Bureaucratic Sabotage and Policy Inefficiency

Kun Heo[*] and Elisa M. Wirsching[†]

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Abstract

Poor public service provision creates electoral vulnerability for politicians. Under what conditions can bureaucrats exploit this to avoid reforms they dislike? We develop a model of political accountability in which a politician must decide whether to enact a reform of uncertain value, and a voter evaluates the incumbent based on government service quality, which anti-reform bureaucrats can sabotage. We find that bureaucratic sabotage leads to two types of policy inefficiency depending on voters' perceptions of the reform's merit. Sabotage either deters politicians from enacting beneficial reforms due to electoral risks (under-reform) or prompts them to implement excessive reforms by providing bureaucrats as a scapegoat (over-reform). This result arises because obfuscation by sabotage affects voter inference differently based on their prior beliefs.

[*]Ph.D. Candidate, New York University
[†]Ph.D. Candidate, New York University

1 Introduction

In 2021, protests erupted among municipal workers in several cities over vaccine mandates for their employees. Consequently, garbage accumulation became noticeable in various neighborhoods across the country. For instance, preceding the implementation of New York City's COVID-19 vaccine mandate, sanitation workers in Staten Island and South Brooklyn left trash uncollected for over a week (ABCNews, 2021). The city's sanitation commissioner, Grayson, attributed this service lapse to the impending vaccine mandate, acknowledging that municipal garbage trucks were completing their routes with half-empty loads (Gross, 2021). This raised concerns of a deliberate slowdown by sanitation workers to push back against vaccination requirements.

Similarly, recent research indicates that local police forces adapt their service provision to express dissent against police reforms and influence city politics. Officers of the San Francisco police department, for example, strongly opposed the progressive policies of District Attorney Chesa Boudin. Making police accountability his central policy issue, Boudin charged several officers in a historical excessive-force prosecution and pushed for criminal justice reforms to slim the carceral state. During the recall campaign, San Francisco residents repeatedly raised concerns to city officials and the media that police weren't responding to crime and justified their lack of engagement with the District Attorney's reluctance to press charges (Knight, 2021; Swan, 2021). In an interview, Chesa Boudin complained that "we've seen, on body-worn camera footage, police officers telling victims there's nothing they can do and, 'Don't forget to vote in the upcoming recall election.'" (Pearson, 2022) This blame-shifting by police might have resonated with voters in a high-crime environment, who recalled the progressive District Attorney by a significant margin. Immediately after the "unfriendly" attorney was successfully removed, police notably intensified their effort in making stops and arrests again (Kyriazis, Schechter and Yogev, 2023). Similarly, in New York City, police punished city officials who supported significant cuts to the department's budget in 2020 by disproportionately slowing response times to 911 calls in these "non-aligned" council districts (Wirsching, 2023). As part of this political strategy, law enforcement unions employed various tactics to ensure voters hold political representatives accountable for poor public service provision. These tactics span from publicly shaming city officials for their policies and blaming them for crime incidents in "non-aligned" districts to instigating fear about rising crime rates if progressive city officials remain in office (Blumgart, 2020; Wirsching, 2023).

While examples of strategic work slowdowns by city bureaucrats abound, the logic, conditions, and consequences of such *bureaucratic sabotage* remain puzzling and largely unex-

plored. Why would bureaucrats engage in actions that disrupt public services when voters know they can do so for political reasons? And if this sabotage affects how voters view reform policies, why would politicians ever push for reforms that bureaucrats oppose? In this paper, we study how and when politicians' electoral vulnerability motivates bureaucrats to sabotage service provision and how the possibility of sabotage affects an incumbent's choice to enact reforms. With this framework, we shed light on a unique source of political power for bureaucrats and its consequences for public policy.

In canonical models of electoral accountability, voters rely on incomplete information from the incumbent's policy decisions and government performance to make their voting decisions. It is well-established that politicians' desire to impress the voter can affect their policy choices, sometimes acting against voters' interests (Canes-Wrone, Herron and Shotts, 2001; Gersen and Stephenson, 2014).[1]

Yet, we know less about how bureaucrats' political interests affect these dynamics. We integrate bureaucratic sabotage into a model of electoral accountability. An office-motivated incumbent chooses between a reform of unknown value and the status quo after observing a private signal about the reform's value. The voter observes the incumbent's policy choice together with a noisy signal about government service quality and decides whether to retain the incumbent for a second period or to elect the challenger. Importantly, service quality is affected by both the reform's inherent value and the bureaucrats' performance. Bureaucrats who have a fixed yet unknown degree of distaste for the reform can privately decide to engage in costly sabotage of public service provision, e.g., by refusing to work diligently. This complexity obscures the voter's interpretation since he is unable to assign responsibility for poor service provision. For example, when a community experiences a decline in safety after police reform (e.g., a budget cut), it becomes challenging for a resident to determine whether the decrease in security is due to the reform itself or a change in the behavior of police officers post-reform. Even if the reform could improve government services relative to the status quo, voters may observe lower service quality due to bureaucratic sabotage. Hence, bureaucrats can exploit their intermediary role in government to advance their policy preferences by lowering the incumbent's reelection chances in favor of the anti-reform challenger through sabotage. We show that, in equilibrium, incumbents implement reform if they are sufficiently confident about its value, bureaucrats sabotage if they are sufficiently anti-reform, and voters re-elect their representative if government performance is sufficiently high.

Our model produces several key insights. First, we show how bureaucratic sabotage affects the political equilibrium between the incumbent and the voter. A naive conclusion may be that sabotage strictly discourages the incumbent from introducing reform by increasing

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[1]For a review, see Ashworth (2012).

the probability that the voter observes poor service provision. However, we find that the possibility of sabotage can either incentivize or deter incumbents from implementing reform, contingent upon the voter's prior beliefs. If reform is initially unpopular with the voter, sabotage leads to *under-reform* compared to the optimal level: incumbents fear bureaucratic sabotage and are hesitant to implement reform. Conversely, if reform is popular, sabotage leads to *over-reform*. In this case, sabotage increases the incumbent's electoral incentive to introduce reform, although the status quo is preferable.

This result arises because sabotage has two countervailing effects on the voter's observation and action. On the one hand, sabotage directly lowers the quality of public services, thus dissuading office-motivated politicians from pursuing reform (*direct effect*). On the other hand, the voter factors in the potential for sabotage when assessing public service delivery and adjusts his reelection intentions based on the informativeness of public services (*inference effect*). We find that the direct effect and inference effect do not necessarily point in the same direction, and the inference effect dominates in equilibrium. Consequently, sabotage can both encourage and discourage reform.

Second, to shed light on the exact mechanism that produces our main result, we unpack the inference effect for the voter. When deciding whether to reelect a reform-minded incumbent after observing a particular government outcome, voters seek to optimize the accuracy of their predictions. They want to correctly identify successful reforms (true positives) while avoiding reforms that appear promising but are bound to fail (false negatives). Sabotage affects this trade-off by (1) decreasing true positives and (2) increasing false negatives. However, the impact of this obfuscation on the voter's choice is ex-ante unclear because the relative size of these effects depends on the voter's prior. If the reform is already popular with the voter, making them lenient towards the incumbent, the voter is primarily concerned about false negatives, and sabotage further increases their willingness to reelect the incumbent despite poor services. However, somewhat surprisingly, if the reform is unpopular with the voter (i.e., they are stringent towards the incumbent), sabotage strengthens their stringency, even though the voter is well aware that sabotage originates from bureaucrats. This occurs because the voter is especially weary of false positives, and, in the presence of sabotage, the voter tends to attribute high government performance to luck (false positives) rather than a successful policy (true positives).

Third, we show that bureaucrats' incentive to sabotage is non-monotonic with respect to the voter's prior belief about the reform's value. After incumbents introduce the reform, bureaucrats sabotage public services to reduce politicians' re-election probability by affecting voters' inference about the reform. The incentive to sabotage, therefore, depends on whether the voter is susceptible to information that bureaucrats mediate. When voters highly favor

the reform, bureaucrats' incentive to sabotage is low because bureaucrats only have limited ability to sway voters' support for the incumbent who initiated the reform. However, as the reform becomes *less* popular, this effect weakens, and sabotage becomes more likely. Conversely, if voters are already pessimistic about the reform's benefit, bureaucrats have little incentive to resort to costly sabotage to tarnish the reputation of politicians because the voter is already likely to perceive the reform as a failure. This effect weakens as the reform becomes *more* popular, thus increasing the probability of sabotage. As a result, bureaucrats are most incentivized to sabotage when voters are torn between the reform and the status quo and, therefore, more open to interpreting poor public service provision as informative regarding the reform's merits.

Fourth, we explore how the voter's concern for politicians' private ideology can impact these policy inefficiencies. In our baseline model, all incumbents are fully office-motivated. In an extension of the model, we allow for the possibility that incumbents are reform zealots, i.e., strictly prefer reform over no reform. Counterintuitively, when the pool of incumbents worsens (i.e., the probability of reform zealots increases), the policy inefficiencies actually *improve*. This result arises because, with the presence of reform enthusiasts, pragmatist incumbents are less able to blame bureaucrats for poor service provision. In other words, the existence of reform enthusiasts diminishes the capacity of a pragmatic incumbent to mimic the behavior of such reform enthusiasts.

2 Related Literature and Contributions

We make multiple contributions to existing scholarship on bureaucratic politics, interest group influence, political accountability, and policy sabotage.

First, our theory addresses a fundamental debate in bureaucratic politics between the public choice school—particularly Tullock (1965), Downs (1967), and Niskanen (1971)—on one side, and theories of bureaucratic control and delegation on the other (see Moe (2012) for a detailed review of these streams of work). Building on the idea that bureaucrats are rational actors primarily driven by self-interest, Niskanen (1971) famously argued that bureaucrats' private information about the true cost of government production empowers them to influence policy. In Niskanen's narrative, the interaction between the incumbent and bureaucrats is characterized by bargaining—bureaucrats, armed with private information, extract informational rent by presenting a take-it-or-leave-it offer to the incumbent, whose alternatives are less favorable than accepting the offer on average. In this framework, bureaucrats are strategic, while political actors take the backseat.

In contrast, influential theories of legislative control of bureaucracies (Miller and Moe,

1983; McCubbins, 1985; McCubbins, Noll and Weingast, 1987; Banks and Weingast, 1992) criticized Niskanen's framework for ascribing out-sized power to bureaucrats. Instead, they highlighted that the incumbent also acts strategically, employing various tools to fight back when bureaucrats try to extort their position. Specifically, they conceptualized the relationship between the incumbent and the bureaucrats as a top-down principal-agent relationship where the incumbent designs incentives, rules, and monitoring mechanisms to minimize agency loss while still leveraging bureaucratic expertise.

We reconcile these two longstanding ideas on bureaucratic politics by synthesizing a principal-agent perspective on strategic politicians with the notion of politically powerful bureaucrats. We highlight that the principal-agent relationship between the incumbent and the bureaucrats is nested within a more complex accountability mechanism, where the incumbent depends on voters whose decisions can be influenced by bureaucrats. Hence, we propose a *bottom-up* principal-agent model where bureaucrats can sway the incumbent's policy decisions by leveraging their private information, exploiting the incumbent's electoral vulnerability, and adjusting their work effort.

Second, we join a recent stream of literature in political economy that distinguishes the roles of politicians and bureaucrats in public goods provision (Ujhelyi, 2014; Yazaki, 2018; Foarta, 2023; Slough, 2024). Yet, existing research primarily focuses on issues of moral hazard in bureaucracies. A central assumption is that the successful execution of a policy requires considerable, often strenuous effort from bureaucrats. The central tension lies between the incumbent, who desires to appear competent to voters through successful policy implementation, and bureaucrats, who might fail to exert the necessary effort due to its costs or low bureaucratic quality. Consequently, incumbents adjust their policy decisions and delegation to bureaucrats based on factors influencing bureaucrats' motivation.

In contrast, we assume that politically motivated sabotage, i.e., shirking instead of working, incurs a cost to bureaucrats, e.g., because it goes against their objective to serve the public and complicates their own work.[2] The primary tradeoff for bureaucrats lies between the cost of sabotage and their influence in the election and policy-making. Sabotage can enhance bureaucrats' payoff in two main ways. By engaging in sabotage, they can make an unwanted policy look bad to the voter even if it is optimal for voter welfare, thus damaging the reputation of a politician who advocated reform. Additionally, the anticipation of sabotage may dissuade incumbents from introducing the unwanted policy in the first place. Hence, unlike bureaucrats in a moral hazard situation, bureaucrats in our framework strategically ruin the policy outcome to affect who their principals are and their choices in office.

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[2]We discuss this modeling choice in detail in Section 3.7.

Third, we speak to growing work on the role of bureaucrats as interest groups within government. We are not the first scholars to zoom in on bureaucrats' agenda power that stems from the electoral vulnerability of their elected principals. Moe (2006) argued that because bureaucrats can exercise power through the electoral process, they can influence who their principals are and what policies they choose in office, i.e., the electoral vulnerability of politicians turns them into "agents of the agents." Moe (2006) and an extensive subsequent empirical literature on the political influence of bureaucrats, particularly their public sector unions, indeed shows that bureaucrats are one of the most influential interest groups on all levels of government. Yet, importantly, this literature almost exclusively considers *direct* routes of political influence for bureaucrats through collective bargaining (Moe, 2009, 2011; Anzia and Moe, 2015; Paglayan, 2019; Zoorob, 2019), union endorsements (Moe, 2006; Hartney and Flavin, 2011; Hartney, 2022), electoral mobilization of their members (Leighley and Nagler, 2007; Anzia, 2014; Flavin and Hartney, 2015), political contributions (Moe, 2011; DiSalvo, 2015), or direct lobbying (Anzia, 2022).[3] In contrast, we explain how bureaucrats can exert policy influence through their role in government, i.e., *by the mere virtue of being bureaucrats.* Hence, we make an epistemic argument that the bureaucrats' intermediary role is one of the fundamental aspects of bureaucracy and interest group influence to which scholars should pay attention.

Fourth, we describe and micro-found a novel explanation for why bureaucratic agencies might undermine the very programs and services they provide. Several scholars have attempted to characterize recent surges of bureaucratic sabotage at the federal level, especially during the Trump administration. Some have argued that agencies sabotage their own work because, in an environment where securing legislation from Congress is difficult, US presidents pursue retrenchment by asking the administrative state to undermine itself (Noll, 2022). Others have considered the expressive benefits of "guerrilla" forms of government (O'Leary, 2020) and found that bureaucratic resistance is a result of bureaucrats navigating the moral dilemma between norms of professionalism and personal beliefs about policy (Kucinskas and Zylan, 2023). Notably, the voters are absent from these accounts. In contrast, we focus on how voters' dependence on bureaucrats to learn about policy outcomes can result in bureaucratic sabotage as a strategic choice.

Our model is closely connected to the models that study the relationship between voter information and electoral accountability. As in the many canonical models of electoral accountability following Fearon (1999), the voter faces two types of agency problems: moral hazard and adverse selection, with elections as the only tool to address both. Moral haz-

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[3]An exception is Wirsching (2023), who considers effort shirking by police officers as a crucial way of political influence for police unions after significant budget cuts in New York City in 2020.

ard arises because the incumbent has a private signal about the value of the reform. To resolve the moral hazard problem, the voter should commit to an election rule that incentivizes the incumbent to introduce the reform only if it improves the government service quality in expectation based on the observed service quality. However, since the voter has to choose between the status quo and the reform, he cannot commit to such a rule, except in a knife-edge case where the two rules coincide. We add a strategic third player (i.e., bureaucrats) to this standard setting and highlight how their unobservable signal obfuscation (i.e., sabotage) affects the political equilibrium. As we show, this obfuscation has substantial effects by changing the voter's equilibrium response to service quality as an informative signal about the incumbent's performance. Namely, the meaning of the signal crucially depends on its context, which determines the voter's reaction to the signal (Ashworth, Mesquita and Friedenberg, 2018) and the incumbent's action (Ashworth, Mesquita and Friedenberg, 2017; Bueno de Mesquita and Tyson, 2020; Bils and Izzo, 2022). In contrast to existing models where the change in the information environment is exogenous, the change operates through the endogenous actions of strategic players (i.e., bureaucrats) in our model.

This paper is also closely connected to research studying the strategic obstructions in political accountability settings (Patty, 2016; Fong and Krehbiel, 2018; Hirsch and Kastellec, 2019; Gieczewski and Li, 2021). There are two key differences between our argument and existing work. First, the voter observes neither the saboteur's preferences nor actions. Second, unlike in the models where the incumbent's electoral reputation is tied to that of a policy being sabotaged, the incumbent in our model can choose between reform and the status quo, which allows us to study the implication of bureaucratic sabotage for policy-making.

3   Baseline Model

Consider a two-period ($t = 1, 2$) political agency model with an incumbent politician (she), a representative voter (he), bureaucrats (they), and a challenger. There is an election after $t = 1$ where the voter chooses between the incumbent and the challenger as a new officeholder for $t = 2$. Players do not discount their future payoffs.[4]

3.1   Policy-Making

In $t = 1$, the incumbent must decide whether to introduce a reform or not. $t = 1$ is a window for reform, and the officeholder cannot introduce it in $t = 2$; it can only be repealed then.[5]

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[4]This is a simplifying assumption that does not affect the results qualitatively.
[5]We will discuss the justifications and the implications of this assumption in the comment.

The reform's original value to government outcome for each period, $x \in \{0, 1\}$, is unknown to the public. x can be interpreted as the reform either succeeding ($x = 1$) or failing ($x = 0$). The common prior is $\Pr[x = 1] = 1/2$.[6] If the incumbent chooses not to introduce a reform, the status quo policy is implemented. The value of the status quo policy to government outcome is known as $q \in (0, 1)$. $1 - q$ can be interpreted as the probability that reform outperforms the status quo.

Before making the decision, the incumbent *privately* observes a noisy but informative signal $r \in [0, 1]$ about the reform's value x. r is drawn from a conditional density $f(r|x)$ that satisfies the monotone likelihood ratio property. $f(0|1) = 0 < f(0|0)$, $f(1|0) = 0 < f(1|1)$, and $f(r|1)/f(r|0) : [0, 1] \to \mathbb{R}_+$ is monotonically increasing in r. Thus, a high r signals the higher likelihood for $x = 1$ relative to $x = 0$, $r = 0$ means that $x = 0$, and $r = 1$ means that $x = 1$.

3.2 Government Outcome and Sabotage

The incumbent's policy decision is public and observed by other players. In addition to the incumbent's choice, the voter observes the government outcome g. g is affected by three factors. First, it is affected by the incumbent's policy decision. Let $a \in \{0, 1\}$ indicate the incumbent's decision to introduce the reform.

Second, it is affected by bureaucrats' sabotage. Such sabotage can include a variety of measures, including dragging their feet in delivering services, overlooking service infractions, misusing their authority, or mismanaging funds. Bureaucrats get disutility $-\kappa < 0$ from having the reform in place in each period. κ is the bureaucrats' private information, and other players only know that $\kappa \sim U[0, 1]$.

If the incumbent introduces reform, bureaucrats privately observe the real value of reform x and then privately decide whether to sabotage it or not.[7] Let $s \in \{0, 1\}$ indicate the bureaucrats' choice to sabotage the reform.

Sabotage is costly for them, so they take a known cost of $c \in [0, 1]$ if they sabotage. Sabotage is costly for bureaucrats because it goes against their motivation to produce government output. This motivation can be intrinsic in the sense that bureaucrats receive utility from contributing effort to government production regardless of their political preferences, akin to what scholars call "public service motivation" (Besley and Ghatak, 2005; Forand, Ujhelyi and Ting, 2022). c might also represent extrinsic motivation to contribute to high-quality public goods because better public service facilitates bureaucrats' jobs. For instance, lower crime rates reduce the need for constant policing, and police can be assumed to benefit from a

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[6]This is for simplification. Any interior prior works in a similar way.

[7]Bureaucrats' knowledge about x does not affect the qualitative results.

sufficient level of effort. Additionally, effective sabotage likely requires costly collective action among bureaucrats, thus inducing costs c for their unions and collective organizations.[8]

Lastly, government outcome g is affected by an i.i.d. idiosyncratic shock ϵ drawn from a log-concave density $h(\cdot)$ that has full support on $\mathbb{R}$ and is symmetric around 0. Let $H(\cdot)$ denote its associated CDF.

Formally, government outcome g in period 1 is given by

$$g = a(1 - s)x + (1 - a)q + \epsilon.$$

After observing g, the voter chooses between the incumbent and the challenger for $t = 2$. Let $e \in \{0, 1\}$ indicate the voter's decision to reelect the incumbent.

3.3   Politicians' Preferences

Politicians get 1 by winning the election and 0 otherwise. They may also get a payoff from policy-making while they are in office, depending on their preference.

In the baseline model, the incumbent only cares about reelection and does not get any payoff from policy-making per se. On the other hand, the challenger is known to be an "anti-reform zealot," who prefers the status quo. The challenger gets $Z > 1$ if and only if she chooses the status quo and 0 otherwise.

3.4   Second Period

The new officeholder in $t = 2$ can only choose to repeal the reform or not if the incumbent introduced it in $t = 1$. The government outcome in period $t = 2$ is produced by

$$\tilde{g} = \begin{cases} \tilde{a}(1 - \tilde{s})x + (1 - \tilde{a})q + \tilde{\epsilon} & \text{if } a = 1 \\ q + \tilde{\epsilon} & \text{if } a = 0. \end{cases}$$

where $\tilde{a} \in \{0, 1\}$ indicates the new officeholder's decision to retain the reform, $\tilde{s} \in \{0, 1\}$ is the bureaucrats' decision to sabotage in the second period at the cost of c, and $\tilde{\epsilon}$ is the shock in the second period drawn from $h(\cdot)$.

Simply speaking, $\tilde{g} = x + \tilde{\epsilon}$ only if the officeholder chooses the reform over the status quo and bureaucrats choose not to sabotage in the second period. If not, $\tilde{g} = q + \tilde{\epsilon}$.

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[8]We further discuss this modeling choice in Section 3.7.

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3.5 Payoffs

The voter gets

$$g + \tilde{g}.$$

The incumbent gets

$$e$$

The challenger, who is zealously anti-reform, gets

$$e[1 + (1 - \tilde{a})Z].$$

The bureaucrats get

$$-a\kappa - cs - a\tilde{a}\kappa - c\tilde{s}.$$

3.6 Timing

1. The incumbent privately observes an informative signal, r, about the value of the reform.

2. The incumbent publicly chooses whether to introduce the reform ($a = 1$) or not ($a = 0$).

3. If the incumbent chooses to introduce the reform, then bureaucrats observe their disutility from reform κ and its original value x.

4. The bureaucrat privately chooses whether sabotage the reform ($s = 1$) or not ($s = 0$).

5. The government outcome g is produced, and the voter observes it.

6. The voter chooses between the incumbent and the challenger as the new officeholder in the election.

7. If the reform is in place, then the new officeholder chooses whether to repeal the reform or not.

8. Government outcome for Period 2 is produced.

9. Payoffs are realized, and the game ends.

3.7 Modeling Choices

A few clarifications are warranted before solving the model.

- **Political control of bureaucracy**: We depart from standard models of bureaucracy in that politicians cannot directly control bureaucrats' behavior. Many formal models of political delegation have explored how politicians can restrict bureaucratic behavior, including ex-ante limits on bureaucratic discretion and ex-post monitoring of their behavior (Brehm and Gates, 1997; Epstein and O'Halloran, 1999; Huber and Shipan, 2002; Huber and Mccarty, 2004). Yet, we omit the possibility of politicians monitoring bureaucrats in our model for two main reasons. First, recent work suggests that bureaucrats can undermine political control, for example, by selectively sharing information during Congressional oversight hearings (Ban, Park and You, 2024). Second, and more importantly, the institutional dynamics enabling politicians to monitor bureaucrats mainly apply to interactions between the US Congress and the federal bureaucracy. In contrast, our theory primarily applies to street-level bureaucracies, like police officers or waste collectors, who regularly interact with voters and enjoy a high degree of independence from political control. Street-level bureaucrats benefit from strong job protections provided by civil service regulations and robust public sector unions. Additionally, their roles often require significant autonomy and discretion due to the ambiguity of their task environment, which demands bureaucrats' individual and immediate decision-making (Wilson, 1978; Lipsky, 1980).

- **Costly sabotage**: We also differ from standard settings where bureaucrats choose the amount of *costly effort*. Most models on bureaucracy assume that bureaucrats have an inherent benefit from shirking their duties and show how the equilibrium level of bureaucrats' effort responds to politicians' threat of oversight and punishment (Brehm and Gates, 1997; Epstein and O'Halloran, 1999; Huber and Shipan, 2002), their investment in bureaucratic quality (Slough, 2024), or their personnel policies (Ting, 2021). In contrast, in our setting, politically motivated shirking (rather than working) is costly for the bureaucrat. As mentioned earlier, the costs associated with sabotage may stem from various factors. First, bureaucrats may act contrary to their intrinsic motivation to serve the public interest, a concept known as public service motivation (e.g., Forand, Ujhelyi and Ting (2022)). Second, poor service provision can complicate their daily tasks—for instance, crime prevention becomes more challenging for police in areas with high crime rates. Last, there's the added challenge for bureaucrats and their unions of overcoming costly collective action to mobilize political sabotage.

It is important to note that while we abstract away from the standard effort shirking by bureaucrats, we do not claim that the moral hazard of bureaucrats is irrelevant to explain public service provision. Rather, we essentially normalize moral hazard problems in the bureaucracy and focus on how the political motivations of bureaucrats can lead to *additional* shirking. That is, one can think of bureaucratic sabotage in our model as an equilibrium perturbation of bureaucrats' optimal level of effort given the usual incentives to work. To see this point, consider the motivating example of police sabotaging Chesa Boudin's tenure in office in the days prior to the recall election. Absent the political incentives to oust Boudin, it is reasonable to assume that police exerted a level of effort that minimized the usual costs of working while maximizing its benefits (e.g., avoiding monitoring and possible punishment for shirking by city officials and the public). Our model sheds light on how and why political dynamics led to further reductions of effort *away from that equilibrium* before the recall election. Indeed, recent evidence suggests that police significantly reduced the number of arrests and stops immediately prior to the recall election, while their enforcement returned to the "baseline" level after Boudin was replaced (Kyriazis, Schechter and Yogev, 2023).

- **Policy continuity**: Since the incumbent does not inherently benefit from the policy they choose, incumbents have no incentive to revert their policy choice in the second period. There are two reasons why we make this assumption. First, in reality, it is rare that politicians flip their position on a specific policy reform and therefore, it is natural to assume that the voter expects policy continuity when he reelects the incumbent.

  Secondly, as much as the incumbent not changing the policy upon her reelection is an artifice of our setup, the incumbent's incentives to flip her policy in the second period would be an artifice of an alternative two-period model with policy-motivated incumbents where the game ends without an election in the second period (at least within the current setup where the reform's value, x, is period-invariant). If $r^* > 0$, the incumbent introduces the reform if and only if the expected value of the reform given a private signal r is larger than some cutoff value. Therefore, the voter updates about the reform's value based on whether the incumbent has introduced the reform or not in the first period. If the incumbent wins the election with (or without) introducing the reform, the voter's posterior valuation of the reform is higher (or lower) than the prior. Thus, if there is another election after the second period, it is unreasonable for the voter to expect that the incumbent will revert her policy decision upon reelection because if it is incentive compatible for the incumbent to introduce/not to introduce the reform in the first period due to reelection concerns, it should also be incentive

compatible in the second period for the same reason. Hence, if there is a second election in the game, incumbents' flipping their policy is impossible.[9]

4   Analysis

The solution concept is weak Perfect Bayesian Equilibrium (Equilibrium, henceforth). We study pure strategy equilibrium where the voter reelects the incumbent if and only if $g \geq g^*$, the bureaucrats sabotage the reform if and only if $\kappa \geq \kappa^*$, and the incumbent introduces the reform if and only if $r \geq r^*$.
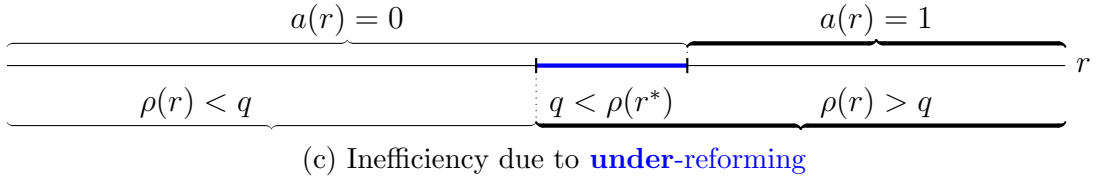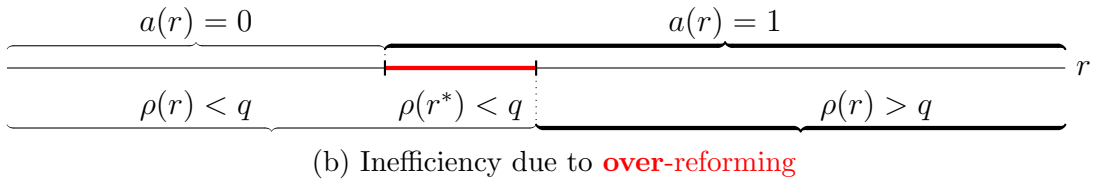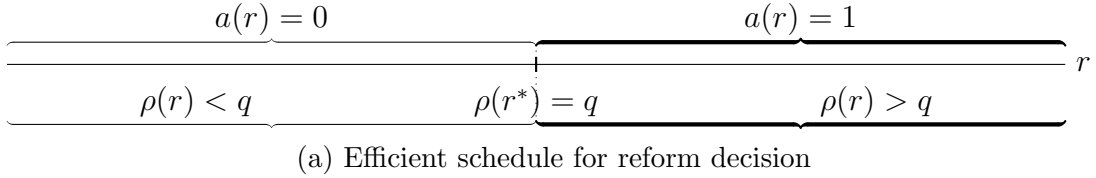
4.1   Normative Benchmark

To facilitate our analysis of how bureaucratic sabotage induces policy inefficiencies, we first establish a normative benchmark for politicians' behavior. Given r, the incumbent's posterior that reform succeeds is

$$\mathrm{E}[x|r] = \Pr[x = 1|r] = \rho(r) \equiv \frac{f(r|1)}{f(r|1) + f(r|0)},$$

which is monotonically increasing in r by f's monotone likelihood ratio property.

Figure 1: Normative Criterion and Policy Inefficiencies

(a) Efficient schedule for reform decision

(b) Inefficiency due to **over**-reforming

(c) Inefficiency due to **under**-reforming

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[9]See Andreottola (2021) for another formal explanation for policy continuity.

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Figure 1 illustrates the normative benchmark. If the incumbent maximizes voter welfare, then she should implement the reform if and only if $\rho(r) \geq q$, so $\rho(r^*) = q$. If $\rho(r^*) < q$, then there is a range of r such that the incumbent implements reform even if she deems it undesirable for the voter. We refer to this case as *over-reforming*. On the other hand, if $\rho(r^*) > q$, then there is a range of r where the incumbent does not introduce the reform even if it is optimal for the voter. We refer to this case as *under-reforming*.

4.2 Second-Period Behavior

If the challenger wins the election, then she reverts back to the status quo policy since $Z > 0$. If the incumbent wins the election, she keeps the policy from the previous period. Bureaucrats do not sabotage the reform because they incur $-c$ if they sabotage.

4.3 The Voter's Inference and Election Decision

We start by analyzing how the voter update his belief about the reform policy and cast his vote. Given the second-period behavior of the players, the election outcome has the following implications for the government outcome in $t = 2$, $\tilde{g}$.

Remark 1 *If the incumbent wins without introducing the reform or the challenger wins, then the status quo policy will be implemented in $t = 2$ and $\tilde{g} = q + \tilde{\epsilon}$. If the incumbent wins after introducing the reform, then the reform will be implemented in $t = 2$ and $\tilde{g} = x + \tilde{\epsilon}$.*

If the incumbent chooses the status quo, the voter is indifferent between the two candidates. We assume that the incumbent gets reelected with probability $1/2$ if she chooses the status quo.[10]

If the incumbent introduces reform, then the voter reelects the incumbent if and only if g signals that the expected value of the reform is larger than q.

Suppose that the incumbent introduces reform if and only if $r \geq r'$ and bureaucrats sabotage if and only if $x = 1$ and $\kappa > \kappa'$. Then, the voter infers that the conditional expectation of the reform's value x from g is $\mathrm{E}[x | r \geq r', g]$, which is given by

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[10]The assumption is innocuous; any interior probability works and does not change the results qualitatively.

$$\begin{aligned}
\Pr[x = 1|g, r \ge r'] &= \frac{1}{1 + \dfrac{\Pr[x = 0]\Pr[g, r \ge r'|x = 0]}{\Pr[x = 1]\Pr[g, r \ge r'|x = 1]}} \\[2mm]
&= \frac{1}{1 + \dfrac{\Pr[x = 0]\Pr[r \ge r'|x = 0]\Pr[g|x = 0]}{\Pr[x = 1]\Pr[r \ge r'|x = 1]\Pr[g|x = 1]}} \\[2mm]
&= \frac{1}{1 + \dfrac{1 - F(r'|0)}{1 - F(r'|1)} \dfrac{h(g)}{h(g) + \kappa'\big(h(g - 1) - h(g)\big)}}.
\end{aligned}$$

Define

$$\hat{\mathcal{L}}(g, r', \kappa') \equiv \log\left(\frac{1 - F(r'|0)}{1 - F(r'|1)} \frac{h(g)}{h(g) + \kappa'\big(h(g - 1) - h(g)\big)}\right)$$

$E[x|r \ge r', g] \ge q$ if and only if $\frac{1}{1 + \hat{\mathcal{L}}(g, r', \kappa')} \ge q \iff \hat{\mathcal{L}}(g, r', \kappa') \le \log\frac{1-q}{q}$. Therefore, there exists a unique $\hat{g}^*$ that solves

$$\hat{\mathcal{L}}(g, r', \kappa') = \log\frac{1 - q}{q}. \tag{1}$$

Further inspection of Equation (1) provides the following insights about the voter's inference and behavior:[11]

Lemma 1 *If $r' = 1$ or $\kappa' = 1$, $E[x|g] = 1/2$.*
*If $r' < 1$ and $\kappa' > 0$,*

1. *$E[x|r \ge r', g] = 1/2$ if and only if $g = 1/2$.*

2. *$E[x|r \ge r', g]$ is increasing in g. Therefore, there exists a unique $\hat{g}^*$ that solves equation (1);*

3. *$E[x|r \ge r', g]$ is increasing in r';*

4. *$E[x|r \ge r', g]$ is decreasing in the probability of sabotage $(1 - \kappa')$ if and only if $g > 1/2$, and increasing in $1 - \kappa'$ if and only if $g < 1/2$. (Inference effect)*

Intuitively, Lemma 1 states that at $g = 1/2$, the reform is equally likely to succeed or fail ($E[x|g = 1/2] = 1/2$) because the likelihood that $g = 1/2$ is drawn from the density $h(g)$ is exactly the same as the likelihood that it is drawn from the density $h(g - 1)$. If $g > 1/2$, then g is more likely to be drawn from $h(g - 1)$, so the voter infers that the reform is more likely to succeed ($x = 1$) and not be sabotaged ($s = 0$) than either to fail ($x = 0$) or be

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[11] All proofs are relegated to the Appendix A.

sabotaged ($s = 1$). In contrast, if $g < 1/2$, then the voter's inference works in the opposite way. Figure 2 illustrates this logic. (Observe that $h(g) > h(g-1)$ if and only if $g < 1/2$.).

Figure 2: Likelihood Comparison
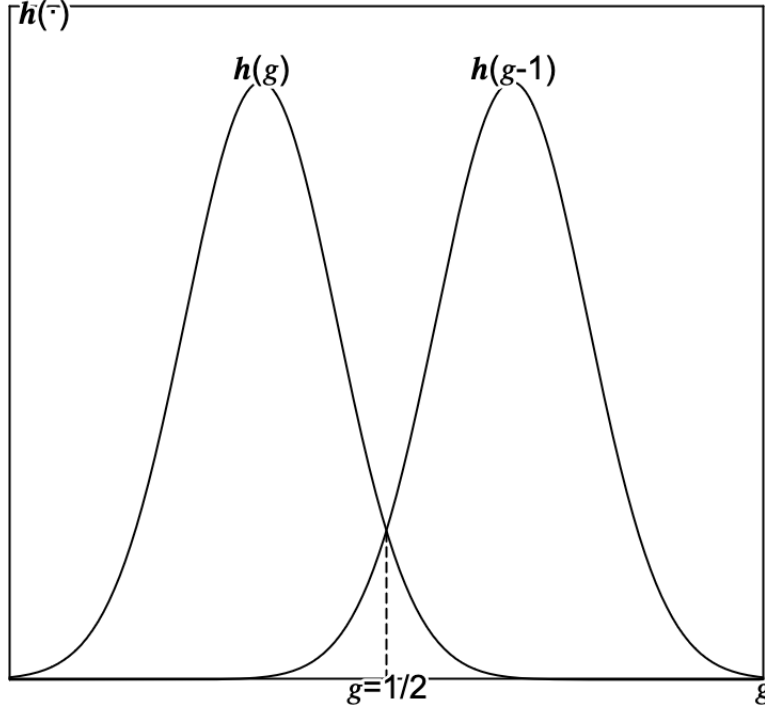
Additionally, as the incumbent becomes more stringent about when to implement reform (i.e., requires a more favorable signal r to implement reform, Lemma 1-3.), the voter increases her trust in the reform's success. Bureaucratic sabotage, in contrast, has two opposing effects on voter inference depending on the level of the government outcome g (Lemma 1-4.): As sabotage becomes more likely ($1 - k'$ increases), voters expect bureaucrats to interfere more, and the policy performance can be obfuscated more by bureaucratic action. Figure 3 shows how this impacts the voter's posterior expectations about the reform's value. Consider a high likelihood of sabotage (dotted line, low k'). The voter is less inclined to ascribe poor government outcomes (low g) to a failed reform and becomes less stringent with the incumbent. At the same time, he has less confidence in the reform's value when observing high-quality services (high g), thus becoming more stringent with the incumbent. The next section unpacks the mechanism for these two countervailing effects, which we call *inference effects of sabotage.*
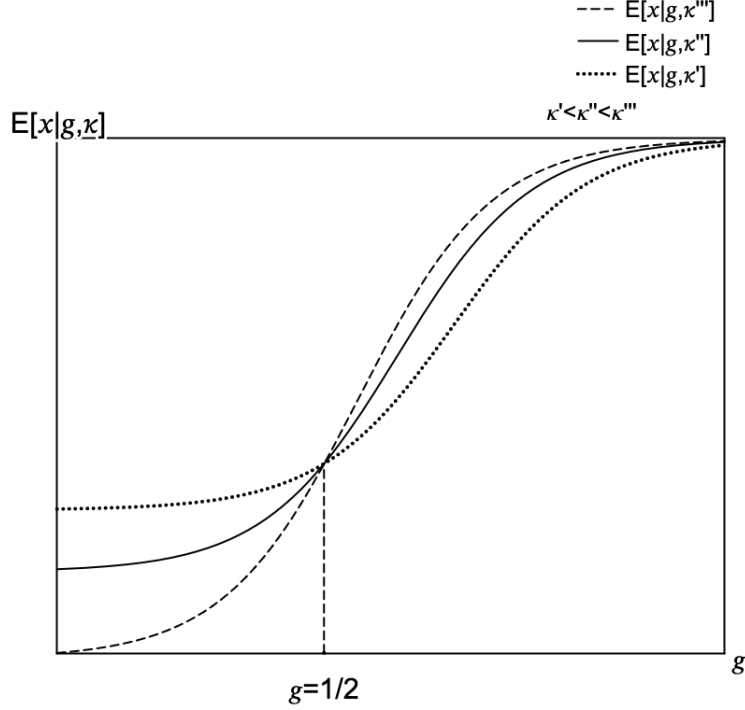
Figure 3: Sabotage's Countervailing Effects on Voter Inference

4.3.1 Sabotage and Voter Learning: Understanding Inference Effects

As the incumbent can strategically choose whether to introduce reform or not and bureaucrats can sabotage reform, g is a *obfuscated* signal of the reform's true value of x. To understand the effect of strategic obfuscation on the voter's learning, consider the benchmark case where neither player intervenes with g, and the voter observes $g = x + \epsilon$.

Suppose that, for an arbitrary cutoff g', the voter concludes that the reform will work if he observes a "positive" signal $g \geq g'$ and it will not work if he observes a "negative" signal $g < g'$. Then, we can define four events, shown in Table 1.

The voter faces a Goldilocks problem in choosing the optimal g', i.e., he cannot be either too lenient or too stringent. If he is too lenient and chooses a low g', then a positive signal $g \geq g'$ does not necessarily mean that the reform outperforms the status quo. Thus, he wants to pick a high enough g' so that the positive predictive value (PPV), i.e.

$$\Pr[x = 1 | g \geq g'] = \frac{\Pr[TP]}{\Pr[TP] + \Pr[FP]}$$

is large enough. This ensures that the reform is a better choice than the status quo in expectation, given $g \geq g'$.

On the other hand, if the voter is too stringent so that g' is too high, he risks not choosing

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Table 1: Confusion Matrix for Voter Inference

Prediction

		$g < g'$	$g > g'$
Actual condition	$x = 1$	FN	TP
	$x = 0$	TN	FP
		False omission rate (FOR) $\frac{FN}{TN+FN}$	Positive predictive value (PPV) $\frac{TP}{TP+FP}$

Notes: FN denotes false negatives; TN denotes true negatives; TP denotes true positives; FP denotes false positives.

the reform when it is better than the status quo. So, he wants to pick a low enough g' such that the false omission rate (FOR), i.e.

$$\Pr[x = 1|g < g'] = \frac{\Pr[FN]}{\Pr[TN] + \Pr[FN]}$$

is small. This ensures that the reform is expected to perform worse than the status quo given $g < g'$. Evidently, at the cutoff g', the voter is indifferent between the risk of true positives and false negatives.

Consider the impact of including the incumbent. Note that with a cutoff r', the incumbent introduces reform only if its expected value is high enough since r is an informative signal about x. Hence, if the incumbent chooses a cutoff r', failed reforms are filtered with some probability. In effect, the incumbent's strategy truncates the conditional distribution of reform's value from below. This truncation affects the voter's strategy. Particularly, the voter lowers g' since the truncation from below decreases $Pr[FP]$ and $Pr[TN]$ and, therefore, increases $Pr[x = 1|g]$. Thus, to maintain indifference at the cutoff, the voter lowers g' as the incumbent filters more failed reform by increasing r'.

Finally, consider the additional obfuscation through bureaucratic sabotage. Assume bureaucrats sabotage reform that would otherwise be successful and supported by voters (i.e., $x = 1$ and $g > g'$). Hence, with sabotage, some of the true positives turn into false negatives with probability $(1 - \kappa')$. This change has two countervailing effects. Figure 4 provides the intuition for this result. Firstly, it *decreases* $\Pr[x = 1|g \geq g']$ by lowering $\Pr[TP]$ (the blue shaded area "Sabotaged TP"). Intuitively, knowing that sabotage lowers the likelihood that the voter observes $g > g'$ when it is indeed valuable (i.e. when $x = 1$), the voter is inclined

Figure 4: The Effect of Sabotage on Voter Learning
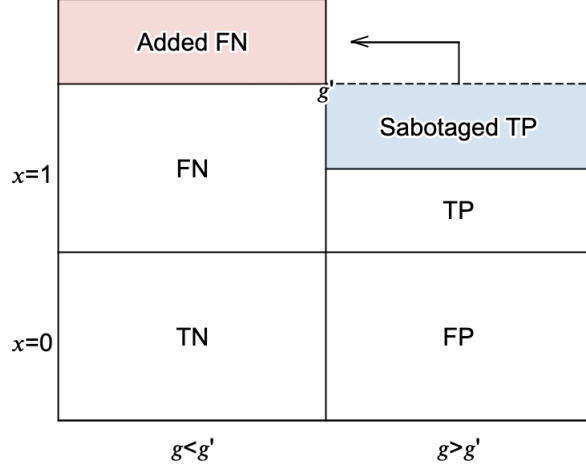
Notes: The blue shaded area "Sabotaged TP" illustrates the PPV effect. The red shaded area "Added FN" illustrates the FOR effect.

to attribute a high $g > g'$ to mere luck rather than its actual value (i.e., a false positive). Formally, for the probability of sabotage $1 - \kappa'$,

$$\Pr[x = 1 | g \geq g'] = \frac{\kappa' \Pr[TP]}{\kappa' \Pr[TP] + \Pr[FP]} < \frac{\Pr[TP]}{\Pr[TP] + \Pr[FP]}.$$

We call this the *PPV effect*.

Secondly, the change from TP to FN *increases* $\Pr[x = 1 | g < g']$ by increasing $\Pr[FN]$ (the red shaded area "Added FN"). Namely, when the voter takes into account the fact that some of the negative signals that he observes are due to sabotage, his evaluation of the reform given a negative signal will increase as sabotage becomes more likely. That is,

$$\Pr[x = 1 | g < g'] = \frac{\Pr[FN] + (1 - \kappa') \Pr[TP]}{\Pr[FN] + (1 - \kappa') \Pr[TP] + \Pr[TN]} > \frac{\Pr[FN]}{\Pr[FN] + \Pr[TN]}.$$

We call this the *FOR effect*.

Which effect dominates depends on the initial level of g'. See Figure 5 for an illustration. If g' is high enough so that $g \geq g'$ is rare, the voter is more worried about false positives than false negatives—the FOR effect is low and dominated by the PPV effect.[12] In contrast, if g' is low, the voter faces higher risks of false negatives—the FOR effect is more likely to dominate the PPV effect.[13] Taken together, the effect of sabotage on voter behavior depends on what

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[12]See Appendix B for calculations of these quantities based on Figure 5.

[13]The logic above is similar to that of the main results in Heo and Landa (2024). For further formal discussion on the decision problems with a stochastic process, see Patty and Penn (2022).

type of wrong inference the voter is most worried about. If the PPV effect dominates the FOR effect, the voter is better off being more stringent and choosing a higher g'. In contrast, if the FOR effect dominates the PPV effect, the voter is better off being more lenient and choosing a lower g'.

Figure 5: Sabotage's Effects on Voter Inference Conditional on g'
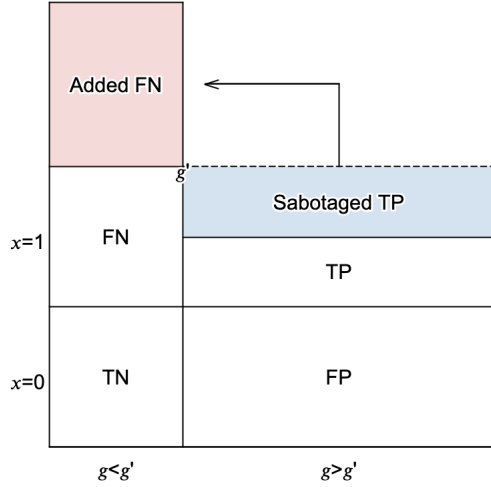
(a) When g' is low: FOR dominates PPV; sabotage decreases g'
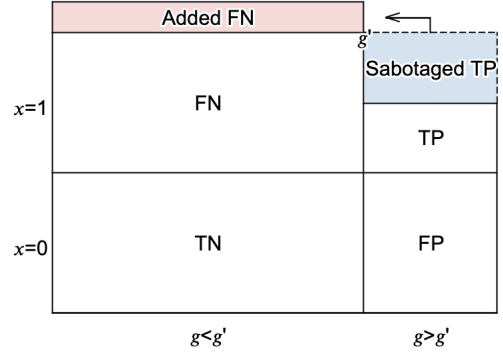
(b) When g' is high: PPV dominates FOR; sabotage increases g'

It is noteworthy that this result depends on the assumption that bureaucrats can only change TP into FN by sabotaging the reform. For instance, even if bureaucrats do not know x when they make their decision on sabotage, as long as sabotage can affect g's distribution only when the reform actually works, the logic above holds.

4.4   Bureaucrats' Sabotage Incentive

We now study bureaucrats' optimal strategy given the voter's behavior. Given $\hat{g}^*$, bureaucrats get $-\kappa\left(1 - H(\hat{g}^* - 1)\right)$ if they do not sabotage and $-\kappa\left(1 - H(\hat{g}^*)\right) - c$ if they do sabotage. Thus, they sabotage if and only if

$$-\kappa\left(1 - H(\hat{g}^* - 1)\right) \leq -\kappa\left(1 - H(\hat{g}^*)\right) - c$$
$$\kappa^* \equiv \frac{c}{H(\hat{g}^*) - H(\hat{g}^* - 1)} \leq \kappa. \tag{2}$$

$H(\hat{g}^*) - H(\hat{g}^* - 1) > 0$ is log-concave and has its peak at $\hat{g}^* = 1/2$.

Lemma 2 *The probability of sabotage, $1 - \kappa^*(\hat{g}^*)$ given an arbitrary cutoff $\hat{g}^*$ is single-peaked with respect to $\hat{g}^*$ and has its maximum at $\hat{g}^* = 1/2$.*

To see why, note that by sabotaging the reform that would have succeeded, bureaucrats horizontally shift the distribution of g left from $h(g-1)$ to $h(g)$. This change reduces the probability that the voter observes a positive enough signal to reelect a reforming incumbent. Without sabotage, the probability that the voter observes $g \geq \hat{g}^*$ is $1 - H(\hat{g}^* - 1)$. Sabotage decreases this probability to $1 - H(\hat{g}^*)$. We call this the *direct effect of sabotage*. As the gap between these two probabilities $H(\hat{g}^*) - H(\hat{g}^* - 1)$ increases, bureaucrats engage in sabotage with a smaller grievance κ and the ex-ante probability that they engage in sabotage $(1 - \kappa^*)$ increases.

Figure 6: Sabotage's Marginal Effect on Re-election
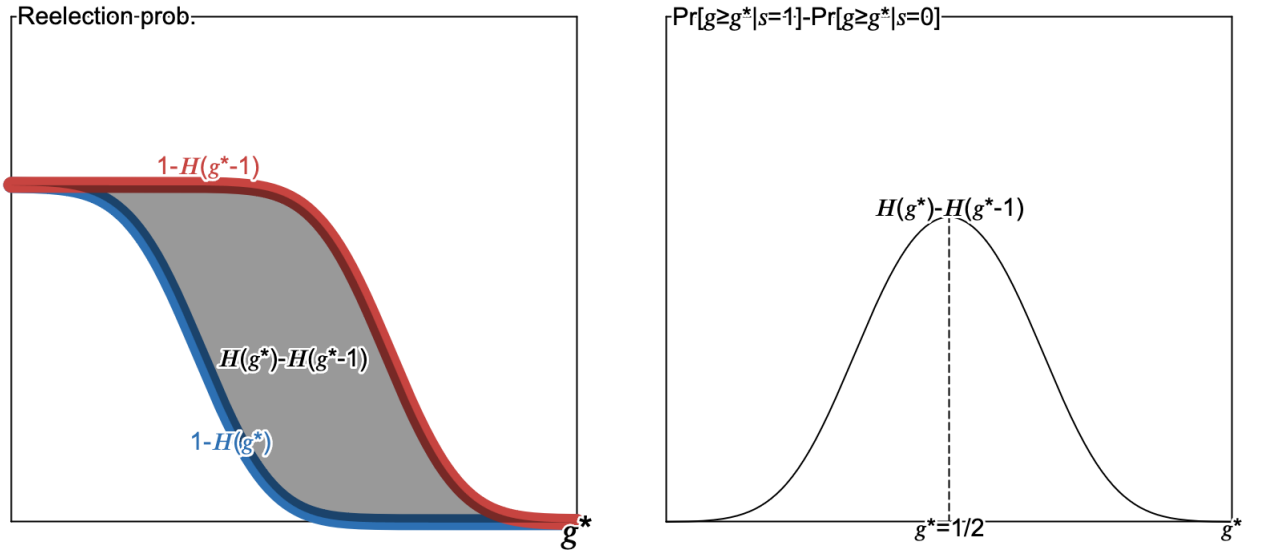
(a) The X-axis is the voter's cutoff $\hat{g}^*$ and the Y-axis is the reelection probability. The red line is the probability of reelection as a function of $\hat{g}^*$ when $x = 1$ and $s = 0$ and the blue line is the same probability when $x = 0$ or $s = 1$. The grey area between the two lines captures the marginal effect of sabotage as a function of the voter's cutoff $\hat{g}^*$.

(b) X-axis is the voter's cutoff $\hat{g}^*$ and the Y-axis is sabotage's marginal effect on reelection probability. The line $H(\hat{g}^*) - H(\hat{g}^* - 1)$ is the sabotage's marginal effect as a function of the voter's cutoff $\hat{g}^*$ (The size of the grey area on Panel (a).). Notice that it is maximized at $\hat{g}^* = 1/2$.

See Figure 6 for intuition. When $\hat{g}^* = 1/2$, the gap between the probability that the voter reelects the incumbent without and with sabotage $H(\hat{g}^*) - H(\hat{g}^* - 1)$ is largest. If the voter applies a lower or a higher cutoff than $1/2$, the probability that the incumbent gets reelected is less sensitive to sabotage. If $\hat{g}^* < 1/2$, then the voter may still observe $g \geq \hat{g}^*$ in spite of sabotage. As a result, bureaucrats engage in sabotage only if their grievances over the reform κ are high enough. On the other hand, $\hat{g}^* > 1/2$, it is unlikely that the voter

observes $g \geq \hat{g}^*$ anyway, even without sabotage, so the bureaucrats' incentive to sabotage is also smaller than when $\hat{g}^* = 1/2$.

From equation (2), we can endogenize bureaucrats' action by finding their cutoff κ^* as a function of the voter's cutoff $\hat{g}^*$: $\kappa^* = \kappa^*(q^*)$. Plug $\kappa' = \kappa^*$ in $\mathcal{L}$ to get

$$\mathcal{L}(g, r') \equiv \hat{\mathcal{L}}(g, r', \kappa^*) = \log \left(\frac{1 - F(r'|0)}{1 - F(r'|1)} \frac{h(g)}{h(g) + c\frac{h(g-1)-h(g)}{H(g)-H(g-1)}} \right). \tag{3}$$

Endogenizing κ^* preserves the qualitative results from Lemma 1. Observe the following.

Lemma 3 *For $\mathcal{L}(g, r') \equiv \hat{\mathcal{L}}(g, r', \kappa^*)$*

1. *$\mathcal{L}(g, r')$ is decreasing in g.*

2. *$\mathcal{L}(g, r')$ is decreasing in r'.*

3. *$\mathcal{L}(g, r')$ is increasing in c if and only if $g < 1/2$.*

Most notably, $\mathcal{L}$ retains the monotonic properties of $\hat{\mathcal{L}}$ with respect to g and r'. Thereofore, there exists a unique $\hat{g}^*(q, r', c)$ such that $\mathcal{L}(\hat{g}^*(q, r', c), r') = \log \frac{1-q}{q} \iff \mathrm{E}[x|g; r', c] = q$.

Corollary 1 *$\hat{g}^*(q, r', c)$ is increasing in q, decreasing in r'. It is decreasing in c if and only if it is smaller than $1/2$.*

4.5   Incumbent's Decision and Unique Equilibrium

How does the incumbent maximize her re-election chances given the bureaucrats' behavior and voter's strategy? Regardless of x, the incumbent gets $1/2$ if she chooses the status quo.

Given the conditional probability that the reform works, $\rho(r)$, the incumbent gets

$$\rho(r) \left(\kappa^* \left(1 - H(\hat{g}^* - 1) \right) + (1 - \kappa^*) \left(1 - H(\hat{g}^*) \right) \right) + [1 - \rho(r)] \left(1 - H(\hat{g}^*) \right)$$

if she introduces reform. Thus, she introduces reform if and only if

$$\rho(r) \left(\kappa^* \left(1 - H(\hat{g}^* - 1) \right) + (1 - \kappa^*) \left(1 - H(\hat{g}^*) \right) \right) + [1 - \rho(r)] \left(1 - H(\hat{g}^*) \right) \geq \frac{1}{2} \tag{4}$$

Notice that (4) can be simplified as

$$\rho(r)c + 1 - H(\hat{g}^*) \geq \frac{1}{2} \iff \rho(r) \geq \frac{H(\hat{g}^*) - 1/2}{c}$$

given equation (2). Then, there exists r^* such that

$$
r^*(\hat{g}^*) = \begin{cases} 1 & \text{if } 1 - H(\hat{g}^*) \leq 1/2 - c \\[2ex] \rho^{-1}\left(\frac{1/2 - [1 - H(\hat{g}^*)]}{c}\right) & \text{if } 1 - H(\hat{g}^*) \in \left(1/2 - c, 1/2\right) \\[2ex] 0 & \text{if } 1 - H(\hat{g}^*) \geq 1/2 \end{cases} \tag{5}
$$

Recall that $\hat{g}^*(r', q)$ is decreasing in r'. Then, there exists a unique r^* such that equation (5) holds by the intermediate value theorem, given that $\rho(r)$ is increasing in r and $\frac{1/2 - [1 - H(\hat{g}^*(r))]}{c}$ decreasing in r as it is increasing in $\hat{g}^*$. Notice that $r^*(\hat{g}^*)$ is weakly increasing in $\hat{g}^*$.

Define

$$
\mathcal{L}^*(g) \equiv \mathcal{L}(g, r^*(g)) = \log\left(\frac{1 - F(r^*(g)|0)}{1 - F(r^*(g)|1)} \frac{h(g)}{h(g) + c\frac{h(g-1) - h(g)}{H(g) - H(g-1)}}\right). \tag{6}
$$

Lemma 4   1. $\mathcal{L}^*(g)$ is decreasing in g.

2. $\mathcal{L}^*(g)$ is decreasing in c if and only if $g < 1/2$.

Therefore, there exists a unique g^* such that $\mathcal{L}^*(g) = \log\frac{1-q}{q}$. As a result, there exists a unique pair (g^*, r^*) such that equations (3) and (5) hold. Since κ^* is a function of g^* given by (2), there exists a unique vector (g^*, r^*, κ^*) that defines a unique equilibrium.

Proposition 1 *There exists a unique pure strategy equilibrium where*

1. *the incumbent introduces the reform if and only if $r \geq r^*(c, q)$;*

2. *the bureaucrats sabotage the reform if and only if it works ($x = 1$) and $\kappa \geq \kappa^*(c, q)$;*

3. *the voter reelects the incumbent who introduces the reform if and only if $g \geq g^*(c, q)$.*

4.6   Comparative Statics

We now consider how the exogenous parameters q and c affect equilibrium outcomes.

Proposition 2 *The value of the status quo q has the following effects:*

1. *The voter applies a more stringent criterion for reelecting a reforming incumbent as the status quo's value increases; $g^*(q, c)$ is increasing in q.*

2. *As the status quo's value increases, the incumbent requires a higher signal to introduce reform; $r^*(q, c)$ is weakly increasing in q.*

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3. *Bureaucrats are most likely to sabotage reform when the status quo's value is similar to the prior expected value of the reform; $1 - \kappa^*(q, c)$ is single-peaked with respect to q and takes its maximum at q^* such that $g^*(q^*, c) = 1/2$.*

As the status quo policy's value q increases, the prior probability that the reform outperforms the status quo $(1-q)$ decreases. The voter applies a more stringent criterion g^* for the government service g to reelect the incumbent who introduces the reform (Proposition 2-1). As a result, the probability that a reforming incumbent gets reelected decreases as q increases. In response, the incumbent becomes more conservative and requires a higher signal r to introduce reform as q increases (Proposition 2-2). Interestingly, as Figure 7 illustrates, the likelihood of sabotage is non-monotonic with respect to q (Proposition 2-3). This is because the sabotage's effect on the marginal reelection probability, $\Pr[g \geq g^*|s = 0] - \Pr[g \geq g^*|s = 1]$ is non-monotonic with respect to q. This is a direct corollary of the fact that g^* is monotonically increasing in q and $1 - \kappa^*$ is single-peaked with respect to g^*.

Figure 7: Illustration of Proposition 2.3
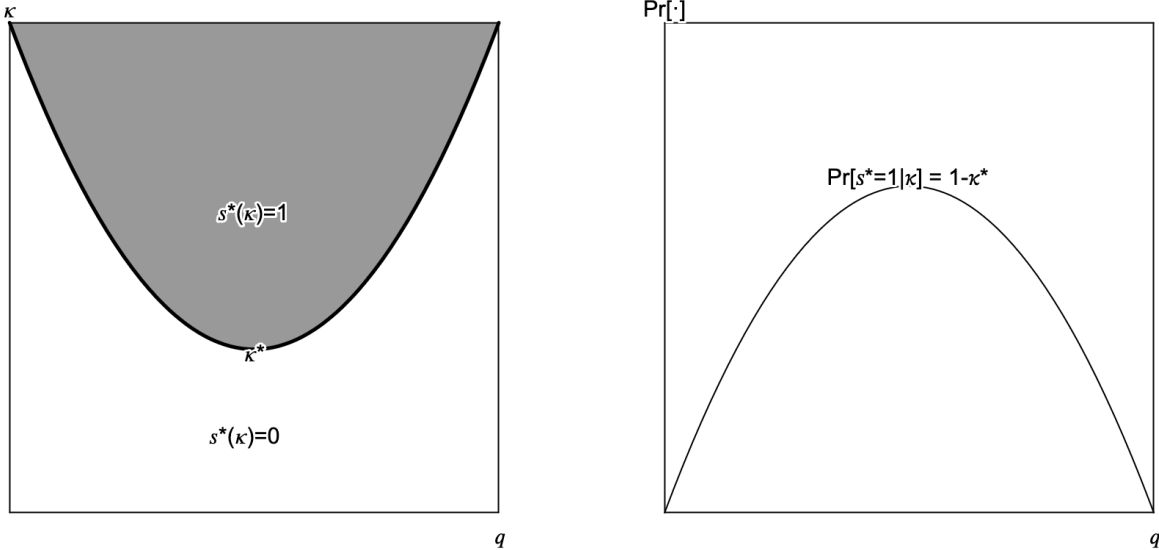
(a) Shaded area is where bureaucrats' grievance against the reform is large enough for them to sabotage it.

(b) Non-monotonic effect of q on the probability of sabotage $1 - \kappa^*$.

Proposition 3 *The cost of sabotage c has the following effects:*

1. *$r^*(q, c)$ and $g^*(q, c)$ are increasing in c if and only if $q < q^\dagger \equiv E[x = 1|g = 1/2]$.*

2. *The ex-ante probability of sabotage, $1 - \kappa^*$, is decreasing in c.*

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A high cost of sabotage decreases the likelihood of reform and the reforming incumbent's reelection probability if and only if the value of the status quo is low enough (Proposition 3-1). This is a direct corollary of Lemmas 1, 2, and 3, and Proposition 2.

Remark 2 *The effect of the cost of sabotage c can be interpreted in the following way:*

1. *For $c' > c$, $r^*(q, c')$ and $g^*(q, c')$ are mean-preserving spreads of $r^*(q, c)$ and $g^*(q, c)$.*

2. *There exists an interval $[q^*(c), q^{**}(c)]$ such that $r^*(q, c) \in (0, 1)$ if and only if $q \in [q^*(c), q^{**}(c)]$.*

3. *$q^{**}(c) - q^*(c)$ is increasing in c.*

Proposition 3 and Remark 2 have important implications for incumbents' policy choices, as illustrated in Figure 8. For different levels of c and q, Panel (a) shows the minimum posterior for the incumbent to introduce reform in equilibrium, and Panel (b) shows the equilibrium probability that the incumbent introduces reform. Evidently, if the voter highly values the status quo (high q), bureaucratic sabotage leads the politician to be overly cautious with reform and thus induces *under-reform* relative to the normative benchmark. Interestingly, however, if the voter benefits little from the status quo and has large trust in the reform's effectiveness ex-ante, bureaucratic sabotage makes the incumbent more reckless and thus induces *over-reform* relative to the normative benchmark.

This differential effect of c is driven by the relative size of the *direct effect* and the *inference effect* of sabotage. All else equal, bureaucrats have a stronger incentive to sabotage for lower costs, which has negative direct consequences for the incumbent's re-election probability (see our discussion of Lemma 2 and Figure 2). At the same time, as we discussed at length in Section 4.3.1, a higher probability of sabotage also affects voters' inference by reducing the prevalence of true positive signals and increasing the likelihood of false negative signals.

To gauge the relative size of these effects, recall that the bureaucrats' incentive to sabotage is low for extreme q (see Figure 7). Hence, the direct negative effect for the incumbent by risking reform being sabotaged remains small. The inference effects, on the other hand, are substantial for extreme q, albeit in different directions. For high levels of q, as sabotage becomes more likely, the voter is less likely to observe a high-quality government outcome (*direct effect*) while at the same time demanding a better outcome to re-elect the incumbent (*inference effect*). Both of these effects *hurt* the incumbent and lead to *under-reform*. For low levels of q, in turn, a higher likelihood of sabotage also reduces the probability of achieving a high-quality government outcome. However, given that the voter is inclined to ascribe low-quality services to bureaucrats rather than a failed reform, this direct effect is dominated

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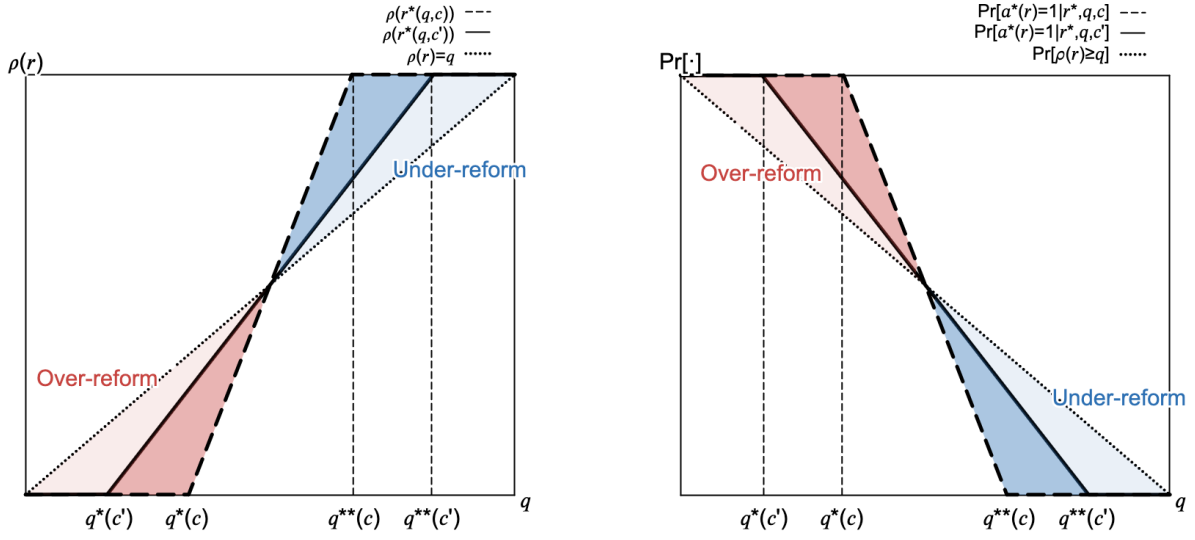
(a) The minimum posterior for the incumbent to introduce reform in equilibrium, $\rho(r^*)$.

(b) The equilibrium probability that the incumbent introduces reform as a function of q and c when $f(r|1) = 2x$ and $f(r|0) = 2(1-x)$, so $\rho(r) = r$.

Figure 8: Distortions in Reform Probability due to Sabotage, $c' > c$

by the large inference effect that makes the voter less stringent, thus resulting in *over-reform*.[14] Taken together, the possibility of sabotage deters incumbents from implementing risky reform if the voter is already weary of reform failure. At the same time, the incumbent can leverage bureaucratic sabotage to gamble on reform if the voter is ex-ante optimistic about reform, even if it is doomed to fail.[15]

Notice that when $q = q^\dagger = E[x|g = 1/2]$, there is no policy inefficiency. This implies that our model captures characteristics of both moral hazard and adverse selection in the politician-voter relationship. If the voter wanted to resolve a pure moral hazard problem, he would commit to $g^* = 1/2$ so that the incumbent's behavior is undisturbed. However, because the voter is also selecting between the reform and the status quo by deciding on the incumbent's re-election, a commitment is not incentive compatible for the voter. As selection becomes more important to the voter, moral hazard in over- and under-reform becomes more severe.

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[14]Figure A1 illustrates the inference effect of changes in c graphically.

[15]Figure A2 shows the equilibrium predictions given these dynamics of over- and under-reforming.

5   Extension: Policy Motivated Incumbent and Electoral Selection

We now consider how our results change if we allow for different incumbent types. The incumbent is now known to be either a "reform zealot" or a pragmatic, office-motivated type as in the baseline model. The incumbent's type is her private information, and the voter knows she is a pragmatic type with probability $\tau \in [0, 1]$.

The zealous, pro-reform incumbent gets

$$Za + e(1 + Z\hat{a}).$$

We assume $Z > 1$, such that a zealous type incumbent introduces the reform with probability one and maintains it if she wins the reelection. Equation (6) then becomes

$$\mathcal{L}_\tau^*(g) \equiv \log\left(\frac{\tau\left(1 - F(r^*(g)|0)\right) + (1 - \tau)}{\tau\left(1 - F(r^*(g)|1)\right) + (1 - \tau)} \frac{h(g)}{h(g) + c\frac{h(g-1)-h(g)}{H(g)-H(g-1)}}\right). \tag{7}$$

Observe the following:

Lemma 5 $\mathcal{L}^*$ *is decreasing in τ.*

Proposition 4 g^* *and r^* are weakly decreasing in τ.*

Intuitively, as the probability of a reform zealot decreases, the incumbent's policy choice becomes more informative, and, for a given signal, the voter is more optimistic about the reform's value. He, therefore, is more lenient towards the incumbent, who he assumes to be a pragmatic type, and the pragmatic incumbent is more inclined to introduce reform as a result. This has interesting implications for policy inefficiencies: Over-reform becomes more prevalent because the fact that the voter expects the incumbent to be of a better type allows these better, pragmatic types to behave worse and free-ride on bureaucrats' involvement in government production. Incumbents' type and action are, therefore, strategic substitutes. Under-reform, however, becomes less common because pragmatic types, who are in better standing with the voter, fear bureaucratic sabotage less. Type and actions are strategic complements.

6   Empirical Examples

In this section, we provide examples of under- and over-reform and illustrate how our model helps to explain various dynamics in bureaucratic politics.

6.1 Examples of Under-Reforming

The deaths of unarmed Black Americans at the hands of police in recent years, including George Floyd, Daunte Wright, Breonna Taylor, and Tyre Nichols, have sparked a movement calling for sweeping police reform. In 2020, millions marched for police reform, and lawmakers across the aisle supported reform endeavors. Arguably, in light of the evidence of widespread racial disparities and misconduct by police across the country (Ba et al., 2021; Hoekstra and Sloan, 2022), reforms of law enforcement are desirable for US society. Yet, lawmakers' support for police reform faltered in recent years, and reform policies stalled (McCaskill, 2020; Pearson, 2022). Why?

Our model suggests how resistance by powerful police organizations and their threat to sabotage reform policies might have contributed to politicians' unwillingness to follow through with reforms aimed at police accountability and transparency. In particular, our results predict that incumbents shy away from desirable reforms because of bureaucrats' threat of sabotage if voters' are sufficiently weary about the effectiveness of reforms (q is high). The difficulties to eliminate "qualified immunity" for police officers are a clear case in point. In the aftermath of George Floyd's killing, federal and state lawmakers nationwide attempted to reverse a legal principle that effectively shields police officers from being sued for violating individuals' civil rights. Yet, the respective federal bill soon stalled in Congress, as bipartisan Senate negotiations failed, and by October 2021, at least 35 qualified-immunity bills had been withdrawn or died in state legislatures (Kindy, 2021). The outspoken opposition to these reforms by police organizations played an important part in this development. Police unions bought ads in local newspapers warning that officers might hesitate to pursue criminals due to concerns about potential lawsuits and asking readers to call state legislators in opposition to the reforms (Kindy, 2021). For example, a full-page advertisement in The Boston Globe in August 2020 by 13 Massachusetts police associations read, "We are your neighbors. The bill has been hastily thrust upon our legislative leaders without any involvement from people in law enforcement or any opportunity for public comment from people like you."[16] Similarly, in opinion pieces, they asserted that crime would surge uncontrollably (Kindy, 2021). In the context of actually rising crime rates after 2020, this strategy reduced lawmakers' willingness to pursue reforms that could portray them as soft on crime. In cases where police groups could not prevent immunity reforms completely, for example in New Mexico, they often managed to shift the narrative and ensured that victims could only seek retribution from cities and counties, rather than individual officers (Kindy, 2021). Hence, by leveraging citizens' fear of crime and credibly threatening a change in the quality of law

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[16]https://bostonglobe.newspapers.com/browse/the-boston-globe_9077/2020/08/17/

enforcement, police made reforms of "qualified immunity" electoral risky and unattractive for incumbents.

6.2 Examples of Over-Reforming

Conversely, our model also explains how and when incumbents can *leverage* the possibility of sabotage for their electoral gains. If reforms are relatively popular with voters, incumbents can over-invest in policies that are doomed to fail while blaming bureaucratic sabotage for such failure. A prominent example of this is the anti-government agenda of populist incumbents, most prominently Donald Trump. At the start of his presidency, Trump inherited a bureaucracy that was both sparse and aging since the federal workforce as a percentage of the total American population had shrunk since the 1970s (Partnership for Public Service, 2019). Similarly, the compensation system for federal employees has not been reformed since 1949, and federal workers complain about rigid job classifications and excessive outsourcing of government work (Verkuil, 2017; Badger, Bui and Parlapiano, 2021). The need for reform notwithstanding, Trump leveraged "deep state" rhetoric to justify harsh policies aimed at further slimming the bureaucracy. In 2017, almost half of the American public believed the "deep state" theory.[17] Promising to "drain the swamp," Trump introduced significant cuts to various agencies and appointed high-profile critics of government departments to lead those very departments. For example, in 2017, the Office of Management and Budget (OMB) suggested substantial cuts to the budget of the Environmental Protection Agency (EPA), which would result in a one-fifth reduction in the agency's workforce during the first year and the elimination of numerous programs (Noll, 2022). To circumvent Congressional push-back, the administration eventually used a large chunk of its budget to fund buyouts that hollowed out agency staff. In September 2018, this resulted in the departure of approximately 1,600 employees from the agency, including many of its most experienced scientific personnel (Dennis, Eilperin and Tran, 2018; Noll, 2022). Additionally, Trump officials blamed "deep state" bureaucrats for policy failures. For instance, facing problems in confronting a surge of migrants at the southwestern border, Trump claimed that his desire to enforce tougher screening of asylum seekers was purposefully obstructed and delayed by bureaucrats at the Department of Homeland Security (Shear and Kanno-Youngs, 2019). Hence, by claiming that the federal bureaucracy was working to undermine his administration, Trump weaponized fears of a "deep state" bureaucracy among his supporters to legitimize overhauling government

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[17]An ABCNews/Washington Post Poll found that 48% of Americans believe that a "deep state" exists, described as "military, intelligence and government officials who try to secretly manipulate government policy." Only 35% called it a conspiracy theory. https://abcnews.go.com/Politics/lies-damn-lies-deep-state-plenty-americans-poll/story?id=47032061

institutions and to justify policy failures.

7 Conclusion & Discussion

Politicians inherently depend on bureaucrats to deliver policies to their voter base, and poor public service provision creates an electoral vulnerability for politicians. This raises the question: When and how can bureaucrats exploit this to affect policies they dislike? In this paper, we argue that bureaucrats' central position in government production, together with voters' difficulty in attributing responsibility for service provision, vests bureaucrats with a unique source of political power. To the best of our knowledge, we provide the first analysis into how this leads to strategic sabotage of public service provision by bureaucrats, affects voter learning from policy outcomes, and can impact politicians' policies and chances of re-election.

Using a three-player model with a politician, a bureaucrat, and a voter, we find that bureaucratic sabotage leads to complex and non-monotonic disruptions in electoral accountability relationships between voters and politicians. Depending on the voter's beliefs about the merit of reform policies and the observed quality of government, bureaucratic sabotage (1) can make the voter either more or less favorable to the incumbent, (2) happens more often if voters are more susceptible to government outcome, and (3) can lead to either under-reform or over-reform relative to the normative optimum.

Our model and analysis enrich our understanding of the degree of political motivations among bureaucrats and their consequences for voter learning and politicians' behavior. In doing so, we highlight an underappreciated mechanism of political influence for bureaucrats as interest groups and micro-found a reason for why bureaucrats act against the very programs and services they oversee. Additionally, we respond to recent calls to integrate interactions between politicians, bureaucrats, and voters within a single framework for studying political accountability (Grossman and Slough, 2022). Compared to conventional models of electoral accountability that examine the relationships between voters and politicians or between politicians and bureaucrats separately, this integration allows us to uncover new mechanisms influencing voter learning, service quality, and government responsiveness. It also demonstrates a novel pathway through which the information environment shapes the outcomes of accountability relationships (Ashworth, Bueno de Mesquita and Friedenberg, 2018).

This article opens several paths for future work. In our model, we focus on a simple two-period game and abstract away from potential dynamics. Particularly, we treat both the voter's perceptions about the reform's value relative to the status quo (q) and bureaucrats'

(perceived) costs of sabotage (c) as exogenous. It appears fruitful for future theoretical research to explore how our results are affected by voters' dynamic adjustment of their beliefs about the cost of sabotage or the reform's value over time.

Our model can also inform future empirical work on the drivers, conditions, and consequences of bureaucratic sabotage in several ways. In particular, one could test the comparative statics described in Propositions 2 and 3, i.e., the effect of changes in voter's beliefs about the reform's value (q) and bureaucrats' cost-benefit trade-off when sabotaging (c relative to κ) on the probability of reform ($1 - r^*$), the probability of reelection ($1 - g^*$), and the probability of sabotage ($1 - \kappa^*$). Similarly, scholars could empirically evaluate the impact of bureaucratic sabotage (i.e., variation in c) on voters' perceptions of reform merit ($\mathrm{E}[x|g, c]$), conditional on the realized government quality (g). Our results suggest that we should observe opposite effects of the propensity to sabotage on voters' preferences about reform (see Lemma 3.3). When selecting empirical cases for such analyses, scholars want to pay close attention to three issues. First, the cases should closely match the scope conditions of our theory—particularly, bureaucrats' distaste for reform, their discretion and independence from political control, and voters' difficulty in attributing the responsibility for the government outcome. The second and thornier issue concerns the source of the exogenous variation in either c or q for ceteris paribus comparisons. Particularly, it proves empirically challenging to identify valid instruments that affect one of these exogenous parameters while leaving the other unchanged. Take, for example, the case of police resistance to law enforcement reforms. Assume that a scholar sets out to study how sudden shifts in voters' attitudes toward the necessity for police reform (q) affect the degree of police sabotage, incumbents' policies, and their re-election chances. Instances of police brutality followed by widespread protests might seem like ideal shocks. However, it's important to recognize that such events have a direct impact on how police officers weigh the costs and benefits of engaging in sabotage. For example, a broader shift in the political climate following large-scale protests tends to increase police officers' concerns about potential consequences for their actions, strengthening their resistance to measures like the removal of qualified immunity (i.e., reducing c relative to κ). Hence, it is difficult to test model predictions with this design. However, other instruments, such as localized unionization of individual bureaucratic units through unionization elections (Goncalves, 2021), could be promising candidates to empirically study the effect of rapid changes in the cost of organized sabotage on its prevalence and consequences.

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Appendix: Supporting Information for
Bureaucratic Sabotage and Policy Inefficiency

A   Proofs

Proof for Lemma 1.

Lemma 1-1 and 1-2.

$$sign\frac{\partial}{\partial g^*}\hat{\mathcal{L}}(g, r', \kappa') = sign\frac{\partial}{\partial g^*}\frac{h(g)}{h(g) + \kappa'\Big(h(g-1) - h(g)\Big)}$$

A log-concave distribution satisfies the monotone likelihood ratio property with respect to horizontal shift (Saumard and Wellner, 2014), so $\frac{\partial}{\partial g^*}\frac{h(g)}{h(g)+\kappa'\big(h(g-1)-h(g)\big)} > 0$.

Since $h(g-1) = h(g)$ if and only if $g = 1/2$, $\hat{\mathcal{L}} = 0$ if and only if $g = 1/2$. ∎

Lemma 1-3.

$$sign\frac{\partial}{\partial r'}\hat{\mathcal{L}}(g, r', \kappa') = sign\frac{\partial}{\partial r'}\frac{1 - F(r'|0)}{1 - F(r'|1)}$$

$$= sign\Bigg(-\Big([1 - F(r'|1)] + \Big)f(r'|0) + \Big([1 - F(r'|0)] + \Big)f(r'|1)\Bigg)$$

Observe that this is not positive if and only if

$$\frac{f(r'|0)}{1 - F(r'|0)} \geq \frac{f(r'|1)}{1 - F(r'|1)}. \tag{8}$$

Consider an arbitrary r and $\tilde{r} > r$. By the monotone likelihood ratio property,

$$\frac{f(\tilde{r}|1)}{f(\tilde{r}|0)} \geq \frac{f(r|0)}{f(r|0)} \iff f(\tilde{r}|1)f(r|0) \geq f(r|1)f(\tilde{r}|0).$$

Then

$$f(r|0)\int_r^1 dF(\tilde{r}|1) \geq f(r|1)\int_r^1 dF(\tilde{r}|0)$$

$$\iff [1 - F(r|1)]f(r|0) \geq [1 - F(r|0)]f(r|1),$$

which implies equation (8). ∎

Lemma 1-4. Observe that

$$sign\frac{\partial}{\partial\kappa'}\hat{\mathcal{L}}(g,r',\kappa') = sign\frac{\partial}{\partial\kappa'}\frac{h(g)}{h(g) + \kappa'\Big(h(g-1) - h(g)\Big)}$$

$$= sign[h(g) - h(g-1)].$$

Since $h(g)$ is symmetric around 0 and single-peaked, $h'(g) < 0$ if $g > 0$. Notice that this implies that $h(g-1) - h(g) = 0$ if $g = 1/2$ and > 0 if $g < 1/2$. ∎ ∎

Proof for Lemma 2. It is straightforward that $sign\frac{\partial\mathcal{L}}{\partial r'} = sign\frac{\partial\hat{\mathcal{L}}}{\partial r'}$.

To see $sign\frac{\partial\mathcal{L}}{\partial g} = sign\frac{\partial\hat{\mathcal{L}}}{\partial g}$, notice that

$$\frac{h(g)}{h(g) + c\frac{h(g-1)-h(g)}{H(g)-H(g-1)}} = \frac{1}{1 + c\frac{[h(g-1)/h(g)]-1}{H(g)-H(g-1)}}$$

is decreasing in g since

$$\frac{[h(g-1)/h(g)] - 1}{H(g) - H(g-1)}$$

is increasing in g. Observe the following: $sign\frac{\partial}{\partial g^*}\frac{[h(g-1)/h(g)]-1}{H(g)-H(g-1)}$ is the same as

$$sign\left(\Big(H(g) - H(g-1)\Big)\frac{h'(g-1)h(g) - h'(g)h(g-1)}{\Big(h(g)\Big)^2} - \Big(h(g) - h(g-1)\Big)\Big(\frac{h(g-1)}{h(g)} - 1\Big)\right).$$

First, $H(g) > H(g-1)$. Then, log-concavity of h ensures $h'(g-1)h(g) - h'(g)h(g-1) > 0 \iff h'(g-1)h(g-1) > \frac{h'(g)}{h(g)}$. Notice this this holds if $\frac{\partial}{\partial g^*}\frac{h'(g)}{h(g)} < 0 \iff h''(g)h(g) < \Big(h'(g)\Big)^2$, which is a property of a log-concave function (Bagnoli and Bergstrom, 2006).

Lastly, $\Big(h(g) - h(g-1)\Big)\Big(\frac{h(g-1)}{h(g)} - 1\Big) = -h(g) - \frac{\Big(h(g-1)\Big)^2}{h(g)} < 0$. Therefore, $\frac{[h(g-1)/h(g)]-1}{H(g)-H(g-1)}$ is increasing in g.

$\mathcal{L}(g,r')$ depends on c as well. $\mathcal{L}(g,r')$ is increasing in c if and only if

$$\frac{[h(g-1)/h(g)] - 1}{H(g) - H(g-1)} < 0 \iff h(g-1) < h(g) \iff g < 1/2.$$

∎

Proof for Corollary 1. As q increases, $\log\frac{1-q}{q}$ decreases. Since $\mathcal{L}(g^*,r')$ is monotonically decreasing in g^*, g^* is increasing in q.

Since $\mathcal{L}$ is monotonic with respect to g^*, if $\mathcal{L}$ is increasing/decreasing in a parameter, g^* is increasing/decreasing as well. See (Ashworth and Mesquita, 2006). $\blacksquare$

Proof for Lemma 3. Notice $sign\frac{\partial L^*}{\partial g} = sign\frac{\partial}{\partial g}\left(\frac{1-F(r^*(g)|0)}{1-F(r^*(g)|1)}\frac{h(g)}{h(g)+c\frac{h(g-1)-h(g)}{H(g)-H(g-1)}}\right)$ and

$$\frac{\partial}{\partial g}\left(\frac{1-F(r^*(g)|0)}{1-F(r^*(g)|1)}\frac{h(g)}{h(g)+c\frac{h(g-1)-h(g)}{H(g)-H(g-1)}}\right)$$
$$= \frac{\partial}{\partial g}\left(\frac{1-F(r^*(g)|0)}{1-F(r^*(g)|1)}\right)\frac{h(g)}{h(g)+c\frac{h(g-1)-h(g)}{H(g)-H(g-1)}} + \frac{1-F(r^*(g)|0)}{1-F(r^*(g)|1)}\frac{\partial}{\partial g}\left(\frac{h(g)}{h(g)+c\frac{h(g-1)-h(g)}{H(g)-H(g-1)}}\right).$$

Notice

$$\frac{\partial}{\partial g}\frac{1-F(r^*(g)|0)}{1-F(r^*(g)|1)} = \frac{\partial r^*}{\partial g}\frac{\partial}{\partial r^*}\frac{1-F(r^*(g)|0)}{1-F(r^*(g)|1)} \leq 0$$

since $\frac{\partial r^*}{\partial g} \geq 0$ and $\frac{\partial}{\partial r^*}\frac{1-F(r^*(g)|0)}{1-F(r^*(g)|1)} \leq 0$. Recall

$$\frac{\partial}{\partial g}\frac{h(g)}{h(g)+c\frac{h(g-1)-h(g)}{H(g)-H(g-1)}} \leq 0.$$

Thus, $\frac{\partial L^*}{\partial g} \leq 0$.

Also, notice that $sign\frac{\partial\mathcal{L}^*}{\partial c} = sign\frac{\partial\mathcal{L}}{\partial c}$. $\blacksquare$

Proof for Proposition 1. See the paragraph above Proposition 1. $\blacksquare$

Proof for Proposition 2.

Proposition 2-1 and 2-2. g^* that satisfies equation (3) is increasing in q. Recall that $r^*(g)$ is increasing in g. $\blacksquare$

Proposition 2-3. Recall that κ^* is U-shaped function of g^* that attains its minimum at $g^* = 1/2$ and g^* is increasing in q. $\blacksquare$ $\blacksquare$

Proof for Proposition 3.

Proposition 3-1. Recall that $sign\frac{\partial\mathcal{L}^*}{\partial c} = sign\frac{\partial\mathcal{L}}{\partial c}$ is positive if and only if $g < 1/2$. r^* is monotonically increasing in g^* and g^* is monotonically increasing in q. $\blacksquare$

Proposition 3-2.

$$\frac{\partial \kappa^*}{\partial c} = \frac{H(g^*) - H(g^* - 1) - c\frac{\partial H(g^*) - H(g^* - 1)}{\partial c}}{[H(g^*) - H(g^* - 1)]^2} \geq 0$$

$$\iff H(g^*) - H(g^* - 1) \geq c\frac{\partial g^*}{\partial c}\frac{\partial H(g^*) - H(g^* - 1)}{\partial g^*}$$

$$\iff 1 \geq c\frac{\partial g^*}{\partial c}\frac{\frac{\partial H(g^*) - H(g^* - 1)}{\partial g^*}}{H(g^*) - H(g^* - 1)}$$

$$\iff \frac{1}{c} \geq \frac{\partial}{\partial c}\log\left(H(g^*) - H(g^* - 1)\right).$$

since

$$\frac{\partial g^*}{\partial c}\frac{\frac{\partial H(g^*) - H(g^* - 1)}{\partial c}}{H(g^*) - H(g^* - 1)} = \frac{\partial}{\partial c}\log\left(H(g^*) - H(g^* - 1)\right).$$

Recall that g^* is decreasing in c if and only if $g^* < 1/2$. Suppose that $g^* < 1/2$, so g^* is decreasing in c. As g^* decreases at $g^* < 1/2$, $H(g^*) - H(g^* - 1)$ is decreasing, so $\frac{\partial}{\partial c}\log\left(H(g^*) - H(g^* - 1)\right) < 0$. Now, suppose that $g^* > 1/2$, so g^* is increasing in c. As g^* increases at $g^* > 1/2$, $H(g^*) - H(g^* - 1)$ is decreasing, so $\frac{\partial}{\partial c}\log\left(H(g^*) - H(g^* - 1)\right) < 0$.

Thus, $\frac{\partial \kappa^*}{\partial c} \geq 0$. ∎ ∎

Proof for Lemma 4. Notice that $\mathcal{L}^*_\tau$ is increasing in τ if and only if $1 - F(r^*(g)|0) > 1 - F(r^*(g)|1)$. However, $1 - F(r'|0) < 1 - F(r'|1) \iff F(r'|0) > F(r'|1)$ for $r' > 0$, because MLRP implies the first-order stochastic dominance (Bagnoli and Bergstrom, 2006). ∎

B Example for Sabotage's Countervailing Effects on Voter Inference

Here we provide a specific example for the results discussed in Section 4.3.1, fixing the values of g' to those shown in Figure 5. The area of each cell represents the probability of each event and adds up to one. In both panels, the ex-ante total probability of successful reform

$\Pr[x = 1] = \Pr[TP] + \Pr[FN] = 1/2$. Without sabotage,

$$\Pr[x = 1|g \geq g'] = \Pr[x = 1|g < g'] = \frac{1}{2}.$$

If bureaucrats sabotage, they do so with probability $1/2$, and TP (blue shaded area in broken lines, "Sabotaged TP") becomes FN (red shaded area in solid lines, "Added FN").

In Panel (a), the voter's cutoff is high ($g' = 0.7$), so observing a high signal is rare ($\Pr[g \geq g'] = 0.3$). As sabotage decreases $\Pr[TP]$ by 50%,

$$\Pr[x = 1|g \geq g'] = \frac{\Pr[TP]}{\Pr[TP] + \Pr[FP]} = \frac{0.3 * 0.5 * 0.5}{0.3 * 0.5 * 0.5 + 0.3 * 0.5} = \frac{1}{3} < \frac{1}{2},$$

and

$$\Pr[x = 1|g < g'] = \frac{\Pr[FN]}{\Pr[FN] + \Pr[TN]} = \frac{0.7 * 0.5 + 0.3 * 0.5 * 0.5}{0.7 * 0.5 + 0.3 * 0.5 * 0.5 + 0.7 * 0.5} = \frac{0.85}{1.55} \approx 0.548 > \frac{1}{2}.$$

Evidently, the PPV effect is larger than the FOR effect.

In Panel (b), the voter's cutoff is low ($g' = 0.3$), so a positive signal is relatively more prevalent ($\Pr[g \geq g'] = 0.7$). Without sabotage,

$$\Pr[x = 1|g \geq g'] = \Pr[x = 1|g < g'] = \frac{1}{2}.$$
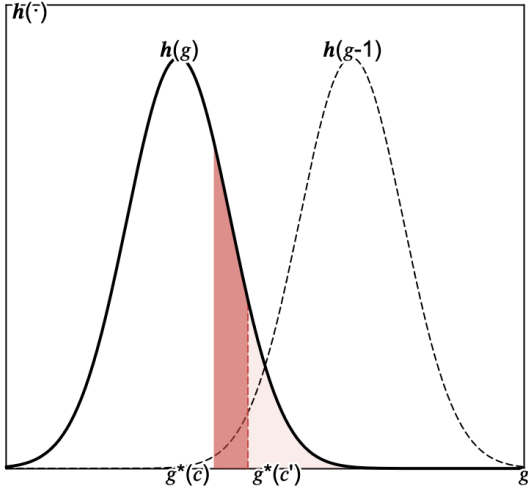
As sabotage decreases $\Pr[TP]$ by 50%,

$$\Pr[x = 1|g \geq g'] = \frac{\Pr[TP]}{\Pr[TP] + \Pr[FP]} = \frac{0.7 * 0.5 * 0.5}{0.7 * 0.5 * 0.5 + 0.7 * 0.5} = \frac{1}{3} < \frac{1}{2},$$
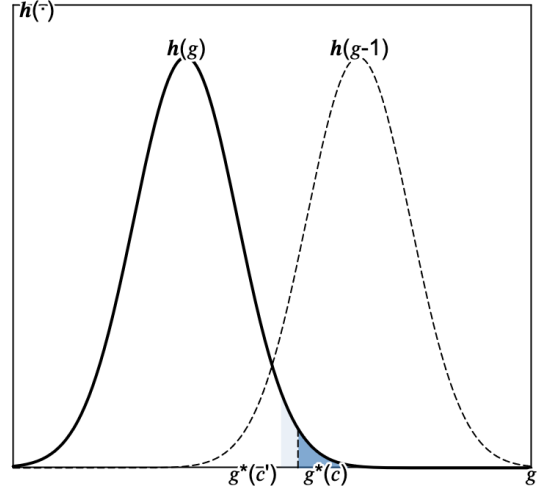
and

$$\Pr[x = 1|g < g'] = \frac{\Pr[FN]}{\Pr[FN] + \Pr[TN]} = \frac{0.3 * 0.5 + 0.7 * 0.5 * 0.5}{0.3 * 0.5 + 0.7 * 0.5 * 0.5 + 0.3 * 0.5} = \frac{0.65}{0.95} \approx 0.684 > \frac{1}{2}.$$

Here, the FOR effect is larger and dominates the PPV effect.
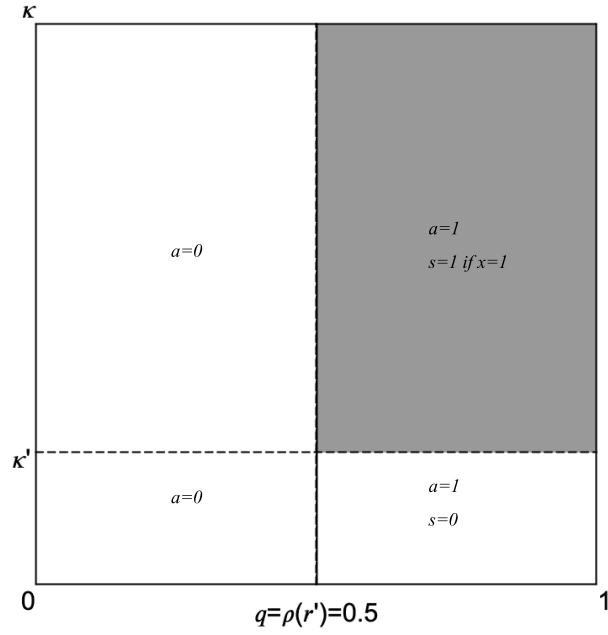
C   Additional Illustrations

(a) Low q: More sabotage $(c \rightarrow c')$ *increases* re-election chances.
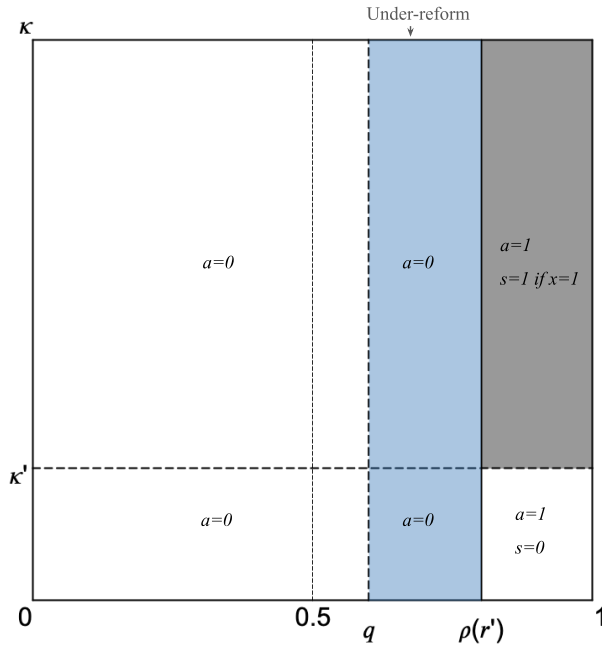
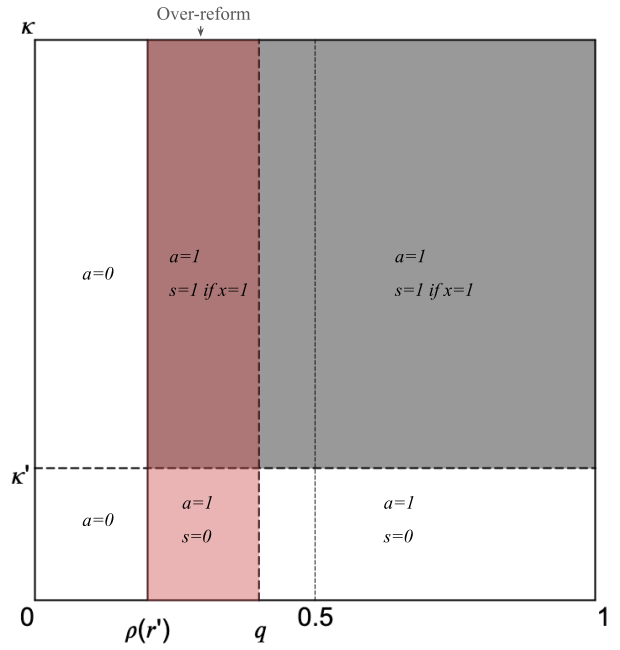(b) High q: More sabotage $(c \rightarrow c')$ *decreases* re-election chances.

Figure A1: Direct and Inference Effect of Sabotage on Policy-Making, $c' > c$

(a) Efficient Reform, $q = 0.5$

(b) Under-Reform, $q > 0.5$

(c) Over-Reform, $q < 0.5$

Figure A2: Equilibrium Outcomes