll-call votes to document the extent of disagreement between the democrats and republicans in the Senate on issues that lack a clear ideological valence.[19]

Between the ideological disagreement between the incumbent and ability blocking, the challenger blocks some reforms the incumbent would enact if she could act unilaterally. Yet, introducing the challenger's veto may be good for the incumbent electorally.

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[18]As $\hat{x}_C$ becomes smaller, the challenger's payoff from policy ideology in the case where the status quo is retained and in the case where the incumbent's reform is implemented decreases. However, by Assumption 2 and the challenger's quadratic preferences over policy, the smaller $\hat{x}_C$ is, the more opposed to reform the challenger is on ideological grounds.

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

Proposition 8. *There is a region of the parameter space where the probability the incumbent is reelected in Γ^V is higher than the probability she is reelected in Γ^U.*

Since the challenger's quality threshold is higher than the incumbent's, getting the challenger to agree to a proposed reform is a stronger signal of ability than the incumbent unilaterally changing the status quo. This means that in some regions of the parameter space, the incumbent is reelected with a higher probability when the challenger can veto than she is when she can implement the reform unilaterally. This provides an explanation for the folk wisdom that voters reward bipartisanship (e.g., Friedman 2012); implementing a reform with bipartisan support is a stronger signal of the incumbent's ability to develop high-quality reforms than enacting a reform unilaterally.

6   Endogenous Choice of Ideology

The core insight of the model is that ideological preferences affect the information conveyed through reform. In light of this, does the incumbent have any incentive to develop a reform that differs from her ideological ideal point? To answer this question, I return to the baseline model but allow the incumbent to publicly choose $x_I \in \mathbb{R}$, then privately learn q_I, and then choose whether to implement the reform.[20]   I focus attention on the baseline model to highlight a purely informational logic for the incumbent to propose a reform that differs from her ideal point.

Proposition 9. *When $\eta < 0$ and $-(\hat{x} - x_{sq})^2 < \underline{y}(q_{sq}, \eta)$, there is a region of the parameter space where, in equilibrium, the incumbent develops a reform with ideology $x_I \in \{\underline{x_I}^*, \overline{x_I}^*\}$, where $\underline{x_I}^* = \hat{x} - \sqrt{\underline{y}(q_{sq}, \eta) + (\hat{x} - x_{sq})^2}$ and $\overline{x_I}^* = \hat{x} + \sqrt{\underline{y}(q_{sq}, \eta) + (\hat{x} - x_{sq})^2}$.*

Suppose the incumbent trails, and if she develops a reform at her ideological ideal point, she only wins reelection if she implements it. By developing a reform that differs from her ideological ideal point, the incumbent reduces her incentive to implement the reform because doing so yields a smaller ideological benefit.[21] That is, by developing a reform that differs from her ideological ideal point, the incumbent commits to a higher quality threshold. This commitment makes retaining the status quo a weaker signal of low ability. If she develops a reform with an ideology sufficiently far from her ideological ideal point, retaining it will be

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

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

such a weak signal that she will win reelection even if she retains the status quo. Of course, making such a commitment comes at a cost: fixing q_I, implementing the reform yields a lower payoff. But, in some cases, the electoral benefit outweighs the ideological cost.[22]

When the incumbent develops a reform with an ideology that differs from her ideological ideal point, she chooses the ideology that is sufficiently far from her ideological ideal point to make the voter indifferent between electing the incumbent and challenger when she retains the status quo. There are two such ideologies, one to the right of the incumbent's ideological ideal point and one to the left. Both choices will affect the voter's inference in the same way. However, there are many reasons why we might expect the incumbent to break her indifference between the two ideologies by choosing the one that is more moderate than her ideological ideal point. For example, if there is a small amount of uncertainty about the incumbent's ideological ideal point, she is incentivized to choose the ideology close to the voter's ideological ideal point as in Fearon (1999). Hence, Proposition 9 can be interpreted as saying the incumbent has an incentive to moderate.

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

7   Conclusion

I studied a model where there is uncertainty about a policymaker's ability to develop high-quality policies and showed that whether distortions arise in equilibrium depends on ideological preferences. When the policymaker can unilaterally implement a reform of an inherited status quo, in some regions of the parameter space, she engages in ability signaling, which produces excessive reform, lowers expected reform quality, and lowers expected policy quality overall. Whether this distortion arises in equilibrium depends critically on the incumbent's ideological preferences vis-à-vis the status quo, which shape the information conveyed by

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[22]When the incumbent trails, there is also a region of the parameter space where she develops a reform with ideology that differs from her ideological ideal point. However, she does this when there is a mixed strategy equilibrium in the baseline. Moreover, the mixed strategy equilibrium continues to exist. Hence, I focus on the case where the ability to choose x_I destroys some of the baseline equilibria.

reform and retention of the status quo. When the incumbent must secure the agreement of another policymaker under the shadow of future electoral competition, in some regions of the parameter space, he engages in ability blocking, which produces excessive gridlock and lowers expected policy quality overall. Whether this distortion arises in equilibrium depends critically on the challenger's ideological preferences vis-à-vis the incumbent's reform.

There are many natural extensions to this model. For example, one could endogenize the status quo in a model with two periods. In the first period, the incumbent chooses whether to implement a reform. Then, the voter chooses whether to reelect the incumbent or replace her with a challenger without observing the quality of the incumbent's reform. In the second period, the election winner chooses whether to retain the status quo inherited from the previous period or to change it after learning the quality of their reform. Or, one could introduce uncertainty about the players' ideological preferences. I leave the formal examination of these ideas to future work.

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Online Appendix: Signaling Ability Through Policy Change

A   Proofs of Results in the Main Text

Proof of Lemma 1

Proof. Suppose a perfect Bayesian equilibrium (PBE) exists where the voter reelects the incumbent with probability $\gamma^* \in [0, 1]$ if she retains the status quo and with probability $\lambda^* \in [0, 1]$ if she implements the reform. In this PBE, the incumbent must implement the reform if and only if $q_I \geq q_{sq} + y^*$, where $y^* = -(\hat{x} - x_{sq})^2 + (\gamma^* - \lambda^*)r$. Since this is true for any PBE, it must be true for any equilibrium as defined in Section 2. ■

Proof of Propositions 1 and 2   I prove Lemmas A and B and then use them to characterize all PBE of Γ^U in Propositions A, B, and C. Since the incumbent uses a threshold strategy and $f(q_I) > 0$ and $g(q_I) > 0$ for all $q_I \in \mathbb{R}$, retaining the status quo and implementing the reform are both on the equilibrium path.

Propositions 1 and 2 follow from applying equilibrium condition (iii.) to the equilibria identified in Propositions A, B, and C .

Lemma A. *If the incumbent implements the reform if and only if $q_I \geq q_{sq} + y$, for $y \in (-\infty, \infty)$,*

(a) $\Pr(\tau_I = 1 | \pi = \pi_I, y) > p$ for all y and is increasing in y,

(b) and $\Pr(\tau_I = 1 | \pi = \pi_{sq}, y) < p$ for all y and is increasing in y.

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

(a) $\Pr(\tau_I = 1 | \pi = \pi_I, y) = \frac{(1-F(q_{sq}+y))p}{(1-F(q_{sq}+y))p+(1-G(q_{sq}+y))(1-p)} > p$ if $(1 - F(q_{sq} + y)) > p(1 - F(q_{sq} + y)) + (1 - p)(1 - G(q_{sq} + y))$, which is immediate due to MLRP implying FOSD. Rearranging, $\Pr(\tau_I = 1 | \pi = \pi_I, y) = \frac{1}{1+\frac{1-p}{p}\frac{(1-G(q_{sq}+y))}{(1-F(q_{sq}+y))}}$. Differentiating the ratio of the CDFs in the denominator with respect to y,

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

This is negative if $\frac{f(q_{sq}+y)}{1-F(q_{sq}+y)} < \frac{g(q_{sq}+y)}{1-G(q_{sq}+y)}$, which is the monotone hazard rate property implied by MLRP.

(b) $\Pr(\tau_I = 1 | \pi = \pi_{sq}, y) = \frac{F(q_{sq}+y)p}{F(q_{sq}+y)p+G(q_{sq}+y)(1-p)} < p$ if $F(q_{sq} + y) < F(q_{sq} + y)p + G(q_{sq} + y)(1 - p)$. This is immediate due to the well-known property that MLRP implies first order stochastic dominance (FOSD). Rearranging, $\Pr(\tau_I = 1 | \pi = \pi_{sq}, y) = \frac{1}{1+\frac{1-p}{p}\frac{G(q_{sq}+y)}{F(q_{sq}+y)}}$.

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Differentiating the ratio of the CDFs in the denominator:

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

This is negative if $\frac{f(q_{sq}+y)}{g(q_{sq}+y)} > \frac{F(q_{sq}+y)}{G(q_{sq}+y)}$, which is a well-known property of strict MLRP. ∎

Lemma B. *(a) If $\eta < 0$, there exists a unique $\underline{y}(q_{sq}, \eta) \in (-\infty, \infty)$ such that $\Pr(\tau_I = 1 | \pi = \pi_{sq}, \underline{y}(q_{sq}, \eta)) = p + \eta$ and for all $y > \underline{y}(q_{sq}, \eta)$, $\Pr(\tau_I = 1 | \pi = \pi_{sq}, y) > p + \eta$.*

(b) If $\eta > 0$, there exists a unique $\overline{y}(q_{sq}, \eta) \in (-\infty, \infty)$ such that for $\Pr(\tau_I = 1 | \pi = \pi_I, \overline{y}(q_{sq}, \eta)) = p + \eta$ and for all $y > \overline{y}(q_{sq}, \eta)$, $\Pr(\tau_I = 1 | \pi = \pi_I) > p + \eta$.

Proof. (a) Suppose $\eta < 0$. By Lemma A, $\Pr(\tau_I = 1 | \pi = \pi_{sq}, y)$ is strictly increasing in y. Moreover, $\Pr(\tau_I = 1 | \pi = \pi_{sq}, y)$ is a probability so it is bounded below by zero. Hence, there is a greatest lower bound of $\Pr(\tau_I = 1 | \pi = \pi_I, y)$ and this is the limit as $y \to -\infty$. Call this greatest lower bound $\underline{L}$. Hence, if $\eta > \underline{L} + p \equiv \underline{\eta}$, there exists a unique $\underline{y}(q_{sq}, \eta)$ such that $\Pr(\tau_I = 1 | \pi = \pi_{sq}, \underline{\eta}) = p + \eta$, and for all $y > \underline{y}(q_{sq}, \eta)$, $\Pr(\tau_I = 1 | \pi = \pi_{sq}, \underline{y}) > p + \eta$.

(b) Suppose $\eta > 0$. By Lemma A, $\Pr(\tau_I = 1 | \pi = \pi_I, y)$ is strictly increasing in y. Moreover, $\Pr(\tau_I = 1 | \pi = \pi_I, y)$ is a probability so it is bounded above by one. Hence, there is a least upper bound of $\Pr(\tau_I = 1 | \pi = \pi_I, y)$, and this is the limit as $y \to \infty$. Call this least upper bound $\overline{L}$. Hence, if $\eta < \overline{L} - p \equiv \overline{\eta}$, there exists a unique $\overline{y}(q_{sq}, \eta)$ such that $\Pr(\tau_I = 1 | \pi = \pi_I, y) > p + \eta$ for all $y > \overline{y}(q_{sq}, \eta)$.
∎

Proposition A. *Suppose $\eta < 0$.*

(a) If $-(\hat{x} - x_{sq})^2 < \underline{y}(q_{sq}, \eta) + r$, there is a PBE where $\pi = \pi_I$ if and only if (2) is satisfied and $e = 1$ if and only if $\pi = \pi_I$.

(b) If $-(\hat{x} - x_{sq})^2 \in [\underline{y}(q_{sq}, \eta), \underline{y}(q_{sq}, \eta) + r]$, there is a PBE where $\pi = \pi_I$ if and only if (4) is satisfied and $e = 1$ with probability one if $\pi = \pi_I$ and with probability $\rho^* \in [0, 1]$ if $\pi = \pi_{sq}$.

(c) If $-(\hat{x} - x_{sq})^2 > \underline{y}(q_{sq}, \eta)$, there is a PBE where $\pi = \pi_I$ if and only if (3) is satisfied and $e = 1$.

Proof. Suppose $\eta < 0$. By Lemma A, the incumbent is reelected when she implements the reform in any PBE. By Lemma B, $\underline{y}(q_{sq}, \eta)$ exists. Hence, there are three possibilities: $\underline{y}(q_{sq}, \eta) > y^*$, $\underline{y}(q_{sq}, \eta) < y^*$, and $\underline{y}(q_{sq}, \eta) = y^*$.

If $y^* < \underline{y}(q_{sq}, \eta)$, the incumbent is reelected if and only if she implements the reform. Therefore, the incumbent implements the reform if and only if

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

For this PBE to exist, it must be that $-(\hat{x} - x_{sq})^2 - r < \underline{y}(q_{sq}, \eta)$. This proves (a).

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

$$q_I > q_{sq} - (\hat{x} - x_{sq})^2. \tag{3}$$

For this PBE to exist, it must be that $-(\hat{x} - x_{sq})^2 > \underline{y}(q_{sq}, \eta)$. This proves (c).

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

$$q_I \geq q_{sq} - (\hat{x} - x_{sq})^2 + (\rho - 1)r. \tag{4}$$

For the voter to be indifferent, it must be that $-(\hat{x} - x_{sq})^2 + (\rho - 1)r = \underline{y}(q_{sq}, \eta)$, which implies that in equilibrium $\rho^* \equiv \frac{\underline{y}(q_{sq}, \eta) + (\hat{x} - x_{sq}^2)}{r} + 1$. For this PBE to exist, it must be that $\underline{y}(q_{sq}, \eta) \in [-(\hat{x} - x_{sq})^2 - r, -(\hat{x} - x_{sq})^2]$. This proves (b). ■

Proposition B. *Suppose $\eta > 0$.*

(b) *If $-(\hat{x} - x_{sq})^2 \leq \overline{y}(q_{sq}, \eta)$, there is a unique PBE where $\pi = \pi_I$ if and only if (3) is satisfied, and $e = 0$.*

(c) *If $-(\hat{x} - x_{sq})^2 > \overline{y}(q_{sq}, \eta)$, there is a unique PBE where $\pi = \pi_I$ if and only if (5) is satisfied and $e = 1$ with probability $\rho^* \in (0, 1]$ if $\pi = \pi_I$ and $e = 0$ if $\pi = \pi_{sq}$*

Proof. Suppose $\eta > 0$. By Lemma A, the incumbent is not reelected when she retains the the status quo in any PBE. By Lemma B, $\overline{y}(q_{sq}, \eta)$ exists. Hence, there are three possibilities: $\overline{y}(q_{sq}, \eta) > y^*$, $\overline{y}(q_{sq}, \eta) < y^*$, and $\overline{y}(q_{sq}, \eta) = y^*$.

If $y^* < \overline{y}(q_{sq}, \eta)$, the incumbent is never reelected. Then the incumbent implements the reform if and only if (3) is satisfied. For this PBE to exist, it must be that $-(\hat{x} - x_{sq})^2 < \overline{y}(q_{sq}, \eta)$. This proves (a).

If $y^* > \overline{y}(q_{sq}, \eta)$, the incumbent is reelected with probability one when she implements the reform but is not reelected if she retains the status quo. Then the incumbent implements the

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reform if and only if (2) is satisfied. For this PBE to exist, it must be that $-(\hat{x} - x_{sq})^2 - r >$
$\overline{y}(q_{sq}, \eta)$.

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

$$q_I \geq q_{sq} - (\hat{x} - x_{sq})^2 - \rho r. \tag{5}$$

For the voter to be indifferent, it must be that $-(\hat{x} - x_{sq})^2 - \rho r = \overline{y}$, which implies that
in equilibrium $\rho^* \equiv \frac{-(\hat{x} - x_{sq})^2 - \overline{y}(q_{sq}, \eta)}{r}$. For this PBE to exist it must be that $\overline{y}(q_{sq}, \eta) \in$
$[-(\hat{x} - x_{sq})^2 - r, -(\hat{x} - x_{sq})^2]$. This shows (b). ∎

Proposition C. *Suppose $\eta = 0$. There is a unique PBE where $\pi = \pi_I$ if and only if (2) is
satisfied, and $e = I$ if and only if $\pi = \pi_I$.*

Proof. Suppose $\eta = 0$. By Lemma A, the incumbent is reelected when she implements the
reform and is not reelected if she retains the status quo. Hence, the incumbent implements
the reform if and only if (2) is satisfied. ∎

When $\eta < 0$, if $\underline{y}(q_{sq}, \eta) \in (-(\hat{x} - x_{sq})^2 - r, -(\hat{x} - x_{sq})^2)$, there are three PBEs. The
PBE that survives equilibrium condition (iii.) is the PBE where $\pi = \pi_I$ if and only if (3) is
satisfied.

When $\eta > 0$, there is a unique PBE.

When $\eta = 0$, there is a unique PBE.

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

Proof of Proposition 3

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

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

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

$$\frac{p(1 - F(q_{sq} + y))}{p(1 - F(q_{sq} + y)) + (1 - p)(1 - G(q_{sq} + y))} = p + \eta. \tag{6}$$

By Lemma A, the LHS of (6) is increasing in y. Hence, if η increases, $\overline{y}(q_{sq}, \eta)$ increases to maintain equality. Using an identical argument, the same can be shown for $\underline{y}(q_{sq}, \eta)$. ∎

Propositions A, B, and C imply the following:

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

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

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

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

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

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

$$q_I - (\hat{x} - x_{sq})^2 > 0, \tag{7}$$

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

Proof of Proposition 4

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

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

where $h(q_I) = pf(q_I) + (1-p)g(q_I)$. This is maximized when $y^{wf} = -x_{sq}^2 + \hat{x}^2$. Moreover, the voter's welfare is increasing in y^* for $y^* < -x_{sq}^2 + \hat{x}^2$, and is decreasing in y^* for $y^* > -x_{sq}^2 + \hat{x}^2$.

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

Proof of Proposition 5

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

It remains to consider what happens when there is a possibility of ability signaling and when increasing $(\hat{x} - x_{sq})^2$ leads the incumbent to discontinuously switch her threshold. The first condition requires (7). The second condition requires $\eta < 0$ as Proposition A, B, and C imply that the incumbent's quality threshold is continuous in $(\hat{x} - x_{sq})^2$ except when $\eta < 0$. In particular, there is a discontinuity in the incumbent's quality threshold at $\underline{y}(q_{sq}, \eta) = -(\hat{x} - x_{sq})^2$. When $\underline{y}(q_{sq}, \eta) \le -(\hat{x} - x_{sq})^2$, the probability of policy change is

$$p(1 - F(q_{sq} - (\hat{x} - x_{sq})^2)) + (1 - p)(1 - G(q_{sq} - (\hat{x} - x_{sq})^2)), \tag{8}$$

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

$$p(1 - F(q_{sq} - (\hat{x} - x_{sq})^2 - r)) + (1 - p)(1 - G(q_{sq} - (\hat{x} - x_{sq})^2 - r)). \tag{9}$$

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

Proof of Lemma 2

Proof. (a) The first part of this proof follows the logic of the proof of Lemma 1.

(b) Suppose a PBE exists where the challenger accepts a proposed reform if and only if $q_I \geq q_{sq} + z^*$. Denote the probability the voter elects the incumbent in this PBE if her proposed reform is accepted as λ^*, the probability she is reelected if her proposed reform is blocked as ϑ^*, and the probability she is reelected if she retains the status quo as γ^*. Since the incumbent's payoff from policy is the same whether her proposed reform is blocked or she does not propose a reform, the probability she is reelected if she proposes a reform and is blocked must be the same as the probability she is reelected if she does not propose a reform. Otherwise, she would have a profitable deviation. Moreover, Lemma A implies $\lambda^* \geq \vartheta^* = \gamma^*$.

Now suppose a PBE exists in which there is a q_I' such that the challenger prefer a reform of q_I' to blocking the reform but incumbent prefers not proposing a reform of quality q_I' to proposing it and having the challenger accept it. That is

$$-(\hat{x}_C - x_I)^2 + (1 - \lambda^*)r + (\hat{x}_C - x_{sq})^2 - (1 - \vartheta^*)r > (x_I - x_{sq})^2 + \lambda^* r - \gamma^* r$$

Assumption 2 and the fact that $\lambda^* \geq \vartheta^* = \gamma^*$ imply this is a contradiction. This implies that if $q_I \geq q_{sq} + z^*$, the incumbent proposes the reform.

Suppose next that is a PBE where the incumbent proposes a reform for all q_I. This means not proposing a reform is off the equilibrium path. Suppose in response to the incumbent not proposing a reform, the voter elects her with probability $\varphi \in [0, 1]$. The incumbent weakly prefers to deviate if she otherwise would have proposed a reform the challenger blocks if

$$q_{sq} - (x_I - x_{sq})^2 + \varphi^* r \geq q_{sq} - (\hat{x} - x_{sq})^2 + \vartheta^* r$$
$$\Leftrightarrow \varphi^* \geq \vartheta^*,$$

and the incumbent weakly prefers to deviate if she otherwise would have proposed a reform the challenger accepts if

$$q_{sq} - (\hat{x} - x_{sq})^2 + \varphi^* r \geq q_I + \lambda^* r \tag{10}$$
$$\Leftrightarrow \varphi \geq \lambda^* + \frac{q_I + (\hat{x} - x_{sq})^2}{r}.$$

The RHS of 10 is increasing in q_I and is always larger than ϑ^*. Hence, D1 forces the voter's belief to be that the incumbent is the type that has a reform with quality $q_I < q_{sq} + z^*$ if she deviates. This is the same belief if did not deviate. Hence, she is indifferent between deviating if her reform will be blocked and strictly prefers not to

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deviate otherwise. Hence, such a PBE exists.

Finally suppose there is a PBE where the incumbent proposes a reform if and only if $q_I \geq q_{sq} + z^*$. Then on the path the challenger never blocks a proposed reform. Suppose in response to the challenger deviating off the path the

∎

Proof of Proposition 6 In Propositions E, D, and F I characterize all PBE in which the incumbent proposes a policy for all q_I assuming that if the incumbent deviates, the voter believes

$$\mu = \frac{1}{1 + \frac{1-p}{p} \frac{\int_{-\infty}^{q_{sq}+z^*} g(q_I) dq_I}{\int_{-\infty}^{q_{sq}+z^*} f(q_I) dq_I}}.$$

Since the challenger uses a threshold strategy and $f(q_I) >$ and $g(q_I) > 0$ for all q_I, accepting a proposed reform and blocking a proposed reform are both on the equilibrium path. I then show in Lemma D that D1 forces the voter to believe that if the incumbent deviates, $\Pr(\tau_I = 1 | deviation) = \mu$.

Propositions 6 and 7 follow from applying equilibrium condition (iii.) to Propositions E, D, and F.

Proposition D. *Suppose $\eta < 0$.*

(a) *If $-(\hat{x}_C - x_{sq})^2 \leq \underline{y}(q_{sq}, \eta) - (\hat{x}_C - \hat{x})^2 - r$, there is a unique PBE where $\pi = \tilde{\pi}$ if and only if (12) is satisfied, and $e = 1$ if and only if $\pi = \tilde{\pi}$.*

(b) *If $-(\hat{x}_C - x_{sq})^2 \in (\underline{y}(q_{sq}, \eta) - (\hat{x}_C - \hat{x})^2 - r, \underline{y}(q_{sq}, \eta) - (\hat{x}_C - \hat{x})^2)$, there is a unique PBE where $\pi = \tilde{\pi}$ if and only if (13) is satisfied, and the $e = 1$ with probability one if $\pi = \tilde{\pi}$ and with probability $\rho^* \in (0, 1)$ if $\pi = \pi_{sq}$.*

(c) *If $-(\hat{x}_C - x_{sq})^2 \geq \underline{y}(q_{sq}, \eta) - (\hat{x}_C - \hat{x})^2$, there is a unique PBE where $\pi = \tilde{\pi}$ if and only if (11) is satisfied, and $e = 1$.*

Proof. Suppose $\eta < 0$. Recall that by assumption the incumbent proposes the reform for all q_I. By Lemma B, in any PBE, the incumbent is reelected if the challenger accepts the proposed reform. By Lemma B, $\underline{y}(q_{sq}, \eta)$ exists. Hence, there are three cases: $z^* > \underline{y}(q_{sq}, \eta)$, $z^* < \underline{y}(q_{sq}, \eta)$, and $z^* = \underline{y}(q_{sq}, \eta)$.

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

only if

$$q_I \geq q_{sq} - (\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2. \tag{11}$$

For this PBE to exist, it must be that $-(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 > \underline{y}(q_{sq}, \eta)$. This shows (c) in the proposition.

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

$$q_I \geq q_{sq} - (\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 + r. \tag{12}$$

For this equilibrium to exist, it must be that $-(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 + r < \underline{y}(q_{sq}, \eta)$. This shows (a).

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

$$q_I \geq q_{sq} - (\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 + (1 - \rho)r. \tag{13}$$

For the voter to be indifferent, it must be that $\rho^* = \frac{-(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 + r - \underline{y}(q_{sq}, \eta)}{r}$. For this equilibrium to exist it must be that $\underline{y}(q_{sq}, \eta) \in [-(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2, -(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 + r]$. This shows (b). ∎

Proposition E. *Suppose $\eta > 0$.*

(a) *If $-(\hat{x}_C - x_{sq})^2 < \overline{y}(q_{sq}, \eta) - (\hat{x}_C - \hat{x})^2$, there is a PBE where $\pi = \tilde{\pi}$ if and only if (11) is satisfied, and $e = 0$.*

(b) *If $-(\hat{x}_C - x_{sq})^2 \in [\overline{y}(q_{sq}, \eta) - (\hat{x}_C - \hat{x})^2 - r, \underline{y}(q_{sq}, \eta) - (\hat{x}_C - \hat{x})^2]$, there is a PBE where $\pi = \tilde{\pi}$ if and only if (14) is satisfied, and $e = 1$ with probability $\rho^* \in [0, 1]$ if $\pi = \tilde{\pi}$.*

(c) *If $-(\hat{x}_C - x_{sq})^2 > \overline{y}(q_{sq}, \eta) - (\hat{x}_C - \hat{x})^2 - r$, there is a PBE where $\pi = \tilde{\pi}$ if and only if (12) is satisfied, and $e = 1$ if $\pi = \tilde{\pi}$.*

Proof. Suppose $\eta > 0$. By Lemma B, in any PBE, the incumbent is replaced if the challenger blocks the proposed reform. By Lemma B, $\overline{y}(q_{sq}, \eta)$ exists. Hence, there are three cases: $z^* > \overline{y}(q_{sq}, \eta)$, $z^* < \overline{y}(q_{sq}, \eta)$, and $z^* = \overline{y}(q_{sq}, \eta)$.

First suppose $z^* > \underline{y}(q_{sq}, \eta)$, in which case the incumbent is reelected if the challenger accepts the proposed reform but not otherwise. Then, the challenger accepts a proposed

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reform if (12) is satisfied. For this to be a PBE, it must be that $-(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 + r > \underline{y}(q_{sq}, \eta)$. This shows (c).

Next, suppose $z^* < \underline{y}(q_{sq}, \eta)$, in which case the challenger is reelected whether or not he accepts the proposed reform. Then, the challenger accepts a proposed reform if and only if (11) is satisfied. For this to be a PBE, it must be that $-(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 < \underline{y}(q_{sq}, \eta)$. This shows (a).

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

$$q_I \geq q_{sq} - (\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 + \rho r. \tag{14}$$

For the voter to be indifferent, it must be that $\rho^* = \frac{\overline{y}(q_{sq}, \eta) - + (\hat{x}_C - x_{sq})^2 - (\hat{x}_C - \hat{x})^2}{r}$. For this to be a PBE, it must be that $\overline{y}(q_{sq}, \eta) \in [-(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2, -(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 + r]$. This shows (b). ∎

Proposition F. *Suppose $\eta = 0$. There is a unique PBE where $\pi = \tilde{\pi}$ if and only if (12) is satisfied, and $e = 1$ if and only if $\pi = \tilde{\pi}$.*

Proof. Suppose $\eta = 0$. The incumbent is reelected when the challenger accepts a proposed reform and is not reelected when the challenger blocks a proposed reform. Thus, the challenger will agree to a proposed reform if and only if $q_I \geq q_{sq} - (\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 + r$. ∎

Lemma D. *D1 requires that in any PBE, if the incumbent deviates to not proposing a reform,*

$$\Pr(\tau_I = 1 | deviation) = \frac{1}{1 + \frac{1-p}{p} \frac{\int_{-\infty}^{q_{sq}+z^*} g(q_I) dq_I}{\int_{-\infty}^{q_{sq}+z^*} f(q_I) dq_I}}.$$

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

Let $\lambda^* \in [0, 1]$ be the probability the voter elects the incumbent under σ when she proposes a reform and the challenger accepts it and let $\varrho^* \in [0, 1]$ be the probability the

voter elects the incumbent under σ when she proposes a reform and the challenger blocks it. Furthermore, let $\omega \in [0, 1]$ be the probability the voter elects the incumbent when she deviates off the equilibrium path.

Suppose $q_I < q_{sq} + z^*$, in which case on the path the challenger will block the proposed reform. The incumbent weakly prefers to deviate if $\omega \geq \varrho^*$.

And suppose $q_I < q_{sq} + z^*$, in which case on the path the challenger accepts the proposed reform. The incumbent weakly prefers to deviate if $\omega \geq \lambda^* + \frac{q_I - q_{sq} + (x_I - x_{sq})^2}{r}$. Since $\lambda^* \geq \varrho^*$ and $q_{sq} + z^* \geq q_{sq}$,

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

for all $q_I > q_{sq} + z^*$. Hence, D1 forces the voter to believe that a deviation came from an incumbent for whom $q_I < q_{sq} + z^*$. This implies that the voter's belief following a deviation must be that

$$\mu = \frac{1}{1 + \frac{1-p}{p} \frac{\int_{-\infty}^{q_{sq}+z^*} g(q_I) dq_I}{\int_{-\infty}^{q_{sq}+z^*} f(q_I) dq_I}}.$$

∎

When $\eta < 0$, there a unique PBE.

When $\eta = 0$, there is a unique PBE.

When $\eta > 0$, if $\bar{y}(q_{sq}, \eta) \in (-(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2, -(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 + r)$, there are three PBEs. The PBE surviving (iii.) is the one where the challenger accepts policy change if and only if (12) is satisfied.

In Γ^{KV}, the challenger's quality threshold is $-(\hat{x}_C - x_{sq}) + (\hat{x}_C - \hat{x})$, which is weakly positive by Assumption 2. Comparing this to the quality thresholds in Propositions D, E, and F shows that the challenger's quality threshold is weakly higher in any equilibrium of Γ^V than in Γ^{KV}. This proves (a) from Proposition 6. Part (c) follows immediately from (a), and part (b) follows from (a) and Assumption 2.

Proof of Proposition 8 Suppose $\eta < 0$. In Γ^U, if $\underline{y}(q_{sq}, \eta) > -(\hat{x} - x_{sq})^2 - r$, the incumbent is reelected if and only if she implements the reform. And in Γ^V, if $\underline{y}(q_{sq}, \eta) < -(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2$, the incumbent is reelected regardless of whether the challenger accepts the proposed reform. Hence, if

$$-(\hat{x}_C - x_{sq})^2 + (\hat{x}_C - \hat{x})^2 > -(\hat{x} - x_{sq})^2 - r, \tag{15}$$

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the probability of reelection in Γ^U is lower than the probability of reelection in Γ^V. Condition (15) is satisfied if the challenger's ideological benefit from policy change is strictly smaller than the incumbent's.

Proof of Proposition 9

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

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

$$-(\hat{x} - x_{sq})^2 + (\hat{x} - \underline{x}^*)^2 < \underline{y}(q_{sq}, \eta). \tag{16}$$

Then she is only reelected if she implements the reform. Hence, her expected utility is

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

$$+ \int_{q_{sq} - (\hat{x} - x_{sq})^2 + (\hat{x} - \underline{x}^*)^2 - r}^{\infty} (q_I - (\hat{x} - \underline{x}^*)^2 + r) h(q_I) dq_I. \tag{17}$$

Differentiating,

$$\frac{\partial (17)}{\partial \underline{x}^*} = \int_{q_{sq} - (\hat{x} - x_{sq})^2 + (\hat{x} - \underline{x}^*)^2}^{\infty} 2(\hat{x} - \underline{x}^*) h(q_I) dq_I.$$

The derivative is negative when $\hat{x} < \underline{x}^*$, is positive when $\hat{x} > \underline{x}^*$, and equals zero when $\underline{x}^* = \hat{x}$. Hence, the incumbent has a profitable deviation from $\underline{x}^*$ by moving $\underline{x}$ closer to $\hat{x}$, which she can do for any $\underline{x}^*$ satisfying (16).

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

$$-(\hat{x} - x_{sq})^2 + (\hat{x} - \underline{x}^*)^2 > \underline{y}(q_{sq}, \eta). \tag{18}$$

Then she is reelected whether she implements the reform or not. Hence, her expected utility is

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

$$+ \int_{q_{sq} - (\hat{x} - x_{sq})^2 + (\hat{x} - \underline{x}^*)^2}^{\infty} (q_I - (\hat{x} - \underline{x}^*)^2 + r) h(q_I) dq_I. \tag{19}$$

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Differentiating,

$$\frac{\partial (19)}{\partial \underline{x}^*} = \int_{q_{sq}-(\hat{x}-x_{sq})^2+(\hat{x}-\underline{x}^*)^2}^{\infty} 2(\hat{x}-\underline{x}^*)h(q_I)dq_I.$$

The derivative is negative when $\hat{x} < \underline{x}^*$, is positive when $\hat{x} > \underline{x}^*$, and equals zero when $\underline{x}^* = \hat{x}$. Hence, the incumbent has a profitable deviation from $\underline{x}^*$ by moving $\underline{x}$ closer to $\hat{x}$, which can be done for any satisfying $\underline{x}^*$ satisfying (18).

Third, suppose that in equilibrium, if indifferent, the voter reelects the incumbent with probability $\rho^* < 1$, and that $\underline{x}^*$ is chosen such that $-(\hat{x}-x_{sq})^2+(\hat{x}-\underline{x}^*)^2+(\rho^*-1)r = \underline{y}(q_{sq},\eta)$. That is, $\underline{x}^* = \hat{x} \pm \sqrt{\underline{y}(q_{sq},\eta) + (\hat{x}-x_{sq})^2 - (\rho^*-1)r}$. Then, the incumbent's expected utility is

$$\int_{-\infty}^{q_{sq}+\underline{y}(q_{sq},\eta)} (q_{sq}-(\hat{x}-x_{sq})^2+\rho^*r)h(q_I)dq_I + \int_{q_{sq}+\underline{y}(q_{sq},\eta)}^{\infty} (q_I-(\hat{x}-\underline{x}^*)^2+r)h(q_I)dq_I. \quad (20)$$

Suppose the incumbent deviates to $\underline{x}$ sufficiently far from $\hat{x}$ that $-(\hat{x}-x_{sq})^2+(\hat{x}-\underline{x})^2+(\rho^*-1) > \underline{y}(q_{sq},\eta)$. Then either $\hat{x} < \underline{x}^* < \underline{x}$ or $\hat{x} > \underline{x}^* > \underline{x}$, and the incumbent's expected utility is

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

$$+ \int_{q_{sq}-(\hat{x}-x_{sq})^2+(\hat{x}-\underline{x})^2}^{\infty} (q_I-(\hat{x}-\underline{x})^2+r)h(q_I)dq_I. \quad (21)$$

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

$$\int_{-\infty}^{q_{sq}+\underline{y}(q_{sq},\eta)} (q_{sq}-(\hat{x}-x_{sq})^2+r)h(q_I)dq_I + \int_{q_{sq}+\underline{y}(q_{sq},\eta)}^{\infty} (q_I-(\hat{x}-\underline{x}^*)^2+r)h(q_I)dq_I, \quad (22)$$

which is larger than (20). Hence, there exist $\underline{x}$ sufficiently close to $\hat{x}$ that are profitable deviations.

Finally, suppose that in equilibrium, if indifferent, the voter reelects the incumbent with probability $\rho^* = 1$, and that $\underline{x}^*$ is chosen such that $-(\hat{x}-x_{sq})^2+(\hat{x}-\underline{x}^*)^2 = \underline{y}(q_{sq},\eta)$. Hence,

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

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

$$\geq \int_{-\infty}^{q_{sq}-(\hat{x}-x_{sq})^2-r} (q_{sq} - (\hat{x} - x_{sq})^2)h(q_I)dq_I + \int_{q_{sq}-(\hat{x}-x_{sq})^2-r}^{\infty} (q_I + r)h(q_I)dq_I, \quad (23)$$

where $h(q_I) = pf(q_I) + (1-p)g(q_I)$. Rearranging, (23) is satisfied if

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

$$- \int_{q_{sq}+\underline{y}(q_{sq},\eta)}^{\infty} ((\hat{x} - \underline{x}^*)^2)h(q_I)dq_I + \int_{-\infty}^{q_{sq}-(\hat{x}-x_{sq})^2-r} (r)h(q_I)dq_I \geq 0. \quad (24)$$

Suppose in particular that q_{sq} and η are such that $\underline{y}(q_{sq}, \eta) = 0$. Furthermore, suppose $x_{sq} = 0$. Substituting in $\underline{x}^*$, as $\hat{x} \to x_{sq}$, the LHS of (24) converges to $\int_{q_{sq}-r}^{q_{sq}} (q_{sq} - q_I)h(q_I)dq_I + \int_{-\infty}^{q_{sq}-r} (r)h(q_I)dq_I$. which is positive. Since the LHS of (24) is continuous in $\hat{x}$, for $\hat{x}$ sufficiently close to x_{sq}, the incumbent chooses $\underline{x}^*$.

∎

B Robustness

Incumbent Knows Her Type Suppose the incumbent knows her type. Furthermore, suppose that in a PBE, the voter reelects the incumbent with probability $\gamma^* \in [0,1]$ if she retains the status quo, and with probability $\lambda^* \in [0,1]$ if she implements the reform. Then an incumbent of type τ_j implements the reform if and only if $q_I \geq q_{sq} - (\hat{x} - x_{sq})^2 + (\gamma - \lambda^*)r$. Note, the incumbent's strategy does not depend on her type.