Don't Hatch The Messenger? On the Desirability of Restricting the Political Activity of Bureaucrats

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Abstract

Many countries place restrictions on the political rights of government workers. This includes limitations on political activities such as taking an active part in political campaigns. Are such restrictions desirable? We present a formal welfare analysis of this question. Bureaucrats' political activities affect voter perceptions of the government and this can have informational benefits. However, they can also induce policy mistakes and are susceptible to "noise" from some bureaucrats' innate desire for political expression. When politicians have limited control over bureaucrats and successfully coordinate with voters, bureaucrats' political activities can be desirable. In most cases, however, banning political activities is optimal.

1 Introduction

Should a clerk in the driver's license office be allowed to display political posters? Should he be allowed to praise his political overseers in local media outlets? Should he be allowed to solicit political contributions or distribute campaign materials?

Many countries place limitations on the political rights of their government workforce, and the precise extent of these limitations is the subject of ongoing public debate and policy experiments.[1] In the US, the Hatch Act of 1939 and its 1940 amendment prohibited all

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[1]Most of our discussion below focuses on the US. Epstein (1950) contrasts this case with the UK, Furi (2008) provides a description of the current issues in Canada, Pender (2019) discusses a landmark Australian court case, and Matheson et al. (2007) compares the regulations of several OECD countries. See Section 2 below for more details on the policy background.

federally funded workers from taking an active role in political campaigns, including while off-duty. Over the years, courts have interpreted this to prohibit such activities as serving on a party committee, displaying a campaign poster in the workplace, or writing a series of editorials on a presidential candidate in a newsletter for government workers. Major revisions to this law were passed in 1974, 1993 and 2012, in general relaxing some of the prohibitions for some groups of employees. In spite of this, the number of new cases of suspected Hatch Act violations has risen as recently as the period following the 2016 presidential election.[2]

The key argument for limiting the political activities of bureaucrats is that these would disrupt the efficient provision of public services. "Efficiency" here is interpreted broadly and includes maintaining the public's trust in government. For example, the US Supreme Court has noted a need to maintain not just the impartial provision of services but also *the appearance* of impartiality.[3] The typical argument against the limitations is the value of government workers' expressing their views, which is both a basic right and a potentially important source of information in politics. In evaluating the limitations, the Supreme Court explicitly established a "balancing test" where the employee's "interest as a citizen in making public comment must be balanced against the State's interest in promoting the efficiency of its employees' public services."[4]

In these arguments, the inference that voters might draw from bureaucrats' political activities plays a central role. The implicit assumption is that voters would view campaigning bureaucrats as "bad news" about government quality. However, the underpinnings of this inference require clarification. First, while voters might view a bureaucrat engaged in political campaigns as bad news, in principle they could also view this as good news - for example, if bureaucrats are only willing to campaign for high quality politicians. Second, in equilibrium voters' inference about "government" has to be consistent with the actual behavior of politicians and bureaucrats. How would politicians and bureaucrats use campaigns if they were allowed, what is the nature of voters' inferences about government quality when they see a bureaucrat who campaigns, and how do these inferences differ when campaigns are banned?

In this paper, we propose a model for studying these questions, which requires specifying bureaucrats' roles in both policy implementation and electoral politics. The model formalizes some of the conditions under which voters benefit from bureaucrats' political activities, and

[2]These violations are reported in the Office of the Special Counsel's Annual Reports to Congress, which are available at https://osc.gov/reportsandinfo. Some recent cases, like those involving White House counselor Kellyanne Conway, have focused considerable media attention on the Hatch act. See https://www.nytimes.com/2019/06/13/us/politics/kellyanne-conway-hatch-act.html

[3]*United States Civil Serv. Comm'n v. National Ass'n of Letter Carriers*, 413 U.S. 548, 1973, p565. See Bloch (2004) and Gely and Chandler (2000) for discussions.

[4]*Pickering v. Board of Education*, 391.U.S. 563, 1968, p563.

this helps us evaluate and extend arguments made in the policy debates surrounding the Hatch Act. Under some assumptions, our results provide a rationale for the evolution of regulations observed in the US, from stricter to more relaxed rules. In most cases, however, we find that banning political activities is optimal - even if voters cannot be fooled and are able to draw sophisticated inferences about government.

Our model has three players, a politician, a bureaucrat, and a voter. In the first period, a policy is implemented and the bureaucrat may engage in political activities (which we refer to as "campaigning") in support of the politician. The voter observes the implemented policy and whether the bureaucrat campaigns, and decides whether to reelect the politician. In the second period, another policy is implemented, and the game ends.

The politician may be good (share the voter's preferences) or bad. In order to get re-elected, she may do two things. First, she can attempt to implement a "popular" policy that the voter will interpret as a positive signal of her quality. Second, she may instruct the bureaucrat to campaign. Campaigns improve incumbents' electoral prospects by generating votes directly: with some probability, the voter is "impressionable" and reelects the politician if and only if the bureaucrat campaigns. In addition, campaigns also affect elections because sophisticated voters draw inferences from the presence (or absence) of a campaign. In some cases, campaigning bureaucrats will be "bad news" about government. In other cases, however, campaigning bureaucrats can serve as a positive signal of politician quality.

Learning from campaigns is hampered by the fact that these only provide indirect and noisy information to voters. While some bureaucrats, who we call "apolitical," only campaign when they are instructed to do so by the politician, others ("political") are intrinsically motivated to campaign. Political bureaucrats campaign irrespective of whether the politician directs them to do so, and this makes it more difficult for voters to learn about the politician's type from bureaucrats' political activities. In addition, campaigns can have policy costs: engaging in a campaign uses bureaucrats' resources, and may result in them performing worse on the job. This can result in a worse policy outcome.

Analyzing the equilibria of this multidimensional signaling game formalizes some of the existing policy arguments and introduces several new considerations.

First, campaigning bureaucrats need not be "bad news" about government: good politicians may use campaigns to signal their type to sophisticated voters. When policy costs are low, this will tend to make bureaucrats' political activities more desirable. At the same time, low policy costs are not sufficient for campaigns to be optimal. While campaigns can allow effective communication between politicians and voters, there are multiple equilibria, and effective communication requires coordination. The polity may end up in Pareto inferior equilibria in which politicians rely on bureaucrats' campaigns "too much," or "too little." In

this sense, allowing bureaucrats' political activities is optimal only if voters also trust that they will be used effectively.

Second, we show that a key consideration in whether political activities can fulfill their potential benefits is the nature of the interaction between politicians and bureaucrats. We compare two scenarios: weak political control, where bureaucrats can decide to say no to a politician's request for political activities, and strong control, where bureaucrats can be forced to campaign. We show that allowing political activities can only be optimal in the first case. When politicians have strong control, banning campaigns is always optimal. The reason for this asymmetry is that the signalling role of campaigns is inverted between the two environments: under weak control, bureaucrats refuse to campaign for bad politicians and good politicians use campaigning bureaucrats to signal their type, while under strong control bad politicians compel bureaucrats to campaign so that good politicians signal their type by refraining from campaigns. Thus, under strong control, campaigns can only be informative if they represent bad news about government. For this to happen, however, the policy costs of campaigns must be large, and in equilibrium these costs dominate any signalling benefits that political activities may provide.

Third, our results provide a counterpoint to standard freedom of speech considerations that would suggest that allowing campaigns is more desirable when more bureaucrats have an innate desire to campaign. Our model shows that this type of political expression also has costs: when bureaucrats are more likely to campaign without being asked to do so, this makes campaigns less informative to voters about the politician. Political bureaucrats' campaigns distort what voters can learn from the campaigns of apolitical bureaucrats, and this tends to make allowing political activities less desirable.

Finally, our model highlights that campaigning bureaucrats can complement or substitute other ways in which voters learn about politicians' quality. As in most political agency models, electoral screening can also be based on the policies implemented. Whether campaigns should be allowed depends on which screening mechanism is better and on how the two interact. We show that banning political activities can sometimes improve electoral screening through policies.[5]

Overall, our results show that even in a model where the potential informational benefits of political activities are taken into account, it is difficult to make the case that removing Hatch Act type limitations would lead to increased voter welfare.

We are not aware of a formal welfare analysis of the Hatch Act and similar regulations

[5]This idea is reminiscent of Coate (2004), where banning a form of political participation (in his case, campaign contributions) makes some actions of politicians (campaign advertising) a more effective way to signal their quality.

in the existing literature. One closely related literature is that on civil service rules, which studies the complementary issues of politicians' control over bureaucrats' policy-making abilities, and the hiring and firing of bureaucrats (Gailmard and Patty, 2007; Ting et al., 2013; Ujhelyi, 2014; Huber and Ting, 2016; Forand, 2019). In contrast to these papers we explicitly focus on bureaucrats' political activities, which provides an additional dimension through which politicians and voters interact.[6] We model a ban on political activities as an institutional constraint, and ask about the welfare effects of this constraint in a political agency framework. This approach adds more broadly to the literature on agency relationships in government which has focused on questions like the desirability of putting politicians or bureaucrats in charge of certain policies (Maskin and Tirole, 2004; Alesina and Tabellini, 2007), or incentivizing bureaucrats to better serve their clients (Besley and Ghatak, 2005; Prendergast, 2007). One particularly relevant study is the analysis by Ting (2008) of when allowing whistleblowing in government is beneficial. Both his study and ours are concerned with a bureaucrat's action conveying information to an "outsider," but while Ting (2008) looks at a bureaucrat who reveals information about a manager to a principal (the politician), we consider a bureaucrat whose action reveals information about the politician to a voter. In practice, the Hatch Act focuses specifically on the political activities of bureaucrats and is thus distinct from whistleblower protections (and from other laws governing public employees).

2 Background: Regulating the political activities of bureaucrats

In the US, the Hatch Act of 1939 and its 1940 amendment codified broad prohibitions on the political activities of all federally funded workers.[7] These workers were prohibited not just from using their "official authority or influence for the purpose of interfering with an election or affecting the outcome thereof," but also from taking "an active part in political management or in political campaigns," including while off duty (Section 9(a), Hatch Act of 1939). The Act covered all federal employees, as well as state and local government employees

[6]Relative to papers in this literature where politicians communicate with voters through only one channel (e.g., through the policies implemented by bureaucrats in Ujhelyi (2014) or by delegating authority to bureaucrats in Fox and Jordan (2011)), our setting is one of multidimensional signaling.

[7]The Hatch Act was not the first attempt to regulate political activities in the US bureaucracy. For classified federal employees, the Civil Service Commission had issued prohibitions similar to those of the Hatch Act in 1907. The history of attempts to regulate bureaucrats' political activities goes back to at least 1791, when the House rejected a bill to limit the political activities of inspectors of distilled spirits (Bloch (2004), p229). For a history of the Hatch Act and related Supreme Court cases, see, e.g., Eccles (1981), Bloch (2004) and Azzaro (2014).

funded at least in part from federal sources. Regulating state and local government employees funded wholly from non-federal sources was left to these lower level governments, and many states have over time passed "little Hatch Acts" similar to the federal act for this purpose.

Since the Hatch Act was originally passed, it has been the subject of recurring attention from both Congress and the courts. In 1974 the Federal Election Campaign Act Amendments relaxed some of the Hatch Act's prohibitions on state and local workers, allowing them to campaign for and hold office in political organizations. Additional attempts to amend the Act failed in 1976, 1977, 1988, and 1990. In 1993, another act liberalizing the Hatch Act's provisions was signed into law, allowing extensive off-duty political activities for federal employees. In 2012, the Hatch Act Modernization Act further lifted prohibitions on political activities by allowing federally funded state and local workers to participate in partisan political campaigns, as long as their salary is not entirely funded from federal sources.

The majority of the provisions of the Hatch Act and its amendments concern political activities and expression on behalf of a candidate or political party. Resulting court cases involved such matters as a federal employee serving on a political party committee, a city employee circulating campaign literature and soliciting contributions while off-duty, government workers displaying campaign posters in the workplace, or an employee writing a series of articles criticizing a presidential candidate in a magazine for federal workers (see Bloch (2004) and Azzaro (2014) for examples).[8] The number of new Hatch Act complaints was around 100 per year throughout the 1990s before rising sharply to 245 in 2005 and 526 in 2010. After a temporary decline, the number of new cases rose again after the 2016 presidential election.[9]

What are the key arguments for and against limiting the political activities of bureaucrats? In US court cases, the main argument for limiting political activities has consistently focused on efficiency. In one of the first Supreme Court cases, the court noted, "Congress and the President are responsible for an efficient public service. If, in their judgment, efficiency may be best obtained by prohibiting active participation by classified employees in politics as party officers or workers, we see no constitutional objection."[10] Over time, the Court explained that "efficiency" was to be broadly construed (Gely and Chandler, 2000).[11]

[8]Some provisions of the Hatch Act and related laws focus more specifically on prohibiting government workers from running as candidates themselves. Since this raises a different set of issues than political activities on behalf of others, we do not deal with this aspect of the prohibitions here.

[9]These figures are for the number of new complaints reported to the Office of Special Counsel, the office tasked with enforcing the Hatch Act (https://osc.gov/reportsandinfo).

[10]*United Public Workers v. Mitchell* (330 U.S. 75, 1947, p99)

[11]For example, in *Pickering v. Board of Education*, the Court considered four specific ways in which public employees' political speech could hinder efficiency. First, speech may affect "the government's ability to maintain discipline by superiors or harmony among coworkers;" second, it may impact the "personal loyalty and confidence" that may be necessary for proper functioning; third, it may hinder "an employee's

In particular, efficiency requires not only that bureaucrats actually avoid political favoritism, "but it is also critical that they appear to the public to be avoiding it, if confidence in the system of representative Government is not to be eroded to a disastrous extent."[12]

This idea that campaigning bureaucrats would hurt voters' confidence in the quality of government services also figures prominently in the British system. Indeed, this line of argument appears to be the central consideration in the development of British regulations (Epstein, 1950). In Britain, the limitations are relaxed considerably for positions that do not involve any direct contact between the bureaucrat and the public - where the danger of affecting voter perceptions is the lowest.

Historically, in the US (but apparently not in Britain), part of the rationale for the Hatch Act included placing an additional restraint on political machines (over and above existing civil service rules). The adoption of the Hatch Act followed controversies surrounding the Roosevelt administration's use of some New Deal programs for political gain. A 1938 senate investigation found that incumbents had used employees and resources of the Works Progress Administration to obtain campaign contributions and electoral support. One resulting argument emphasized that bureaucrats who campaign for the incumbent provide an electoral advantage to these politicians, while potential challengers do not have this resource at their disposal. This unfair incumbency advantage could be limited by restricting bureaucrats' political activities (Gely and Chandler, 2000; Bloch, 2004). Another line of argument emphasized the need to protect federal employees from being coerced into political activities. The argument was that, since coercion is more difficult to ascertain than the occurrence of political activities, a comprehensive prohibition on the latter was a practical way to prevent the former. As senator Carl Hatch explained during the congressional debate on the Hatch Act: "I would draw the line [between coercion and voluntary activity] if it could be drawn; but I defy ... [anyone] to draw that line." (quoted in Bloch (2004), p232).

The leading argument against limitations on political activities is of course individuals' right to freedom of expression. As one representative put it during the congressional debate preceding the adoption of the Hatch Act: "you are proposing to reach out to millions of people [...] to gag them and handcuff them in the exercise of their political rights." (quoted in Bloch (2004), p232). In evaluating the constitutionality of the limitations, the Supreme Court explicitly created a balancing test to weigh the efficiency impacts discussed above against freedom of speech considerations: the employee's "interest as a citizen in making public comment must be balanced against the State's interest in promoting the efficiency of

ability to perform his job;" and finally speech could affect "an employer's ability to provide government services in an effective manner." (Gely and Chandler, 2000, p785).

[12] *United States Civil Serv. Comm'n v. National Ass'n of Letter Carriers*, 413 U.S. 548, 1973, p565. See also Bloch (2004) and Gely and Chandler (2000).

its employees' public services." (*Pickering v. Board of Education*, 391.U.S. 563, 1968, p563).

Our model and results formalize some of these arguments, show their implications, and introduce novel considerations.

3 Model

In order to study some of the tradeoffs created by Hatch Act type regulations, we embed a politically active bureaucracy into an otherwise standard model of electoral screening (e.g., Maskin and Tirole (2004)). We first describe the model generally, and in Section 3.3 we provide a concrete interpretation through an application to government procurement. To condense the presentation of the model, we defer the discussion of our key assumptions to Section 3.4.

3.1 Setup

There are two periods and three players: a politician, a bureaucrat and a voter. In the first period, a policy outcome is implemented and, when this is permitted by law, the bureaucrat may engage in political activities. After the first period, the voter decides whether to reelect the politician based on the policy outcome and any political activities of the bureaucrat. The second period is a simplified version of the first: another policy outcome is implemented but there are no further campaigns or elections, and the game ends.

At the start of each period, a state of the world $S \in \{-1, 1\}$ is realized and observed by the bureaucrat and the politician but not the voter. State 1 is more likely: $\Pr(S = 1) = p > 1/2$. As we describe in detail below, a policy outcome $X \in \{-1, 1\}$ is jointly determined by the politician and the bureaucrat and observed by all players. We will refer to a policy outcome that matches the state ($X = S$) as "good," while a policy different from the state ($X = -S$) is "bad." Because the voter does not observe the underlying state, even though she sees the policy outcome she cannot tell whether it is good or bad. Finally, we call $X = 1$ the (ex ante) more "popular" policy outcome: state $S = 1$ is more likely, and the good policy outcome in that state is $X = 1$.

Depending on the institutional framework, the bureaucrat may engage in political activities. We will refer to these simply as "campaigning," and let $C = 1$ if the bureaucrat campaigns and $C = 0$ otherwise. There are two reasons a bureaucrat may campaign when this is permitted. First, some bureaucrats are intrinsically motivated to campaign. These bureaucrats, who we call "political," always campaign when this is allowed. The probability that the bureaucrat is political is α (with probability $1 - \alpha$, the bureaucrat is "apolitical").

Second, the politician in office may direct the bureaucrat to campaign. Whether an apolitical bureaucrat obeys this request depends on the strength of the politician's control over the bureaucracy. In Section 5 we consider the case of weak political control, where the bureaucrat can decide to say no to the politician's request. In Section 6 we study the model with strong political control, where the politician has enough power to coerce the bureaucrat to campaign. An important assumption is that an apolitical bureaucrat does not campaign if he is not directed to do so. This could reflect preferences (if these bureaucrats have a disutility from political activities) or a lack of resources (if campaigning requires resources that these bureaucrats do not have access to on their own).[13]

Bureaucratic campaigns have three effects in our model. First, they directly generate votes for the politician. We model this by assuming that with some probability the voter is impressionable and reelects the politician if and only if the bureaucrat campaigned in period 1.[14] The probability that the voter is impressionable is $(1-\rho)$; otherwise, the voter is sophisticated and makes electoral decisions at the end of period 1 that maximize her period-2 expected utility. The presence of this sophisticated voter creates the second effect of campaigns in the model. In equilibrium, campaigns will in part reflect politicians' choices, and a sophisticated voter will interpret the presence, or the absence, of campaigning bureaucrats as a signal of the politician's quality. Finally, bureaucratic campaigns impact policy outcomes. To describe this effect we need to explain politicians' and bureaucrats' role in policymaking, to which we now turn.

In each period, the politician chooses whether to take an action conducive to a good policy outcome. We will refer to this action simply as "effort," and use $x \in \{\varnothing, e\}$ to denote whether the politician exerts effort. Effort is costless. On the one hand, the politician can unilaterally ensure a bad policy outcome ($X = -S$) by exerting no effort ($x = \varnothing$). On the other hand, if the politician exerts effort ($x = e$), then the policy outcome also depends on whether the bureaucrat is campaigning. For example, a bureaucrat who campaigns may be less productive or more likely to make a mistake on the job. In particular, if the bureaucrat campaigns, the policy outcome will be good with probability $(1-\kappa)$ but bad with probability

[13]This assumption allows the politician to use bureaucrats in order to transmit information to sophisticated voters. It also rules out a counterintuitive situation in which the bureaucrat could reveal to the voter a bad politician's type by campaigning *for* her.

[14]The assumption that an impressionable voter reelects with probability 0 if the bureaucrat does not campaign is for simplicity. This can be changed to any fixed probability without qualitatively affecting our results (for an example, see our extension to negative campaigns in Appendix A.4).

κ. Formally, we have

$$\Pr(X = S|x, C) = \begin{cases} 0 & \text{if } x = \varnothing \\ 1 & \text{if } x = e \text{ and } C = 0 \\ 1 - \kappa & \text{if } x = e \text{ and } C = 1. \end{cases} \quad (1)$$

This reduced form specification of the policy process captures the idea that (i) implementing good policy outcomes requires both the politician and the bureaucrat, and (ii) campaigns can have a negative effect on policymaking.

The voter prefers good policies: in any period, she obtains a payoff of 1 if $X = S$ and 0 otherwise. The politician may be good (type G) or bad (type B), and her type is observed by the bureaucrat but not the voter. The probability that the period-1 office holder is good, or that her period-2 replacement is good if she loses the election, is Π. Good politicians are policy-motivated and public-spirited: in any period, they obtain a payoff of 1 if the good policy is implemented ($X = S$) and 0 otherwise, whether they hold office or not. Bad politicians are rent seekers whose preferences are the opposite of voters': in any period in which they are in office, they obtain a payoff of 1 if the bad policy is implemented ($X = -S$). If they are out of office or if $X = S$, they obtain a payoff of 0.[15] Apolitical bureaucrats are also public-spirited: in any period, they obtain a payoff of 1 if $X = S$ and 0 otherwise. Every player discounts period 2 payoffs by a factor $\delta < 1$. Note that voters, good politicians and apolitical bureaucrats all share the same preferences. This is an admittedly optimistic scenario, but it maximizes the scope for communication and coordination between these players. Correspondingly, this strengthens our main results, which show that bans on political activities by bureaucrats tend to improve voter welfare.

To summarize, the sequence of events is as follows.

- Period 1.

    1. Nature draws the politician's type and the state of the world S, both of which are observed by the politician and the bureaucrat but not the voter. It draws the bureaucrat's type and the voter's type, both of which are private information.
    2. The politician chooses whether to exert effort (x) and whether to ask the bureaucrat to campaign (when this is allowed). These actions are not observed by the voter.

[15] The assumption that bad politicians never have any incentives to implement good policies, which follows Maskin and Tirole (2004), is for simplicity. Our model's signalling incentives persist as long as, in all states, bad politicians are less likely to have incentives to implement good policies than good politicians.

3. The bureaucrat chooses whether to campaign, and the policy outcome X is realized. These are observed by the voter.
4. The voter decides whether to reelect the politician.

- Period 2.

1. Nature draws a new state of the world and, if the politician was not reelected, a new politician's type.
2. The politician chooses whether to exert effort. The bureaucrat does not campaign. A new policy outcome is realized, and the game ends.

3.2 Strategies and equilibrium

In period 2, good politicians find it optimal to choose action $x = e$ and bad politicians find it optimal to choose action $x = \varnothing$. Furthermore, the voter and the bureaucrat make no decisions in period 2, so that we only describe strategies for all players in period 1. Given a politician of type $\theta \in \{G, B\}$ and a state S, a policy strategy $x_S(\theta) \in \{\varnothing, e\}$ specifies the policy chosen by the politician. Denote the campaign strategy of this politician by $\gamma_S \in \{0, 1\}$ for good politicians and $\beta_S \in \{0, 1\}$ for bad politicians: this is the probability with which the politician directs the bureaucrat to campaign. For apolitical bureaucrats, a campaign strategy $c_S(\theta) \in \{0, 1\}$ describes the bureaucrat's response to a request for a campaign by a politician of type θ in state S (i.e., $c_S(\theta) = 1$ if the bureaucrat campaigns conditional on a request being made). A sophisticated voter's belief is described by the probability $\hat{\Pi}(X, C)$ that the politician is of type G conditional on observing policy outcome X and campaign activity C by the bureaucrat. A pure strategy perfect Bayesian equilibrium $(x_S, \gamma_S, \beta_S, c_S, \hat{\Pi})$, henceforth an equilibrium for short, is a profile of strategies and voter beliefs such that (i) policy choices and campaign requests are optimal for politicians given $(c_S, \hat{\Pi})$ and campaign activities are optimal for apolitical bureaucrats given $(x_S, \gamma_S, \beta_S, \hat{\Pi})$, (ii) for any policy outcome X and state S, a sophisticated voter reelects the incumbent if $\hat{\Pi}(X, C) > \Pi$, does not reelect if $\hat{\Pi}(X, C) < \Pi$, with her electoral decision unconstrained if $\hat{\Pi}(X, C) = \Pi$, and (iii) $\hat{\Pi}$ is derived from $(x_S, \gamma_S, \beta_S, c_S)$ through Bayes' rule whenever possible. Our restriction to equilibria in pure strategies prioritizes tractability and conciseness over generality. As our results show, the set of such equilibria is quite rich and offers clear lessons about the costs and benefits of allowing bureaucrats' political activities.

3.3 An application to government procurement

To fix ideas, we describe our model's main components in a stylized application. Specifically, consider the government procurement of some product or service from private firms. The product that will be procured, X, will be either product 1 or product -1, and either of these can be used to perform the desired function. There is a tradeoff between production costs and environmental impact: one of the products is cheaper to produce but has negative long-term effects on the environment (brown), the other product is more expensive but more environmentally friendly (green). The state $S \in \{1, -1\}$ denotes which product is green, with product 1 more likely to be the green one ex ante ($\Pr(S = 1) = p > 1/2$). The politician and the bureaucrat know which product is green (for example, through government experts), the voter does not.

Voters prefer a green product, and the good politician and the bureaucrat share these preferences. The bad politician prefers the cheaper brown product. One interpretation of this is that bad politicians are captured by the industry, which cares more about production costs than environmental impact. Another interpretation is that bad politicians want to economize on costs because they prefer to devote government resources to other policy activities which they value more than the voter does.[16]

The bureaucrat implements the procurement (announces the procurement, collects offers, awards the contract, and verifies that the product meets the specifications). The politician can choose whether to provide resources for the bureaucrat to do this job effectively ($x = e$) or not ($x = \varnothing$). When no resources are provided, firms are able to sell the government the brown product ($X = -S$). For example, the bureaucrat may lack the resources to monitor the procurement and verify the purchased product, or he may lack legal and institutional protections from being captured by the firms and forced to accept whatever they are selling.

If the politician does provide resources to the bureaucrat, then effective procurement depends on whether requests for political activities interfere with the bureaucrat's regular duties. When the bureaucrat is distracted by having to campaign, the probability that the government purchases the brown product is κ. When the bureaucrat is given resources *and* is not distracted, the government always purchases the green product ($X = S$).

3.4 Discussion of the model's key assumptions

Bureaucrats and electoral screening. Absent bureaucrats, our model essentially reduces to the well-known electoral screening model of Maskin and Tirole (2004) (where our good and

[16] If, as in Maskin and Tirole (2004), we interpret our single voter as the median voter of a model with heterogenous voters, then the bad politician may want to devote these resources to policy areas preferred by some non-median group of voters.

bad politicians stand for their "congruent" and "noncongruent" politicians, respectively). Our goal is to explore the Hatch Act in a minimal extension of this standard setting. Correspondingly, our modelling innovation is to integrate bureaucratic input into policy implementation,[17] as well as to capture how this input is distorted by political activities. Our key assumption here is that the actions of politicians and bureaucrats are complementary in the production of good policies, and that campaigns reduce the effectiveness of bureaucrats. Furthermore, as the head of the executive, the politician's effort is predominant, and bureaucrats cannot produce good policies on their own if the politician decides to pursue bad policies. Note that we use the term "effort" broadly, as a catch-all for politicians' various contributions to policy-making.

Relation to policy debates. Our setup aims to capture the key components of the policy debates on the regulation of bureaucrats' political activities (described in Section 2) as parsimoniously as possible. The possible inefficiencies that can arise when bureaucrats spend some of their time campaigning are captured by the policy cost κ. The possibility that campaigns give the incumbent politician an electoral advantage are represented by $1 - \rho$, the share of voters whose vote is automatically secured through campaigns. From freedom of speech arguments, we take the idea that some share α of the bureaucrats have an innate desire to engage in political activities. While we do not take a stand on the direct value of this freedom, we study how the size of α affects the desirability of political activities indirectly. Finally, we explicitly allow for the fact that bureaucrats' political activities may be coerced in the model with strong political control. We show how this possibility affects the desirability of Hatch Act-type limitations.

The nature of bureaucrats' political speech. We do not model the details of bureaucrats' political activities. Campaigns in our model may refer to any action that a politician directs a bureaucrat to do that is observed by voters and that directly generates votes for the incumbent. Campaigns may be ideological or issue-oriented - indeed the Hatch Act's prohibitions have been applied to both types of political expression. In our setup, the only direct effects of campaigns are that they distort policy-making and create an electoral advantage for the incumbent through the impressionable vote. Note that campaigning bureaucrats do not deliver "hard" insider information to voters; rather, bureaucrats make public shows of political support for the incumbent that sophisticated voters are free to interpret as they see fit. This is an important difference between political activities, which are governed by the Hatch Act, and information disclosure, which is governed by whistleblowing regulations (on the latter, see Ting (2008)). Critically, in our model the relationship between bureaucrats'

[17]This is related to extensions of the Maskin and Tirole (2004) setting that introduce team production to legislative policymaking (Fox and Van Weelden, 2010; Buisseret, 2016; Hirsch and Kastellec, 2019).

political expression and government performance is endogenous.

Negative campaigns. In the main text, our focus is on positive campaigns supporting the incumbent. This is clearly the type of political activity emphasized in the policy debates on the Hatch Act. In principle, bureaucrats can also engage in negative campaigns designed to hurt the incumbent. Given the assumption that apolitical bureaucrats do not campaign if they are not directed to do so, in our model these bureaucrats would not engage in negative campaigns even if they were allowed to (clearly, a politician would never direct her bureaucrats to engage in such campaigns). The possibility of negative campaigns by *political* bureaucrats is studied in detail in Appendix A.4, and we show that allowing for this does not affect our main conclusions. Because in this extension negative campaigns reveal that the bureaucrat is political, these are less damaging to voters than positive campaigns by these bureaucrats, which can be misattributed to apolitical bureaucrats engaged in political activities to support the incumbent.

Modelling autonomous negative campaigns by *apolitical* bureaucrats would raise a new set of issues because these bureaucrats could then use negative campaigns to signal the politician's type to the voter. In effect, bureaucrats could use campaigns as a form of whistleblowing. Because whistleblowing is both a distinct problem theoretically (Ting (2008)), and is addressed by a distinct set of regulations in practice, we do not study it in the current paper. Historically, the possibility of whistleblowing through negative campaigns does not appear to have played a major role in the policy debates surrounding the Hatch Act or its amendments.

4 Preliminaries

Our main goal is to study whether voters benefit from allowing bureaucrats to engage in political activities. To do this, we first establish some benchmark results and describe the model's outcomes when political activities are prohibited.

When political activities are prohibited, then given (1) the politician's effort choice fully determines the policy outcome X. In principle, politicians may have an incentive to implement policies that go against their preferences in period 1 in order to secure reelection. In equilibrium, this will not be the case: all politician types ensure that their stage optimal policies are implemented in all periods by choosing the appropriate effort.

Lemma 1 *In all equilibria, good politicians exert effort and bad politicians do not exert effort in period 1 ($x_S(G) = e$ and $x_S(B) = \varnothing$ for all S).*

Proof. See Appendix. ■

This result is due to discounting: the politician gets a payoff of 1 if her preferred policy X is implemented today and a payoff of $\delta < 1$ if it is implemented tomorrow. A bad politician can always secure 1 by choosing no effort. For a good politician, even if a good policy outcome gets her thrown out of office for sure while the bad policy gets her reelected, choosing $x = \varnothing$ would yield δ, while choosing $x = e$ is at worst a lottery between δ and 1, which is better. In this framework, discounting rules out pandering (politicians pooling on the popular policy in order to get reelected, regardless of whether that policy is good), which simplifies the analysis.

By Lemma 1, politicians always ensure that their favorite policy outcome is implemented in period 1, which means that good politicians are more likely to implement the popular policy $X = 1$ and bad politicians are more likely to implement the unpopular policy $X = -1$. When campaigns are prohibited, voters base their reelection decisions on policies alone. It follows that a sophisticated voter reelects the politician if and only if $X = 1$, whereas, because there are no campaigns, an impressionable voter never reelects.

Proposition 1 *If political activities by bureaucrats are prohibited, a sophisticated voter reelects the politician if and only if the popular policy outcome is implemented ($X = 1$).*

Voter welfare is determined by politicians' and bureaucrats' performance and by voters' ability to use elections to screen out bad politicians and reelect good ones. Fix any equilibrium, and let σ^G denote the likelihood of successful electoral screening when the politician is good, i.e., the the probability that, in equilibrium, a good politician is reelected. Let σ^B be the likelihood of successful screening when the politician is bad: the probability that a bad politician is thrown out of office. Let Q^G be the expected policy payoff to the voter in period 1 if a good politician is in office. (When a bad politician is in office, the voter's policy payoff in period 1 is always 0.) Voter welfare can then be written as

$$W = (1 - \Pi)\delta\Pi\sigma^B + \Pi(Q^G + \delta\sigma^G + \delta(1 - \sigma^G)\Pi).$$

The first term corresponds to a bad period-1 politician: with probability $\Pi\sigma^B$ she is replaced by a good politician in period 2. The second term is for a good period-1 politician. In this case, period-1 welfare is Q^G, while discounted period-2 welfare is δ if either the politician is reelected, or if she is thrown out but replaced with another good politician.

Collecting terms, we get

$$W = (1 - \Pi)\delta\Pi(\sigma^B + \sigma^G) + \Pi(Q^G + \delta\Pi). \tag{2}$$

The electoral impact of regulating bureaucrats' political activity is conveniently captured by

the "overall success" of electoral screening $\sigma \equiv \sigma^B + \sigma^G$, while the policy impact is measured by the quality of the period-1 policy, Q^G.

When political activities are prohibited, Proposition 1 together with Lemma 1 implies that $\sigma_\emptyset^G = p\rho$, $\sigma_\emptyset^B = p\rho + 1 - \rho$ and $Q_\emptyset^G = 1$, where the subscript $\emptyset$ stands for a regime without campaigns.[18] Thus, voter welfare in the benchmark is given by

$$W_\emptyset = (1 - \Pi)\delta\Pi(2\rho p + 1 - \rho) + \Pi(1 + \delta\Pi). \tag{3}$$

Note that, in the absence of campaigns, the voters' policy payoff from good politicians, Q^G, is maximized. This will not be the case when campaigns are allowed because of their associated policy costs. Therefore, allowing political activities can be optimal only if it increases the success σ of electoral screening.

Specifically, fix an equilibrium where political activities are allowed and the equilibrium where they are prohibited. Using (2), the welfare effect of allowing bureaucrats to campaign can be written as $W_A - W_\emptyset = \delta\Pi(1 - \Pi)(\sigma_A - \sigma_\emptyset) + \Pi(Q_A^G - Q_\emptyset^G)$, where the subscript A stands for the regime allowing campaigns. To simplify, we can divide by Π and express the welfare effect of allowing campaigns as

$$\begin{aligned}\Delta W &\equiv \frac{W_A - W_\emptyset}{\Pi} \\ &= \delta(1 - \Pi)(\sigma_A - \sigma_\emptyset) + (Q_A^G - Q_\emptyset^G) \\ &= \delta(1 - \Pi)(\sigma_A - 2p\rho - 1 + \rho) + (Q_A^G - 1).\end{aligned} \tag{4}$$

5 The political activities of bureaucrats under weak political control

As we show below, the desirability of allowing bureaucrats to engage in political activities depends critically on the nature of the interaction between politicians and bureaucrats. We first study an environment where politicians have weak control over bureaucrats: the bureaucrat may campaign but cannot be coerced to do so by the politician. We then study the case where such coercion is possible.

[18] From Proposition 1, with no campaigns, good politicians are only reelected if the voter is sophisticated and $S = 1$. Hence, $\sigma_\emptyset^G = p\rho$. Bad politicians are thrown out when this holds *or* when the voter is impressionable: $\sigma_\emptyset^B = p\rho + 1 - \rho$.

5.1 Equilibrium

When bureaucrats can refuse politicians' request for campaigns, they act as gatekeepers for politicians' attempt to communicate with voters through this channel. Since apolitical bureaucrats have the same preferences as good politicians, they will always comply with a good politician's request to campaign in equilibrium. Thus, with an apolitical bureaucrat and a good politician, a campaign will occur if and only if the politician directs it. By contrast, with an apolitical bureaucrat and a bad politician, a campaign will never occur. This is because whenever a bad politician could gain by having the bureaucrat campaign the bureaucrat would refuse, and whenever the politician could lose by having the bureaucrat campaign no request will be made.

Lemma 2 *Suppose that political control over bureaucrats is weak and that the bureaucrat is apolitical.*

1. *If the politician is good, then a campaign occurs in equilibrium if and only if it is requested by the politician ($c_S(G) \cdot \gamma_S = \gamma_S$ for all S).*

2. *If the politician is bad, then a campaign will never occur in equilibrium ($c_S(B) \cdot \beta_S = 0$ for all S).*

Lemma 2 sets the stage for a simple observation. In principle, campaigning bureaucrats need not be bad news about government: they might be used only by good politicians, and hence serve as a signal of their type. We first show that this can occur in equilibrium, and then describe the welfare effects of allowing campaigns in this case.

Note that if most bureaucrats were political, then politicians would have little role to play in bureaucrats' campaigns, and a sophisticated voter would ignore campaigns when making electoral decisions. This in turn would mean that allowing campaigns can never be beneficial.[19] To focus on the interesting cases where campaigns can be valuable, we assume that α is low in the main text and relegate other cases to the Appendix.

The following result characterizes the equilibria of our model in the case of weak political control. Given Lemmas 1 and 2, only the campaign request of the good politician and the voting decision of the sophisticated voter remain to be determined. We will refer to situations where the good politician asks for campaigns with both / neither / one of the policies as full / no / partial campaigning equilibria, respectively.

Proposition 2 *Suppose that α is sufficiently small.*

[19] As discussed in Section 4, if campaigns do not improve electoral screening, then allowing them can never raise voter welfare.

1. *An equilibrium with no campaigns ($\gamma_{-1} = \gamma_1 = 0$) exists if and only if $\kappa \geq \delta(1 - \Pi)[\rho\kappa + (1 - \rho)]$. In this equilibrium, the voter reelects if and only if the popular policy is implemented.*

2. *An equilibrium with full campaigns ($\gamma_{-1} = \gamma_1 = 1$) exists if and only if $\kappa \leq \delta(1 - \Pi)$. In this equilibrium, the voter reelects if and only if the bureaucrat campaigns.*

3. *An equilibrium with campaigns in the less likely state only ($\gamma_{-1} = 1, \gamma_1 = 0$) exists if and only if $\delta(1 - \Pi)(1 - \rho) \leq \kappa \leq \delta(1 - \Pi)$. In this equilibrium, the voter always reelects with the popular policy but reelects with the unpopular policy only if the bureaucrat campaigns.*

4. *There does not exist an equilibrium with campaigns in the more likely state only ($\gamma_{-1} = 0$, $\gamma_1 = 1$).*

Proof. See Appendix. ■

In equilibrium, whether the good politician asks an apolitical bureaucrat to campaign involves a simple tradeoff: campaigns increase the probability of reelection, by convincing both sophisticated and impressionable voters to support the incumbent; but they also decrease government performance. Therefore, in equilibrium, the intensity of campaigning is inversely related to their policy costs κ. No-campaigning equilibria exist when policy costs are high, and full-campaigning equilibria exist when they are low. Figure 1 in the Appendix illustrates the different parameter ranges.

To see the intuition behind the thresholds on campaigns' policy costs in Proposition 2, consider an equilibrium with no campaigns. Here, a sophisticated voter screens based on policy outcomes alone, reelecting the politician if and only if the popular policy is implemented. The best case for a deviation to campaigns by the good politician is when she is planning to implement the unpopular policy (in the less likely state $S = -1$). If she were to deviate to requesting a campaign, she would incur a policy cost of κ (the probability of a bad policy outcome due to a mistake by the bureaucrat). On the other hand, she would increase her probability of reelection. The latter happens either when the voter is impressionable (probability $1 - \rho$), or when she is sophisticated and the campaign leads to a policy mistake. Here the bureaucrat's mistake would result in the popular policy, and the sophisticated voter would reelect (probability $\rho\kappa$). Getting reelected is worth $\delta(1 - \Pi)$ to the good politician since this is the discounted expected value of avoiding a bad replacement politician in the next period. The condition in part 1 of Proposition 2 states that the cost of this deviation exceeds its gains.

In an equilibrium with full campaigns (and given α sufficiently low), voters reelect if and only if there is a campaign. For such an equilibrium to exist the good politician's policy cost from a campaign, κ, must be less than the value of reelection, $\delta(1-\Pi)$.

For intermediate costs, there also exist partial-campaigning equilibria. Here, a good politician who exerts effort to implement the unpopular policy uses campaigning bureaucrats to convince a sophisticated voter that this choice was necessary (while no such persuasion is required if she implements the popular policy). For this to be an equilibrium, the good politician must be willing to request campaigns while exerting effort for the unpopular policy in order to gain both sophisticated and impressionable votes: this requires $\kappa \leq \delta(1-\Pi)$. However, she must also refuse to impose the policy costs of campaigns following the popular policy in exchange for impressionable votes only: this requires $\kappa \geq \delta(1-\Pi)(1-\rho)$.[20]

There is no corresponding partial-campaigning equilibrium in which bureaucrats only campaign for politicians who implement the popular policy. The reason for this is that with weak political control, good politicians' requests for campaigns generate positive spillovers: voters attribute all observed campaigns to good politicians whenever, in equilibrium, they expect good politicians to ask for campaigns in some state. In that case, a good politician who is willing to attract both sophisticated and impressionable votes through campaigns when $S=1$ can also secure reelection through campaigns when $S=-1$, so that her campaign requests cannot differ across states.[21]

5.2 Voter welfare

Next, we turn to the welfare effects of allowing bureaucrats to campaign. In this model, bureaucrats' political activities can allow politicians to more effectively communicate with sophisticated voters. Recall that, if political activities are banned, unpopular policies always get a politician thrown out of office because a good politician cannot communicate to voters that the unpopular policy was actually in their best interest. When political activities are allowed, this becomes possible. In Proposition 2, in the partial-campaigning equilibrium, good politicians use campaigning bureaucrats to signal their type to voters when they are forced to implement an unpopular policy to maximize voters' utility. In the full-campaigning equilibrium, campaigns completely replace policies as the communication channel between

[20] Recall that in our model, politicians always attempt to ensure that their favorite policies are implemented, i.e., there is no pandering in equilibrium (Lemma 1). As pointed out by a referee, in a pandering model, allowing campaigns may affect politician effort. Specifically, a good politician may not have to choose a popular policy she knows to be bad in order to get reelected. She could choose the good, but unpopular policy, and use bureaucrats' campaigns to signal her type to voters.

[21] The difference with the partial campaigning equilibrium from case 3 is that there the voter receives the support of sophisticated voters when $S=1$ even if she does not request a campaign. This would not be the case in an equilibrium in which sophisticated voters expect campaigns when $S=1$.

voters and politicians. In this equilibrium voters reelect only if they see a campaign, and good politicians use campaigning bureaucrats to signal their type regardless of the policy that they are implementing.

Using campaigning bureaucrats as a communication channel between politicians and voters is not without costs. First, in general there is no guarantee that campaigns are a superior channel than relying on policies alone. When signaling through policies is more effective, allowing political activities may crowd out this more effective communication channel. Second, even if voters continue to use policies to evaluate politicians, campaigns can blur this signal because a policy will sometimes reflect the bureaucrat's mistake rather than the politician's action. Third, due to their policy costs, bureaucrats' campaign activities lower the expected quality of implemented policies. Whether allowing political activities is beneficial depends on comparing the impact of this regime on signaling with the negative impacts on the quality of policies.

Proposition 3 *Suppose that α is sufficiently small.*

1. *Banning campaigns by bureaucrats is optimal whenever voters expect the no-campaigning equilibrium.*

2. *When campaigns are expected in equilibrium, allowing campaigns always benefits an impressionable voter, while it may benefit or hurt a sophisticated voter. In particular,*

   (a) *Banning campaigns by bureaucrats is optimal if*

   $$\kappa \geq \kappa_P \equiv \frac{\delta(1-\Pi)}{1-p(1-\alpha)}\left[(1-p)(1-\alpha)-\alpha\rho(2p-1)\right].$$

   (b) *Allowing campaigns by bureaucrats is optimal if*

   $$\kappa \leq \kappa_F \equiv \delta(1-\Pi)\left[1-\alpha-\rho(2p-1)\right],$$

   where $\kappa_F < \kappa_P$.

   (c) *If $\kappa_F \leq \kappa \leq \kappa_P$, allowing campaigns by bureaucrats is optimal if voters expect the partial-campaigning equilibrium but banning campaigns is optimal if voters expect the full-campaigning equilibrium.*

Proof. See Appendix. ■

Part 1 of Proposition 3 describes a situation in which politicians do not use campaigning bureaucrats to communicate with sophisticated voters. In this case, only political bureaucrats campaign, and allowing these campaigns is never optimal. Here, politicians attempt to implement the same policies in the regime with and without campaigns, and voters rely exclusively on policies to screen politicians in both regimes. Allowing campaigns imposes policy costs, and hurts voters' ability to screen based on the policy.

Interestingly, while part 1 of Proposition 3 shows that politicians may use campaigns "too little," part 2(c) shows that they may also use them "too much." When $\kappa^F \leq \kappa \leq \kappa^P$, the partial-campaigning equilibrium yields higher welfare than banning political activities, but the full-campaigning equilibrium does not. Here, voters' self-fulfilling expectation that politicians would "over-use" bureaucrats if they were allowed to campaign may make it desirable to ban political activities. This is so even though, when properly utilized, allowing campaigns could make voters better off. In this sense, whether allowing political activities is desirable can depend crucially on whether voters trust that politicians will use them effectively.

Under weak political control, for sufficiently low policy cost κ allowing political activities is always optimal.[22] In this case, campaigns serve as a valuable communication channel complementing, or replacing, the implemented policies.

Figure 1 in the Appendix illustrates the different parameter ranges in Proposition 3. The following corollary describes how the different parameters of the model affect the desirability of bureaucrats' political activities.

Corollary 1 *All else equal, allowing campaigns by bureaucrats is more likely to be optimal when α, p, κ, and ρ are lower.*

Proof. See Appendix. ■

Not surprisingly, campaigns are more desirable when the policy cost κ is smaller. While κ directly lowers the quality of the implemented policy, it can also hurt sophisticated voters' ability to screen. When campaigns are allowed but voters still rely on policies for screening (as in the no-campaigning equilibrium) a higher κ makes observed policies more likely to reflect policy mistakes and hence less informative of the politician's type. This "multiplier effect" creates an additional argument in favor of banning political activities by bureaucrats when policy costs are large.

Corollary 1 also shows that allowing political activities is more desirable when there are fewer political bureaucrats (lower α) and when the variance of the state is larger (p closer to

[22] For low enough κ, Proposition 2 shows that campaigns are always used in equilibrium, and Part 2(b) of Proposition 3 shows that allowing campaigns is always optimal in this case.

1/2). These effects make campaigns a more effective communication channel than policies. With fewer political bureaucrats, campaigns are less "noisy" and more likely to reflect the politician's type rather than bureaucrats' own desire to campaign. When p is closer to 1/2, screening based on policies alone is less effective because the policy outcomes generated by the two types of politicians are more similar ex ante. This makes the signals about incumbent quality provided by campaigns more valuable.

Perhaps surprisingly, political activities are also more desirable when the probability of a sophisticated voter (ρ) is low. Even though any improvement in communication is only realized when the voter is sophisticated, an impressionable voter always benefits unambiguously from campaigns. When the voter is more likely to be impressionable, allowing political activities is more likely to raise voter welfare. This result turns out to be specific to this environment with weak political control: as we shall see in Section 6, an impressionable voter always loses when bad politicians have enough leverage over bureaucrats to force them to campaign.

6 The political activities of bureaucrats under strong political control

We now turn to an environment with strong political control. Specifically, we assume that the politician can simply direct the bureaucrat to campaign (i.e., we impose the constraint that $c_S(G) = 1$ and $c_S(B) = 1$ for all S). In parallel with Section 5, we first describe how this affects the equilibria of the model, and then study the welfare impact of allowing campaigns in this environment.[23]

6.1 Equilibrium

In this environment, the control over communication through campaigns lies squarely with politicians. In stark contrast with the case of weak political control, this means that bad politicians always direct bureaucrats to campaign.

Lemma 3 *Suppose that political control over bureaucrats is strong and that the bureaucrat is apolitical. If furthermore the politician is bad, then a campaign will always occur in equilibrium ($c_S(B) \cdot \beta_S = 1$ for all S).*

[23]While it may seem that weakening political control over bureaucrats through civil service rules should precede Hatch Act type restrictions, historically the two types of rules have evolved in parallel. As described in Section 2, one of the stated goals of the original Hatch Act was to weaken party machines in an era of strong political control. Thus, it makes sense to consider restrictions on political activities under both weak and strong control.

Proof. See Appendix. ■

Because campaigns always induce an impressionable voter to reelect, bad politicians will always request campaigns if these at least weakly increase the likelihood that a sophisticated voter would also reelect them. But if a bad politician failed to request campaigns for one of the policies, then observing a campaign with that policy can never be bad news for a sophisticated voter. At worst, the voter would attribute the campaign to political bureaucrats and make the same reelection decision with and without the campaign. But then the bad politician should still choose to campaign in order to get the impressionable vote. Therefore, bad politicians must direct bureaucrats to campaign in all equilibria.[24]

The simple observation underlying Lemma 3 immediately implies two ways in which the institutional environment regulating politicians' interactions with the bureaucracy alters the nature of bureaucrats' political activities. First, under weak political control bad politicians were never able to use apolitical bureaucrats to obtain the support of impressionable voters. Under strong control, bad politicians *always* rely on the political activities of bureaucrats to obtain the impressionable vote. Second, strong political control inverts the informational role of bureaucratic campaigns, in that a politically inactive bureaucracy is now a positive signal of politician quality. Observing a bureaucrat who campaigns can now reveal the politician's bad type and allow a sophisticated voter to throw him out of office. Similarly, observing a bureaucrat who does not campaign can reveal a good politician's type. In this environment, observing a campaign can never be good news about government for the voter - but campaigns can still improve communication, because *not* observing a campaign can be good news.[25]

The following proposition completes the characterization of the equilibria of the model with strong political control by describing the campaign requests of the good politician and the voting decisions of the sophisticated voter. As before, we refer to full / no / partial campaigns to describe the good politician's equilibrium strategy (from Lemma 3, we know that bad politicians always ask for campaigns). To ensure comparability of our results with those of Section 5, we focus on characterizing equilibria in the case where most bureaucrats are apolitical (α small). Appendix A.3 establishes our equilibrium results for all values of α.[26]

[24]This, of course, is just a necessary condition: in the equilibria that we present below, we will need to ensure that bad politicians have incentives to direct bureaucrats to campaign, even if this reveals their type to sophisticated voters.

[25]This is similar to situations where a public official's reputation is enhanced by the *absence* of political scandals.

[26]As the proofs make clear, parameter ranges outside those described below have no pure strategy equilibria.

Proposition 4 *Suppose that α is sufficiently small.*

1. *An equilibrium with no campaigns ($\gamma_{-1} = \gamma_1 = 0$) exists if and only if $\rho \leq 1/2$ and , $\kappa \geq \delta(1-\Pi)(1-2\rho)$. In this equilibrium, the voter reelects if and only if there is no campaign.*

2. *An equilibrium with campaigns in the less likely state only ($\gamma_{-1} = 1$, $\gamma_1 = 0$) exists if and only if $\rho \leq 1/2$ and $\delta(1-\Pi)(1-2\rho) \leq \kappa \leq \delta(1-\Pi)(1-\rho)$. In this equilibrium, the voter never reelects following the unpopular policy and reelects with the popular policy only if there is no campaign.*

3. *An equilibrium with campaigns in the more likely state only ($\gamma_{-1} = 0$, $\gamma_1 = 1$) exists if and only if $\rho \leq 1/2$ and $\delta(1-\Pi)(1-2\rho) \leq \kappa \leq \delta(1-\Pi)(1-\rho)$. In this equilibrium, the voter never reelects following the popular policy and reelects following the unpopular policy only if there is no campaign.*

4. *An equilibrium with full campaigns exists if and only if $\kappa \leq \delta(1-\Pi)\min\left\{\frac{1}{1+\rho\delta(1-\Pi)}, \frac{1-\rho}{1-\rho\delta(1-\Pi)}\right\}$. In all such equilibria, if the bureaucrat campaigns, then the voter reelects following the popular policy and does not reelect following the unpopular policy. If the bureaucrat does not campaign, then the voter may reelect or not, but all such equilibria yield the same payoffs to all voter types.*

Proof. See Appendix. ■

Figure 2 in the Appendix illustrates the parameter ranges in Proposition 4. As was the case for weak political control, equilibrium campaign intensity is inversely related to the policy costs that campaigns impose. However, when political control is strong, campaigns transmit information about the politician's quality to sophisticated voters only if there is some state in which good politicians fail to request campaigns (cases 1-3 of Proposition 4). Campaigns are completely uninformative in equilibria in which good politicians always request them (case 4). Here, even if sophisticated voters ignore campaigns, good politicians request them because they attract impressionable votes at low policy costs.[27]

Consider an equilibrium in which good politicians never ask bureaucrats to campaign (case 1). Here, sophisticated voters ignore policy outcomes and reelect only in the absence of a campaign. To see the intuition for the conditions for this equilibrium, note that if

[27]Since in this equilibrium campaigns are always observed, sophisticated voters' beliefs following the absence of a campaign are not pinned down by Bayes' rule. This generates payoff-irrelevant equilibrium multiplicity, which is detailed in the proof of Proposition 4. The upper bound on the policy cost κ from part 4 is the weakest such condition among all these equilibria.

a good politician was to deviate and campaign, she would incur a policy cost of κ. Her probability of reelection would increase under an impressionable voter (probability $1-\rho$), but decrease under a sophisticated voter (probability ρ). The second condition in part 1 of the proposition states that the cost of such a deviation is larger than the gain (as before, the value of reelection is $\delta(1-\Pi)$).

For this equilibrium to exist, it must also be the case that the bad politician does not deviate from requesting campaigns.[28] Recall that because a bad politician always ensures that the bad policy is implemented, the only impact of campaigns is on her reelection probability. Deviating to no campaigns in state S raises this probability if the voter is more likely to be sophisticated, and $\rho \leq 1/2$ ensures that this is not the case. Note that this condition is required for any equilibrium in which the good politicians fails to request campaigns in some state S (i.e., cases 1-3 of Proposition 4). Paradoxically, a necessary condition for informative campaigns is that the voter is relatively *unlikely* to be sophisticated.

Under strong political control, equilibria with partial campaigning can exist for intermediate level of campaign costs. The key distinction with corresponding equilibria under weak political control is that partial campaigns can now arise in both states. The reason for this is that with strong political control, restraint in good politicians' demands for campaigns generates negative spillovers: voters attribute all observed campaigns to bad politicians whenever, in equilibrium, they expect good politicians to refrain from campaigns in some state. In that case, a good politician cannot secure reelection from sophisticated voters following any policy by requesting campaigns so that, in particular, good politicians lose their natural advantage when implementing the popular policy. Furthermore, in partial-campaigning equilibria good politicians must be willing to request campaigns in one state and not the other, so that voters must attribute the absence of campaigns following policies for which they expect one to bad politicians.[29] Therefore, with strong political control, partial-campaigning equilibria have incumbents reelected if and only if no campaign is observed when voters expect not to observe a campaign, so that the cases in which campaigns occur either following the popular or the unpopular policy are symmetric.

[28] When political control was weak, the incentives of bad politicians were irrelevant because they never successfully recruited apolitical bureaucrats for political activities.

[29] All such observations are inconsistent with equilibrium strategies, and hence sophisticated voters' beliefs are undetermined (this indeterminacy of voters' beliefs when expected campaigns are not observed also explains the equilibrium multiplicity reflected in Part 4 of Proposition 4 for full-campaigning equilibria). Furthermore, when $\rho \leq 1/2$, beliefs that attribute the absence of campaigns to bad politicians fail the intuitive criterion, pointing to a non-robustness of partial-campaigning equilibria with strong political control (in Section 5, political bureaucrats ensured that campaigns always occurred with positive probability, and bad politicians ensured that there was always a positive probability of not observing campaigns, so that no observed actions were off the equilibrium path).

6.2 Voter welfare

We now turn to the welfare effects of allowing campaigns in this environment with strong political control.

Proposition 5 *Allowing bureaucrats to campaign always hurts an impressionable voter. It may benefit or hurt a sophisticated voter. Overall, banning campaigns is always optimal.*

Proof. See Appendix. ■

With strong political control, the most that good politicians can do is rely on the absence of campaigns to communicate their type to a sophisticated voter. Thus, allowing campaigns here can improve screening by incentivizing the bad politicians to use them. This occurs for example in the no-campaigning equilibrium of Proposition 4. Here, the voter relies exclusively on campaigns to screen politicians, reelecting incumbents whenever there is no campaign. Similarly, in the partial-campaigning equilibrium of Proposition 4 part 2 a good politician uses the absence of campaigns to signal her type when choosing the popular policy. In both of these cases, allowing campaigns improves sophisticated voters' ability to screen.

However, because campaigns distort policy choices, this makes them a very costly channel of communication for a sophisticated voter. Furthermore, because good politicians campaign weakly less than bad politicians, the reelection rule of an impressionable voter is (at least weakly) biased in favor of the latter. The policy costs of good politicians' campaigns then imply that the impressionable voter is strictly worse off when campaigns are allowed. Intuitively, the reason that screening benefits cannot outweigh these costs of campaigns is that here maximizing the amount of communication between bureaucrats and voters requires minimizing campaigns. This happens when policy costs are high enough, so that improving screening *requires* campaigns to be very costly. Ultimately, overall voter welfare is always less than without campaigns.

Unlike in the case of weak political control, it is now also possible for campaigns to be fully used by politicians, but fully ignored by voters, who then only rely on policies for screening (part 4 of Proposition 4). Here, full-campaigning equilibria communicate no information to the voter, who therefore only relies on policies for screening, just as she would do if campaigns were prohibited. However, not only do campaigns have direct policy costs, they also create noise in the implemented policies and make it harder for voters to use policies as a signal. Hence, allowing campaigns is particularly costly in this case.

The following corollary summarizes the impact of the parameters on the welfare effect of allowing campaigns. Most of these effects mirror those in the case of weak political control

from Corollary 1.[30]

Corollary 2 *All else equal, allowing campaigns by bureaucrats hurts voter welfare less when α, p, and κ are lower. Depending on the equilibrium, the impact of ρ can be negative or positive.*

Proof. See Appendix. ■

7 Discussion

A central idea behind several of the policy arguments reviewed in Section 2 is that bureaucrats' political activities would affect public perceptions about the government. Our model offers one possible formalization of this idea, and adds several considerations to the policy discussion.

First, in principle voters need not view political activities by bureaucrats as bad news about the government. Even with their policy costs, we showed that it was possible in equilibrium for good politicians to use campaigns as an informative signal, complementing other sources of information. We did find, however, that it was easy for such an equilibrium to deliver lower social welfare than a regime where campaigns were simply banned. An important source of welfare loss is that campaigns can crowd out more effective sources of information about politicians. Moreover, even if campaigns *can* be beneficial in transmitting useful information to voters, it cannot be guaranteed that they *will* be used effectively. The quality of this communication can depend on coordination between politicians and voters (and bureaucrats), and we saw that it was possible for the regime with campaigns to lead to a coordination failure. In this sense, a precondition for bureaucrats' political activities to be desirable is that voters trust politicians to use this tool effectively.

Second, we described a setup (strong control), where the idea that voters will view campaigning bureaucrats as bad news about the government was consistent with equilibrium behavior. This may correspond most closely to the model that proponents of US regulations implicitly have in mind. Just because campaigns are bad news, however, does not immediately imply that they should be banned. Allowing campaigns gives good politicians the opportunity to signal their type by *refraining* from campaigns, and this possibility is

[30] One difference is that a higher ρ can now make a ban relatively more or less attractive. Since in general an impressionable voter now loses from campaigns, $\partial/\partial\rho \Delta W > 0$. However, in the full campaigning equilibrium $\partial/\partial\rho \Delta W < 0$ because here an impressionable voter's screening benefit is the same with and without campaigns (while a sophisticated voter is worse off with campaigns).

valuable. Nevertheless, because this type of signaling only works when campaigns have large policy costs, we showed that allowing campaigns is never optimal in this case.

These findings under strong control underscore the emphasis in the Hatch Act on the possibility that employees could be "coerced" into campaigns. Our results provide an explanation for why campaigns should always be banned when this is the case. Weak and strong control could also coexist in different parts of the bureaucracy. For example, US political appointees with no civil service protections (like the heads of various departments, bureaus or agencies) might be subject to strong political control, and perhaps surprisingly our results suggest that Hatch Act type restrictions are particularly important in this case. According to our model, campaigns by political appointees who are likely to have partisan ties to the incumbent and who cannot resist political demands cannot be good news to voters about the incumbent's type. Allowing campaigns just to let good politicians distinguish themselves by *not* using their political appointees in this way is too costly socially.

At the same time, it should be noted that politicians having *some* control over bureaucrats is necessary for campaigns to be desirable. If politicians had no influence on whether bureaucrats campaign, only political bureaucrats would do so, and in this model this has no information value to the voter. Thus, banning political activities would always be beneficial in this case. Some politician control (in the sense of our "weak control") is necessary for political activities to be desirable, but under too much control (strong control) banning political activities is again optimal.

Finally, our model also shows how some of the other factors discussed in the policy debates interact with the informational role of campaigns, and hence affect the desirability of regulations. For example, standard freedom of speech considerations would suggest that the more political bureaucrats there are, i.e., the more bureaucrats have an innate desire to engage in political activities, the more this should be allowed. However, more political bureaucrats also make bureaucrats' campaigns a more noisy way to transmit information to voters. All else equal, this makes allowing these campaigns less desirable. Or, consider policy costs. While policy costs directly lower the desirability of campaigns, in our model they can also have an indirect effect. When all types of politicians use campaigns all the time (as can be the case in Section 6) or when politicians never use them (in Section 5), voters necessarily rely on policies for screening politicians. By making observed policies less likely to reflect the politician's choices, policy costs introduce noise in this screening mechanism, and this further lowers the desirability of allowing campaigns.

8 Conclusion

As discussed in Section 2, in the US the Hatch Act was introduced in the first half of the 20th century, an era with extensive political patronage and a highly politicized bureaucracy. More recently, reforms have tended to weaken the Act's provisions and give government employees more freedom to engage in political activities. Our "strong control" environment may be a good characterization of the patronage system, while the "weak control" environment could reflect the present state of a more independent and professional bureaucracy. To the extent that this is true, our model could provide a rationale for the evolution of these regulations, showing that banning political activities is always optimal under strong political control but could be undesirable when political control is weak. Overall, however, our results suggest that the case for allowing bureaucrats to engage in political activities is rather narrow.

To our knowledge, this is the first paper to provide a formal analysis of Hatch Act-type regulations. We address some of the key elements of the policy debates, including voters' perceptions about government, the strength of political control over bureaucrats, and the impact of policy costs and political bureaucrats. Naturally, we do not view this paper as the last word on the subject - rather, we hope that it might stimulate research on this important topic. Apart from the possible extensions mentioned throughout, three classes of further questions seem particularly interesting. The first concerns the long-run impacts of allowing or prohibiting bureaucratic political activities. On the one hand, limiting campaigns by bureaucrats who support current incumbents could ease the frictions between these bureaucrats and future office-holders of different political stripes, improving future government performance. On the other hand, if bureaucrats can campaign against the incumbent, then Hatch Act-type regulations could reduce the incentives of current office holders to staff the bureaucracy with their own partisans in order to hinder future governments. Furthermore, prolonged use of campaigns by bureaucrats could cause lasting changes in voters' preferences or their views about government, and might affect the self-selection of bureaucrats into the public sector. A second class of further questions could treat one of our paper's key observations, that political activities by bureaucrats are a means of communication with voters, from a more abstract perspective by studying how to design Hatch Act-type regulations to ensure the optimal flow of such information. Finally, if following the current trend the Hatch Act's prohibitions are to be relaxed further, our results suggest that more research is needed to establish why the benefits of these reforms would ever outweigh their costs.

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A Appendix

A.1 Proofs of propositions in the text

Proof of Lemma 1. For a bad politician, choosing no effort is the least attractive when a bad policy results in no reelection while a good policy outcome results in reelection for sure. In this case, the payoff from $x = \varnothing$ is 1, while the payoff from $x = e$ is $\Pr(X = S|x = e) \cdot \delta + (1 - \Pr(X = S|x = e))$, which is less.

For a good politician, choosing to exert effort is the least attractive when a good policy outcome results in no reelection while a bad policy outcome results in reelection for sure. In this case, the payoff from $x = e$ is $\Pr(X = S|x = e) \cdot (1 + \delta\Pi) + (1 - \Pr(X = S|x = e))\delta$, while the payoff from $x = \varnothing$ is δ, which is less. ■

The following lemma characterizes the sophisticated voter's reelection strategies and politicians' campaign strategies, and is used extensively in the sequel.

Lemma 4 *Let $\tilde{\gamma}_S = \alpha + (1-\alpha)c_S(G)\gamma_S$ denote the probability that the bureaucrat campaigns in state S when the politician is good and let $\tilde{\beta}_S = \alpha + (1-\alpha)c_S(B)\beta_S$ be the corresponding probability when the politician is bad.*

1. *Given policy outcome X and campaign C, let $\eta(X, C) \in \{0, 1\}$ denote the voter's reelection strategy, with $\eta(X, C) = 1$ denoting reelection. We have that*

$$\begin{aligned}
\eta(1,1) &= \begin{cases} 1 \text{ if } p(1-\kappa)\tilde{\gamma}_1 + (1-p)\kappa\tilde{\gamma}_{-1} > (1-p)\tilde{\beta}_{-1}, \\ 0 \text{ if } p(1-\kappa)\tilde{\gamma}_1 + (1-p)\kappa\tilde{\gamma}_{-1} < (1-p)\tilde{\beta}_{-1}. \end{cases} \\
\eta(1,0) &= \begin{cases} 1 \text{ if } p(1-\gamma_1) > (1-p)(1-\beta_{-1}), \\ 0 \text{ if } p(1-\gamma_1) < (1-p)(1-\beta_{-1}). \end{cases} \\
\eta(-1,1) &= \begin{cases} 1 \text{ if } p\kappa\tilde{\gamma}_1 + (1-p)(1-\kappa)\tilde{\gamma}_{-1} > p\tilde{\beta}_1, \\ 0 \text{ if } p\kappa\tilde{\gamma}_1 + (1-p)(1-\kappa)\tilde{\gamma}_{-1} < p\tilde{\beta}_1. \end{cases} \\
\eta(-1,0) &= \begin{cases} 1 \text{ if } (1-p)(1-\gamma_{-1}) > p(1-\beta_1), \\ 0 \text{ if } (1-p)(1-\gamma_{-1}) < p(1-\beta_1). \end{cases}
\end{aligned}$$

2. *Given a state S and $c_S(G) = 1$, the good politician's choices are such that*

$$\gamma_S = \begin{cases} 1 \text{ if } \delta(1-\Pi)\Big[\rho\big[\kappa\eta(-S,1) + (1-\kappa)\eta(S,1) - \eta(S,0)\big] + (1-\rho)\Big] > \kappa, \\ 0 \text{ if } \delta(1-\Pi)\Big[\rho\big[\kappa\eta(-S,1) + (1-\kappa)\eta(S,1) - \eta(S,0)\big] + (1-\rho)\Big] < \kappa. \end{cases} \tag{5}$$

3. Given a state S and $c_S(B) = 1$, the bad politician's choices are such that

$$\beta_S = \begin{cases} 1 \text{ if } \rho[\eta(-S,1) - \eta(-S,0)] + 1 - \rho > 0, \\ 0 \text{ if } \rho[\eta(-S,1) - \eta(-S,0)] + 1 - \rho < 0. \end{cases} \tag{6}$$

Proof of Lemma 4. Let $\Pr(X, C|G)$ denote the probability of a pair (X, C) under a good politician and $\Pr(X, C|B)$ the same probability under a bad politician. After observing (X, C), the voter reelects only if $\frac{\Pr(X,C|G)\Pi}{\Pr(X,C|G)\Pi+\Pr(X,C|B)(1-\Pi)} \geq \Pi$, which simplifies to $\Pr(X, C|G) \geq \Pr(X, C|B)$. The expressions for the voter's strategy then follow from computation, invoking Lemma 1.

To establish (5), fix state S. The payoff to a good politician from asking the bureaucrat to campaign is

$$C^G \equiv 1-\kappa+\delta\Big[\rho\Big[(1-\kappa)\big[\eta(S,1)+(1-\eta(S,1))\Pi\big]+\kappa\big[\eta(-S,1)+(1-\eta(-S,1))\Pi\big]\Big]+(1-\rho)\Big], \tag{7}$$

whereas her payoff from not asking the bureaucrat to campaign is

$$\alpha C^G + (1-\alpha)\Big[1+\delta\Big[\rho\big[\eta(S,0)+(1-\eta(S,0))\Pi\big]+(1-\rho)\Pi\Big]\Big].$$

Comparing the two expressions yields (5).

To establish (6), fix state S. The payoff to a bad politician from asking the bureaucrat to campaign is $C^B \equiv 1 + \delta[\rho\eta(-S, 1) + 1 - \rho]$. Her payoff from not asking for a campaign is $\alpha C^B + (1 - \alpha)[1 + \delta\rho\eta(-S, 0)]$. Comparing the two expressions yields (6). ■

Proof of Proposition 2. From Lemma 2, apolitical bureaucrats never campaign for bad politicians in any equilibrium with weak political control, so that $\tilde{\beta}_S = \alpha$ in Part 1 of Lemma 4, and we can neglect the bad politicians' incentive constraint (6).

Consider an equilibrium in which good politicians never ask bureaucrats to campaign, i.e., such that $\gamma_{-1} = \gamma_1 = 0$. It follows from Lemma 4 that $\eta(1, 1) = \eta(1, 0) = 1$ and $\eta(-1, 1) = \eta(-1, 0) = 0$. If $S = 1$, (5) reduces to $\kappa \geq \delta(1 - \Pi)\big[-\rho\kappa + (1 - \rho)\big]$, whereas for $S = -1$, (5) reduces to

$$\kappa \geq \delta(1 - \Pi)\big[\rho\kappa + (1 - \rho)\big]. \tag{8}$$

Therefore, such an equilibrium exists if and only if (8) is satisfied.

Consider an equilibrium in which good politicians always ask bureaucrats to campaign, i.e., such that $\gamma_{-1} = \gamma_1 = 1$. It follows that $\eta(1, 1) = 1$, $\eta(1, 0) = \eta(-1, 0) = 0$ and

$\eta(-1,1)=1$ if and only if

$$\alpha \leq \kappa + {}^{1-p}\!/_{p}(1-\kappa). \tag{9}$$

If (9) holds, then (5) is independent of S and reduces to $\kappa \leq \delta(1-\Pi)$. If (9) fails, then if $S=1$, (5) reduces to $\kappa \leq \delta(1-\Pi)\big[\rho(1-\kappa)+(1-\rho)\big]$, while if $S=-1$, (5) reduces to $\kappa \leq \delta(1-\Pi)\big[\rho\kappa+(1-\rho)\big]$. It follows that such an equilibrium exists if and only if

$$\kappa \leq \delta(1-\Pi)\big[\rho\min\{\kappa,1-\kappa\}+(1-\rho)\big],$$

Consider an equilibrium in which good politicians only ask bureaucrats to campaign if $S=1$, i.e., such that $\gamma_1=1$ and $\gamma_{-1}=0$. It follows that $\eta(1,1)=1$, $\eta(1,0)=\eta(-1,0)=0$ and that $\eta(-1,1)=1$ if and only if

$$\alpha \leq \frac{\kappa}{1-{}^{1-p}\!/_{p}(1-\kappa)} \tag{10}$$

If (10) holds, then if $S=1$, (5) reduces to $\kappa \leq \delta(1-\Pi)$, whereas if $S=-1$, (5) reduces to $\kappa \geq \delta(1-\Pi)$. Clearly, in this case this type of equilibrium does not typically exist, so that we ignore it from now on. If (10) fails, then if $S=1$, (5) reduces to $\kappa \leq \delta(1-\Pi)\big[\rho(1-\kappa)+(1-\rho)\big]$, whereas if $S=-1$, (5) reduces to $\kappa \geq \delta(1-\Pi)\big[\rho\kappa+(1-\rho)\big]$.

Finally, consider an equilibrium in which good politicians only ask bureaucrats to campaign if $S=-1$, i.e., such that $\gamma_1=0$ and $\gamma_{-1}=1$. It follows that $\eta(1,1)=\eta(1,0)=1$, $\eta(-1,0)=0$ and that $\eta(-1,1)=1$ if and only if

$$\alpha \leq \frac{1-p}{p}. \tag{11}$$

If (11) holds, then if $S=1$, (5) reduces to $\kappa \geq \delta(1-\Pi)(1-\rho)$, whereas if $S=-1$, (5) reduces to $\kappa \leq \delta(1-\Pi)$. If (11) fails, then if $S=1$, (5) reduces to $\kappa \geq \delta(1-\Pi)\big[-\rho\kappa+1-\rho\big]$, whereas if $S=-1$, (5) reduces to $\kappa \leq \delta(1-\Pi)\big[\rho\kappa+1-\rho\big]$.

If α is sufficiently small, then it follows that (9), (10) and (11) are all satisfied. ■

Proof of Proposition 3. Recall, from Proposition 1, that if campaigns are prohibited, we have that $Q^G_\emptyset=1$, $\sigma^G_\emptyset=\rho p$ and $\sigma^B_\emptyset=\rho p+1-\rho$, so that

$$\sigma_\emptyset = 2\rho p+1-\rho. \tag{12}$$

When campaigns are allowed, the no-campaigning equilibrium ($\gamma_1=\gamma_{-1}=0$) is such that $\sigma^G_N=\rho[p(1-\alpha\kappa)+(1-p)\alpha\kappa]+(1-\rho)\alpha$, $\sigma^B_N=\rho p+(1-\rho)(1-\alpha)$ and $Q^G_N=1-\alpha\kappa$.

It follows from (4) that in this case

$$\Delta W = \delta(1-\Pi)\rho\alpha\kappa(1-2p) - \alpha\kappa < 0.$$

Therefore, the voter strictly prefers to ban campaigns whenever she expects the no-campaigning equilibrium if campaigns were allowed.

The full-campaigning equilibrium ($\gamma_1 = \gamma_{-1} = 1$) is such that $\sigma_F^G = 1$, $\sigma_F^B = (1-\alpha)$ and $Q_F^G = 1-\kappa$. It follows that in this case

$$\Delta W = \delta(1-\Pi)\left[1-\alpha-\rho[2p-1]\right] - \kappa. \tag{13}$$

Therefore, if she expects the full-campaigning equilibrium, the voter prefers to allow campaigns if and only if

$$\kappa \leq \kappa_F \equiv \delta(1-\Pi)\left[1-\alpha-\rho[2p-1]\right].$$

The partial-campaigning equilibrium ($\gamma_1 = 0$, $\gamma_{-1} = 1$) is such that $\sigma_P^G = \rho + (1-\rho)[p\alpha + (1-p)]$, $\sigma_P^B = \rho p(1-\alpha) + (1-\rho)(1-\alpha)$ and $Q_P^G = 1-\kappa[1-p(1-\alpha)]$. It follows that

$$\Delta W = \delta(1-\Pi)\left[(1-p)(1-\alpha) - \alpha\rho[2p-1]\right] - \kappa[1-p(1-\alpha)]. \tag{14}$$

Therefore, if she expects the partial-campaigning equilibrium, the voter prefers to allow campaigns if and only if

$$\kappa \leq \kappa_P \equiv \frac{\delta(1-\Pi)}{1-p(1-\alpha)}\left[(1-p)(1-\alpha) - \alpha\rho[2p-1]\right].$$

It can be computed that

$$[1-p(1-\alpha)](\kappa_P - \kappa_F) = \delta(1-\Pi)(1-\alpha)\left[\rho[2p-1](1-p) - \alpha p\right],$$

so that $\kappa_P > \kappa_F$ if α is sufficiently small.

Finally, we take the difference between (14) and (13) to obtain

$$(1-\alpha)\left[\delta(1-\Pi)\left[\rho[2p-1]-p\right] + p\kappa\right],$$

so that the voter prefers partial to full campaigns if and only if

$$\kappa \geq \kappa^{PF} \equiv \delta(1-\Pi)\left[1-{}^{\rho}/_{p}(2p-1)\right].$$

Note that $1/2 < p < 1$ implies that $\kappa^{PF} > 0$. We have that

$$\kappa^F - \kappa^{PF} = \delta(1-\Pi)\left[\rho(2p-1)^{1-p}/p - \alpha\right],$$

so that $\kappa^F > \kappa^{PF}$ if α is sufficiently small.

Finally, note that $\kappa^P < \delta(1-\Pi)$ and that

$$\kappa^F - \delta(1-\Pi)(1-\rho) = \delta(1-\Pi)\left[2\rho(1-p) - \alpha\right],$$

so that $\kappa^F > \delta(1-\Pi)(1-\rho)$ if α is sufficiently small. Therefore, by Proposition 2, the full campaigning equilibrium exists for all $\kappa \leq \kappa^P$ and the partial campaigning equilibrium exists for all $\kappa^F \leq \kappa \leq \kappa^P$. ■

Proof of Corollary 1. For the full-campaigning equilibrium, the welfare impact of allowing campaigns is given by (13). This expression is decreasing in α, p, κ and ρ.

For the partial-campaigning equilibrium, the welfare impact of allowing campaigns is given by (14). This expression is decreasing in α, κ and ρ. For p, note that the derivative can be written as $[\kappa-\delta(1-\Pi)](1-\alpha)-\delta(1-\Pi)2\alpha\rho$. From Part 3 of Proposition 2, the partial campaigning equilibrium only exists if $\delta(1-\Pi) > \kappa$, therefore this derivative is negative. ■

Proof of Lemma 3. Suppose that $\beta_{-1} = 0$. Then from Lemma 4 we have $\eta(1,1) = 1$, because $p > 1/2$ and $\tilde{\gamma}_S \geq \alpha$. But then in (6) the term $[\eta(1,1) - \eta(1,0)]$ is non-negative, and therefore $\rho[\eta(1,1) - \eta(1,0)] + 1 - \rho > 0$. This contradicts $\beta_{-1} = 0$.

Similarly, suppose that $\beta_1 = 0$. Then from Lemma 4 we have $\eta(-1,0) = 0$ because $p > 1/2$. But then in (6) the term $[\eta(-1,1) - \eta(-1,0)]$ is non-negative, and therefore $\rho[\eta(-1,1) - \eta(-1,0)] + 1 - \rho > 0$. This contradicts $\beta_1 = 0$. ■

Proof of Proposition 4. From Lemma 3, apolitical bureaucrats always campaign for bad politicians in any equilibrium with strong political control, so that $\tilde{\beta}_S = 1$ in Part 1 of Lemma 4. Let $\tilde{p} \equiv p(1-\kappa) + (1-p)\kappa$. Although the statement of Proposition 2 assumes that α is small, we included the equilibrium results for all values of α in our proof. In the case of strong political control, there are many cases to consider for arbitrary α, so that we prove our results for α small here, and describe equilibria for α high in Appendix A.3. To this end, assume that $\alpha < \min(\frac{1-p-p(1-\kappa)}{\kappa(1-p)}, \frac{1-p}{p})$.

Consider an equilibrium in which good politicians never ask bureaucrats to campaign, i.e., such that $\gamma_{-1} = \gamma_1 = 0$. It follows from Lemma 4 and $\alpha < \frac{1-p}{\tilde{p}}$ that $\eta(1,0) = \eta(-1,0) = 1$ and $\eta(1,1) = \eta(-1,1) = 0$. Therefore, both (5) and (6) are independent of S, and the former reduces to $\kappa \geq \delta(1-\Pi)[1-2\rho]$ while the latter reduces to $\rho \leq 1/2$.

Consider an equilibrium in which good politicians only ask bureaucrats to campaign in the less likely state, i.e., such that $\gamma_1 = 0$ and $\gamma_{-1} = 1$. It follows from Lemma 4 and $\alpha < \frac{1-p}{p} < \frac{1-p}{\tilde{p}}$ that $\eta(1,0) = 1$ and $\eta(1,1) = \eta(-1,1) = 0$, while $\eta(-1,0)$ is undetermined because the voter is indifferent. Suppose that $\eta(-1,0) = 1$. If $S = 1$, then (5) reduces to $\kappa \geq \delta(1-\Pi)[1-2\rho]$, while if $S = -1$, (5) reduces to $\kappa \leq \delta(1-\Pi)[1-2\rho]$. Clearly, this type of equilibrium does not typically exist, so that we ignore it from now on. Now suppose that $\eta(-1,0) = 0$. If $S = 1$, then (5) reduces to $\kappa \geq \delta(1-\Pi)[1-2\rho]$, while if $S = -1$, then (5) reduces to $\kappa \leq \delta(1-\Pi)[1-\rho]$. Furthermore, if $S = 1$ then (6) is always satisfied, while if $S = -1$, (6) reduces to $\rho \leq 1/2$.

Consider an equilibrium in which good politicians only ask bureaucrats to campaign in the more likely state, i.e., such that $\gamma_1 = 1$ and $\gamma_{-1} = 0$. It follows from Lemma 4 and $\alpha < \frac{1-p-p(1-\kappa)}{\kappa(1-p)}$ that $\eta(-1,0) = 1$ and $\eta(1,1) = \eta(-1,1) = 0$, while $\eta(1,0)$ is undetermined because the voter is indifferent. As above, an equilibrium typically does not exist if $\eta(1,0) = 1$, so suppose that $\eta(1,0) = 0$. If $S = 1$, then (5) reduces to $\kappa \leq \delta(1-\Pi)[1-\rho]$, while if $S = -1$, then (5) reduces to $\kappa \geq \delta(1-\Pi)[1-2\rho]$. Furthermore, if $S = -1$ then (6) is always satisfied, while if $S = 1$, (6) reduces to $\rho \leq 1/2$.

Consider an equilibrium in which good politicians always ask bureaucrats to campaign, i.e., such that $\gamma_1 = \gamma_{-1} = 1$. It follows from Lemma 4 that $\eta(1,1) = 1$ and $\eta(-1,1) = 0$, while $\eta(1,0)$ and $\eta(-1,0)$ are undetermined because the voter's beliefs cannot be obtained via Bayes' rule from equilibrium strategies. First, suppose that $\eta(1,0) = \eta(-1,0) = 1$. If $S = -1$, then (5) reduces to $\rho \leq \frac{\delta(1-\Pi)-\kappa}{\delta(1-\Pi)}\frac{1}{2-\kappa}$ and if $S = 1$ then (5) reduces to $\rho \leq \frac{\delta(1-\Pi)-\kappa}{\delta(1-\Pi)}\frac{1}{1+\kappa}$. Note that the first condition guarantees $\rho < \frac{1}{2}$, so that (6) is satisfied for all S. Second, suppose that $\eta(1,0) = 1$ and $\eta(-1,0) = 0$. If $S = 1$, then (5) reduces to $\rho \leq \frac{\delta(1-\Pi)-\kappa}{\delta(1-\Pi)}\frac{1}{1+\kappa}$, which implies that if $S = -1$ then (5), which reduces to $\rho \leq \frac{\delta(1-\Pi)-\kappa}{\delta(1-\Pi)}\frac{1}{1-\kappa}$, is also satisfied. Also, (6) is satisfied for all S. Third, suppose that $\eta(-1,0) = 1$ and $\eta(1,0) = 0$. If $S = -1$, then (5) reduces to $\rho \leq \frac{\delta(1-\Pi)-\kappa}{\delta(1-\Pi)}\frac{1}{2-\kappa}$, which implies that if $S = 1$ then (5), which reduces to $\rho \leq \frac{\delta(1-\Pi)-\kappa}{\delta(1-\Pi)}\frac{1}{\kappa}$, is satisfied, and that further (6) is satisfied for all S because $\rho < \frac{1}{2}$. Finally, suppose that $\eta(-1,0) = \eta(1,0) = 0$. If $S = -1$, then (5) reduces to $\rho \leq \frac{\delta(1-\Pi)-\kappa}{\delta(1-\Pi)}\frac{1}{1-\kappa}$ and if $S = 1$, then (5) reduces to $\rho \leq \frac{\delta(1-\Pi)-\kappa}{\delta(1-\Pi)}\frac{1}{\kappa}$, and furthermore (6) is satisfied for all S. Because $\min\{\frac{1}{1-\kappa}, \frac{1}{\kappa}\} > \max\{\frac{1}{2-\kappa}, \frac{1}{1+\kappa}\}$, these final conditions are the weakest among all four cases, which explains the condition in Part 4 of Proposition 4. ■

Proof of Proposition 5. When campaigns are allowed, $Q_A^G = 1 - \kappa[\alpha + (1-\alpha)(p\gamma_1 + (1-p)\gamma_{-1})]$. When they are prohibited, $Q_\emptyset^G = 1$, so that

$$Q_A^G - Q_\emptyset^G = -\kappa[\alpha + (1-\alpha)(p\gamma_1 + (1-p)\gamma_{-1})] < 0. \tag{15}$$

The policy impact of campaigns is always negative. For the impact of selection, start by observing that, when political activities are allowed, bad politicians always campaign (Lemma 3) and are therefore always reelected by an impressionable voter. Thus, the likelihood of successful electoral screening under a bad politician is given by

$$\sigma_A^B = \rho[p(1-\eta(-1,1)) + (1-p)(1-\eta(1,1))] \tag{16}$$

Good politicians are reelected by an impressionable voter when there is a campaign, which has probability $\Gamma \equiv p\tilde{\gamma}_1 + (1-p)\tilde{\gamma}_{-1}$. Using this observation, the likelihood of successful electoral screening under a good politician is as follows.

For $\eta(1,0) = \eta(-1,0) = \eta(1,1) = 1$ and $\eta(-1,1) = 0$,

$$\sigma_A^G = \rho[p(1-\tilde{\gamma}_1\kappa) + (1-p)(1-\tilde{\gamma}_{-1}(1-\kappa))] + (1-\rho)\Gamma \tag{17}$$

For $\eta(1,0) = \eta(-1,0) = 1$ and $\eta(1,1) = \eta(-1,1) = 0$,

$$\sigma_A^G = \rho(1-\alpha)[p(1-\gamma_1) + (1-p)(1-\gamma_{-1})] + (1-\rho)\Gamma \tag{18}$$

For $\eta(1,0) = 1$ and $\eta(1,1) = \eta(-1,0) = \eta(-1,1) = 0$,

$$\sigma_A^G = \rho p(1-\alpha)(1-\gamma_1) + (1-\rho)\Gamma \tag{19}$$

For $\eta(1,1) = \eta(1,0) = 1$ and $\eta(-1,0) = \eta(-1,1) = 0$,

$$\sigma_A^G = \rho[p(1-\tilde{\gamma}_1\kappa) + (1-p)\tilde{\gamma}_{-1}\kappa)] + (1-\rho)\Gamma \tag{20}$$

For $\eta(1,1) = \eta(-1,0) = 1$ and $\eta(1,0) = \eta(-1,1) = 0$,

$$\sigma_A^G = \rho[p\tilde{\gamma}_1(1-\kappa) + (1-p)(\tilde{\gamma}_{-1}\kappa + (1-\alpha)(1-\gamma_{-1}))] + (1-\rho)\Gamma \tag{21}$$

For $\eta(-1,0) = 1$ and $\eta(1,1) = \eta(1,0) = \eta(-1,1) = 0$,

$$\sigma_A^G = \rho(1-\alpha)(1-p)(1-\gamma_{-1}) + (1-\rho)\Gamma \tag{22}$$

For $\eta(1,1) = 1$ and $\eta(-1,0) = \eta(1,0) = \eta(-1,1) = 0$,

$$\sigma_A^G = \rho[p\tilde{\gamma}_1(1-\kappa) + (1-p)\tilde{\gamma}_{-1}\kappa] + (1-\rho)\Gamma \tag{23}$$

We now consider each of the equilibria in Proposition 4 in turn.

1. Consider $\gamma_{-1} = \gamma_1 = 0$. For, $\eta(1,0) = \eta(-1,0) = 1$ and $\eta(1,1) = \eta(-1,1) = 0$, the likelihood of successful screening under a good politician is given by (18). This becomes

$$\sigma_A^G = \rho(1-\alpha) + (1-\rho)\alpha,$$

while $\sigma_A^B = \rho$ from (16). From (4), (15), and (12), we find

$$\Delta W = (1-\Pi)\delta\left[\rho(2(1-p)-\alpha) + (1-\rho)(\alpha-1)\right] - \alpha\kappa. \tag{24}$$

The first term inside the brackets is positive because $2(1-p) > \frac{1-p}{\tilde{p}} \geq \alpha$, where the last inequality is necessary for this equilibrium to exist (Proposition 4). Thus, a sophisticated voter's ability to screen always improves in this case. Clearly, the second term in the brackets is negative: an impressionable voter always loses from campaigns. Since $\rho 2(1-p) < \rho$, the term in brackets is less than $(1-\alpha)(2\rho-1)$, which is negative as $\rho < 1/2$ in this equilibrium. The overall welfare effect of campaigns is negative.

2. Consider $\gamma_{-1} = 1$, $\gamma_1 = 0$. When $\eta(1,0) = 1$ and $\eta(-1,0) = \eta(1,1) = \eta(-1,1) = 0$, (19) yields

$$\sigma_A^G = \rho p(1-\alpha) + (1-\rho)(1-p+\alpha p)$$

and (16) yields $\sigma_A^B = \rho$. Using (4), (15), and (12), we get

$$\Delta W = (1-\Pi)\delta[\rho(1-p-\alpha p) + (1-\rho)p(\alpha-1)] - \kappa(1-p(1-\alpha)). \tag{25}$$

Because $1-p > \alpha p$ (Proposition 4), the first term in brackets is positive: a sophisticated voter's ability to screen always improves. The second term is negative: campaigns hurt an impressionable voter. Since $\rho < 1/2$, the term in brackets is less than $\frac{1}{2}(1-p-\alpha p-p(1-\alpha)) = \frac{1}{2}(1-2p) < 0$. Thus, $\Delta W < 0$.

3. Consider $\gamma_{-1} = 0$ and $\gamma_1 = 1$. For $\eta(-1,0) = 1$ and $\eta(1,0) = \eta(1,1) = \eta(-1,1) = 0$, (22) gives

$$\sigma_A^G = \rho(1-\alpha)(1-p) + (1-\rho)(\alpha + (1-\alpha)p)$$

and (16) gives $\sigma_A^B = \rho$. Using (4), (15), and (12), we get

$$\Delta W = (1-\Pi)\delta[\rho(1+(1-p)(1-\alpha)-2p) + (1-\rho)(\alpha-1)(1-p)] - \kappa(\alpha+(1-\alpha)p) \tag{26}$$

The first term in brackets may be positive or negative. The second term in brackets is negative: campaigns hurt the impressionable voter. Collecting terms, the expression in brackets is $[\rho(1-2p) + (2\rho-1)(1-\alpha)(1-p)] < 0$, the overall welfare effect of campaigns

is therefore negative.

4. Finally, consider $\gamma_{-1} = \gamma_1 = 1$.(i) If the voter sets $\eta(1,1) = \eta(1,0) = \eta(-1,0) = 1$ and $\eta(-1,1) = 0$, (17) gives

$$\sigma_A^G = \rho\tilde{p} + 1 - \rho$$

and (16) gives $\sigma_A^B = \rho p$. Using (4), (15), and (12), we get

$$\Delta W = (1 - \Pi)\delta\rho(\tilde{p} - p) - \kappa < 0. \tag{27}$$

Here a sophisticated voter loses from the possibility of campaigns, while an impressionable voter's welfare is unchanged.

(ii) Suppose the voter sets $\eta(1,1) = \eta(1,0) = 1$ and $\eta(-1,1) = \eta(-1,0) = 0$. Then because (20) is the same as (17), the same argument yields $\Delta W < 0$.

(iii) Suppose the voter sets $\eta(1,1) = \eta(-1,0) = 1$ and $\eta(-1,1) = \eta(1,0) = 0$. Then because (21) is the same as (17), the same argument yields $\Delta W < 0$.

(iv) Suppose the voter sets and $\eta(1,1) = 1$ and $\eta(-1,1) = \eta(-1,0) = \eta(1,0) = 0$. Then because (23) is the same as (17), the same argument yields $\Delta W < 0$. ■

Proof of Corollary 2. For the no-campaigning equilibrium, (24) is increasing in ρ and decreasing in κ and p. For α, note that the derivative is $(1-\Pi)\delta(1-2\rho)-\kappa$ which is negative in this equilibrium (Proposition 4 part 1).

For the equilibrium with $\gamma_{-1} = 1$ and $\gamma_1 = 0$, (25) is increasing in ρ and decreasing in κ. For p, the derivative is $(1-\Pi)\delta(\alpha-1-2\rho\alpha)+\kappa(1-\alpha)$, which is negative in this equilibrium (Proposition 4 part 2). For α, the derivative is $(1 - \Pi)\delta p(1 - 2\rho) - \kappa p$ which is negative in this equilibrium.

For the equilibrium with $\gamma_{-1} = 0$ and $\gamma_1 = 1$, (26) is increasing in ρ and decreasing in κ and p. For α, the derivative is $(1 - \Pi)\delta(1 - p)(1 - 2\rho) - \kappa(1 - p)$, which is negative in this equilibrium (Proposition 4 part 3).

For the full-campaigning equilibrium, (27) is unaffected by α, and decreasing in κ, p, and ρ. ■

A.2 Figures

Figure 1 graphs the parameter ranges in Propositions 2 and 3 (weak control). N, P, and F indicate areas in the parameter space (with solid boundaries) for which a no-campaigns, partial-campaigns, and full-campaigns equilibrium exists, respectively. Areas in white are ranges where allowing campaigns is never optimal. In the dark grey area, allowing campaigns

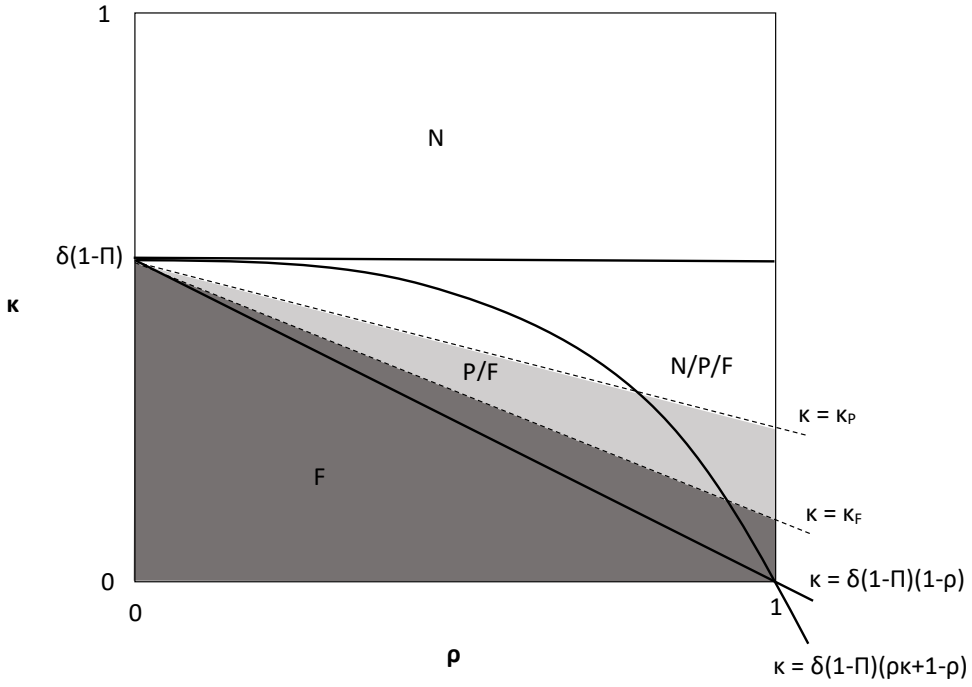

Figure 1: Parameter ranges for weak control.

is optimal in any equilibrium with campaigns. In the light grey area, allowing campaigns is optimal only in the partial campaigning equilibrium.

Figure 2 shows the parameter ranges for strong control. N, P, and F denote areas in the parameter space (with solid boundaries) for which a no-campaigns, partial-campaigns, and full-campaigns equilibrium exists, respectively (Proposition 4). Based on Proposition 5, allowing campaigns is never optimal.

A.3 Equilibria with strong political control when α is not small

We show that the result from Proposition 5 that banning campaigns is optimal under strong political control holds even if we relax the restriction that α is small. We begin by describing the new equilibria that arise in this case.

Proposition 6 *Consider the model with strong political control. In addition to the equilibria from Proposition 4, the following equilibria can exist.*

1. *If $\alpha \geq \frac{1-p}{\tilde{p}}$, then an equilibrium with no campaigns ($\gamma_{-1} = \gamma_1 = 0$) exists if and only if $\rho \leq 1/2$ and $\kappa \geq \delta(1-\Pi)\max\left\{\frac{1-2\rho}{1-\rho\delta(1-\Pi)}, \frac{1-\rho}{1+\rho\delta(1-\Pi)}\right\}$. In this equilibrium, the voter*

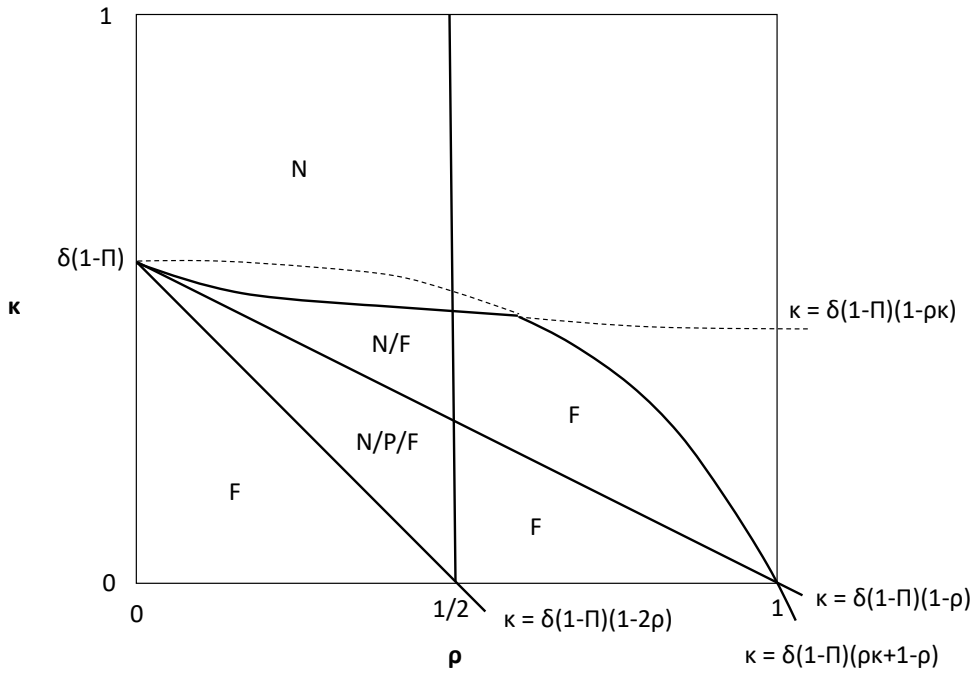

Figure 2: Parameter ranges for strong control.

sets $\eta(1,1) = \eta(1,0) = \eta(-1,0) = 1$ *and* $\eta(-1,1) = 0$.

2. *If* $\alpha \geq \frac{1-p}{\tilde{p}}$, *then an equilibrium with campaigns in the less likely state only* ($\gamma_{-1} = 1$, $\gamma_1 = 0$) *exists if and only if* $\rho \leq 1/2$ *and either*

   (a) $\frac{\delta(1-\Pi)(1-\rho)}{1+\rho\delta(1-\Pi)} \leq \kappa \leq \frac{\delta(1-\Pi)(1-2\rho)}{1-\rho\delta(1-\Pi)}$. *In this case the voter sets* $\eta(1,0) = \eta(1,1) = \eta(-1,0) = 1$ *and* $\eta(-1,1) = 0$.

   (b) $\frac{\delta(1-\Pi)(1-\rho)}{1+\rho\delta(1-\Pi)} \leq \kappa \leq \frac{\delta(1-\Pi)(1-\rho)}{1-\rho\delta(1-\Pi)}$. *In this case the voter sets* $\eta(1,0) = \eta(1,1) = 1$ *and* $\eta(-1,0) = \eta(-1,1) = 0$.

3. *If* $\alpha \geq \frac{1-p-p(1-\kappa)}{\kappa(1-p)}$, *then an equilibrium with campaigns in the more likely state only* ($\gamma_{-1} = 0$, $\gamma_1 = 1$) *exists if and only if* $\rho \leq 1/2$ *and either*

   (a) $\frac{\delta(1-\Pi)(1-2\rho)}{1-\rho\delta(1-\Pi)} \leq \kappa \leq \frac{\delta(1-\Pi)}{1+\rho\delta(1-\Pi)}$. *In this case the voter sets* $\eta(-1,0) = \eta(1,1) = 1$ *and* $\eta(-1,1) = \eta(1,0) = 0$.

   (b) $\frac{\delta(1-\Pi)(1-2\rho)}{1-\rho\delta(1-\Pi)} \leq \kappa \leq \frac{\delta(1-\Pi)(1-\rho)}{1+\rho\delta(1-\Pi)}$. *In this case the voter sets* $\eta(-1,0) = \eta(1,1) = \eta(1,0) = 1$ *and* $\eta(-1,1) = 0$.

Proof. Suppose that $\gamma_{-1} = \gamma_1 = 0$. It follows from Lemma 4 and $\alpha \geq \frac{1-p}{\tilde{p}}$ that $\eta(1,0) = \eta(-1,0) = \eta(1,1) = 1$ and $\eta(-1,1) = 0$. If $S = 1$, (5) reduces to $\kappa \geq \frac{\delta(1-\Pi)(1-\rho)}{1+\rho\delta(1-\Pi)}$, while if $S = -1$, (5) reduces to $\kappa \geq \frac{\delta(1-\Pi)(1-2\rho)}{1-\rho\delta(1-\Pi)}$. Finally, if $S = 1$, (6) reduces to $\rho \leq 1/2$, while if $S = -1$, (6) is always satisfied.

Suppose that $\gamma_{-1} = 1$ and $\gamma_1 = 0$. It follows from Lemma 4 and $\alpha \geq \frac{1-p}{\tilde{p}}$ that $\eta(1,0) = \eta(1,1) = 1$ and $\eta(-1,1) = 0$, while $\eta(-1,0)$ is undetermined. First, suppose further that $\eta(-1,0) = 1$. If $S = 1$, (5) reduces to $\kappa \geq \frac{\delta(1-\Pi)(1-\rho)}{1+\rho\delta(1-\Pi)}$, while if $S = -1$, (5) reduces to $\kappa \leq \frac{\delta(1-\Pi)(1-2\rho)}{1-\rho\delta(1-\Pi)}$. Finally, if $S = 1$, (6) reduces to $\rho \leq 1/2$, while if $S = -1$, (6) is always satisfied. Second, suppose further that $\eta(-1,0) = 0$. If $S = 1$, (5) reduces to $\kappa \geq \frac{\delta(1-\Pi)(1-\rho)}{1+\rho\delta(1-\Pi)}$, while if $S = -1$, (5) reduces to $\kappa \leq \frac{\delta(1-\Pi)(1-\rho)}{1-\rho\delta(1-\Pi)}$. Finally, (6) is independent of the state and is always satisfied.

Suppose that $\gamma_{-1} = 0$ and $\gamma_1 = 1$. It follows from Lemma 4 and $\alpha \geq \frac{1-p-p(1-\kappa)}{\kappa(1-p)}$ that $\eta(-1,0) = \eta(1,1) = 1$ and $\eta(-1,1) = 0$, while $\eta(1,0)$ is undetermined. First, suppose further that $\eta(1,0) = 0$. If $S = 1$, (5) reduces to $\kappa \leq \frac{\delta(1-\Pi)}{1+\rho\delta(1-\Pi)}$, while if $S = -1$, (5) reduces to $\kappa \geq \frac{\delta(1-\Pi)(1-2\rho)}{1-\rho\delta(1-\Pi)}$. Finally, if $S = 1$, (6) reduces to $\rho \leq 1/2$, while if $S = -1$, (6) is always satisfied. Second, suppose further that $\eta(1,0) = 1$. If $S = 1$, (5) reduces to $\kappa \leq \frac{\delta(1-\Pi)(1-\rho)}{1+\rho\delta(1-\Pi)}$, while if $S = -1$, (5) reduces to $\kappa \geq \frac{\delta(1-\Pi)(1-2\rho)}{1-\rho\delta(1-\Pi)}$. Finally, if $S = 1$, (6) reduces to $\rho \leq 1/2$, while if $S = -1$, (6) is always satisfied. ■

We now show that for those new equilibria uncovered by Proposition 6, the welfare effects of allowing bureaucratic campaigns are identical to those of Proposition 5.

Proposition 7 *Allowing bureaucrats to campaign always hurts an impressionable voter. It may benefit or hurt a sophisticated voter. Overall, banning campaigns is always optimal.*

Proof. The policy impact of campaigns is given by (15), and it is still negative. For the impact of selection, we consider each of the equilibria in Proposition 6 in turn.

1. Consider $\gamma_{-1} = \gamma_1 = 0$. When $\eta(1,0) = \eta(-1,0) = \eta(1,1) = 1$ and $\eta(-1,1) = 0$, the likelihood of successful screening under a good politician is given by (17). We get

$$\sigma_A^G = \rho[p(1-\alpha\kappa) + (1-p)(1-\alpha(1-\kappa))] + (1-\rho)\alpha,$$

while (16) reduces to $\sigma_A^B = \rho p$. From (4), (15), and (12), we find

$$\Delta W = (1-\Pi)\delta[\rho((1-p)(1-\alpha) - \alpha\kappa(2p-1)) + (1-\rho)(\alpha-1)] - \alpha\kappa.$$

The first term inside the brackets may be positive or negative. The second term is negative: allowing campaigns hurts an impressionable voter. Combining the terms inside the brackets

yields $[(1-\alpha)(\rho(2-p)-1)+\rho\alpha\kappa(1-2p)] < 0$, where the inequality follows because $\rho < 1/2$. Overall, campaigns hurt voters.

2 Consider $\gamma_{-1} = 1$, $\gamma_1 = 0$.

2(a). When $\eta(1,1) = \eta(-1,0) = \eta(1,0) = 1$ and $\eta(-1,1) = 0$, (17) yields

$$\sigma_A^G = \rho[p(1-\alpha\kappa) + (1-p)\kappa] + (1-\rho)[1-p(1-\alpha)],$$

and (16) yields $\sigma_A^B = \rho p$. Using (4), (15), and (12), we get

$$\Delta W = (1-\Pi)\delta[\rho\kappa(1-p-\alpha) + (1-\rho)p(\alpha-1)] - \kappa(1-p(1-\alpha)).$$

The first term inside the brackets is negative, because $1-p-\alpha < 1-p-\alpha p < 0$, where the last inequality holds by assumption. Here, a sophisticated voter loses from allowing campaigns. The second term in the brackets is negative as well: an impressionable voter also loses, and $\Delta W < 0$.

2(b). When $\eta(1,1) = \eta(1,0) = 1$ and $\eta(-1,1) = \eta(-1,0) = 0$, we use the fact that (20) is the same as (17). Therefore, the same reasoning as for 2(a) above shows that both the sophisticated and the impressionable voter is hurt by campaigns in this case.

3 Consider $\gamma_{-1} = 0$ and $\gamma_1 = 1$.

3(a). When $\eta(1,1) = \eta(-1,0) = 1$ and $\eta(1,0) = \eta(-1,1) = 0$, (21) gives

$$\sigma_A^G = \rho(1-\alpha)(1-p) + (1-\rho)(\alpha + (1-\alpha p))$$

and (16) gives $\sigma_A^B = \rho p$. Using (4), (15), and (12), we get

$$\begin{aligned}\Delta W &= (1-\Pi)\delta[\rho(1+(1-p)(1-\alpha)-2p) + (1-\rho)(\alpha-1)(1-p)] - \kappa(\alpha+(1-\alpha)p) \\ &= (1-\Pi)\delta[1-2p+(2\rho-1)(1-\alpha)(1-p)] - \kappa(\alpha+(1-\alpha)p) < 0.\end{aligned}$$

A sophisticated voter may gain or lose, an impressionable voter always loses, and the overall welfare effect of campaigns is negative.

3(b). When $\eta(1,0) = \eta(-1,0) = \eta(1,1) = 1$ and $\eta(-1,1) = 0$, (17) gives

$$\sigma_A^G = \rho[p(1-\kappa) + (1-p)(1-\alpha+\alpha\kappa)] + (1-\rho)(\alpha+p-\alpha p)$$

and (16) gives $\sigma_A^B = \rho p$. Using (4), (15), and (12), we get

$$\Delta W = (1-\Pi)\delta[\rho\{-p\kappa+(1-p)\alpha\kappa+(1-p)(1-\alpha)\}+(1-\rho)(\alpha-1)(1-p)] - \kappa(\alpha+(1-\alpha)p)$$

The second term inside the brackets is negative: an impressionable voter always lose from campaigns. Collecting terms in the brackets yields $[\rho\kappa(-p+(1-p)\alpha)-(1-2\rho)(1-\alpha)(1-p)]$, which is negative since $p > 1/2$ and $1/2 > \rho$. Thus, $\Delta W < 0$. ■

A.4 Extension: negative campaigns

Suppose that bureaucrats can engage in negative as well as positive campaigns, i.e., they can also campaign *against* the incumbent. As explained in the text, given our assumption that apolitical bureaucrats cannot campaign unless directed by the politician, they will never engage in negative campaigns. Suppose therefore that there are two types of political bureaucrats, "supporters" and "opponents." Supporters correspond to the political bureaucrats from the main text, while opponents engage in *negative* campaigns when possible. Let $\alpha \in (0,1)$ be the probability of a supporter, as above, and let $\alpha^* \in (0, 1-\alpha)$ be the probability of an opponent bureaucrat. The probability of an apolitical bureaucrat is therefore $1-\alpha-\alpha^*$.

We assume that negative campaigns have the same policy cost κ as positive campaigns, and that voters see whether a campaign is positive or negative. The impressionable voter's decision rule is now specified as follows: after a positive campaign, reelect; after a negative campaign, do not reelect; if no campaign occurs, reelect with probability ϕ. Notice that this corresponds to our model from the text if we set $\alpha^* = \phi = 0$.

Under weak control, the politician cannot force a positive campaign. Therefore, we assume that opponents engage in negative campaigns irrespective of whether the politician asked for a (positive) campaign. Under strong control, all bureaucrats (including opponents) engage in positive campaigns if the politician asks for them.

The following two results characterize the equilibria under weak control and their welfare properties. When discussing optimal policies, we assume that a ban on campaigns means that both positive and negative campaigns are prohibited. The first result is the analog of Proposition 2

Proposition 8 *Suppose that political control is weak and α is sufficiently small. The bad politician never asks for a campaign.*

1. *An equilibrium with no campaigns ($\gamma_{-1} = \gamma_1 = 0$) exists if and only if $\kappa \geq \delta(1-\Pi)[\rho\kappa + (1-\rho)(1-\phi)]$. In this equilibrium, the voter reelects if and only if the popular policy is implemented.*

2. *An equilibrium with full campaigns ($\gamma_{-1} = \gamma_1 = 1$) exists if and only if $\kappa \leq \delta(1-\Pi)(1-\phi+\phi\rho)$. In this equilibrium, the voter reelects if the bureaucrat engages in a positive campaign, or if there is a negative campaign and the popular policy is implemented.*

3. *An equilibrium with campaigns in the less likely state only ($\gamma_{-1} = 1, \gamma_1 = 0$) exists if and only if $\delta(1-\Pi)(1-\rho)(1-\phi) \leq \kappa \leq \delta(1-\Pi)(1-\phi+\phi\rho)$. In this equilibrium, the voter always reelects with the popular policy but reelects with the unpopular policy only if the bureaucrat engages in a positive campaigns.*

4. *There does not exist an equilibrium with campaigns following the unpopular policy only ($\gamma_{-1} = 0$, $\gamma_1 = 1$).*

Proof. With negative campaigns, Lemmas 1 and 2 still hold. Let $C^* \in \{0,1\}$ indicate whether a negative campaign occurred, let the voter's strategy be $\eta(X, C, C^*)$, and define $\eta(X, C, 0) \equiv \eta(X, C)$ to simplify the notation. It is straightforward to derive results analogous to those of Lemma 4: denoting the probability of a positive campaign by $\tilde{\gamma}_S^* = \alpha + (1-\alpha-\alpha^*)\gamma_S$ and $\tilde{\beta}_S^* = \alpha + (1-\alpha-\alpha^*)\beta_S$, we get

$$\begin{aligned}
\eta(1,1) &= \begin{cases} 1 \text{ if } p(1-\kappa)\tilde{\gamma}_1^* + (1-p)\kappa\tilde{\gamma}_{-1}^* > (1-p)\tilde{\beta}_{-1}^*, \\ 0 \text{ if } p(1-\kappa)\tilde{\gamma}_1^* + (1-p)\kappa\tilde{\gamma}_{-1}^* < (1-p)\tilde{\beta}_{-1}^*, \end{cases} \\
\eta(1,0) &= \begin{cases} 1 \text{ if } p(1-\tilde{\gamma}_1^*) > (1-p)(1-\tilde{\beta}_{-1}^*), \\ 0 \text{ if } p(1-\tilde{\gamma}_1^*) < (1-p)(1-\tilde{\beta}_{-1}^*), \end{cases} \\
\eta(1,0,1) &= 1, \\
\eta(-1,1) &= \begin{cases} 1 \text{ if } p\kappa\tilde{\gamma}_1^* + (1-p)(1-\kappa)\tilde{\gamma}_{-1}^* > p\tilde{\beta}_1^*, \\ 0 \text{ if } p\kappa\tilde{\gamma}_1^* + (1-p)(1-\kappa)\tilde{\gamma}_{-1} < p\tilde{\beta}_1^*, \end{cases} \\
\eta(-1,0) &= \begin{cases} 1 \text{ if } (1-p)(1-\tilde{\gamma}_{-1}^*) > p(1-\tilde{\beta}_1^*), \\ 0 \text{ if } (1-p)(1-\tilde{\gamma}_{-1}^*) < p(1-\tilde{\beta}_1^*), \end{cases} \\
\eta(-1,0,1) &= 0.
\end{aligned}$$

A good politician's payoff from a positive campaign *occurring* is given by C^G in (7) above. Letting C^{G*} denote his payoff from a negative campaign, his payoff from asking for a positive campaign is $(1-\alpha^*)C^G + \alpha^* C^{G*}$. His payoff from not asking for a campaign is

$$\alpha C^G + (1-\alpha-\alpha^*)\left[1 + \delta\left[\rho\left[\eta(S,0) + (1-\eta(S,0))\Pi\right] + (1-\rho)((1-\phi)\Pi + \phi)\right]\right] + \alpha^* C^{G*}.$$

Comparing the two expressions yields the best response

$$\gamma_S = \begin{cases} 1 \text{ if } \delta(1-\Pi)\left[\rho\left[\kappa\eta(-S,1)+(1-\kappa)\eta(S,1)-\eta(S,0)\right]+(1-\rho)(1-\phi)\right] > \kappa, \\ 0 \text{ if } \delta(1-\Pi)\left[\rho\left[\kappa\eta(-S,1)+(1-\kappa)\eta(S,1)-\eta(S,0)\right]+(1-\rho)(1-\phi)\right] < \kappa. \end{cases} \tag{28}$$

Proceeding similarly for a bad politician yields

$$\beta_S = \begin{cases} 1 \text{ if } \rho[\eta(-S,1)-\eta(-S,0)]+(1-\rho)(1-\phi) > 0, \\ 0 \text{ if } \rho[\eta(-S,1)-\eta(-S,0)]+(1-\rho)(1-\phi) < 0. \end{cases} \tag{29}$$

Using (28) and (29), one may proceed exactly as in the proof of Proposition 2 to establish the results in the proposition. ■

As Proposition 8 makes clear, the possibility of negative campaigns does not affect the equilibrium behavior of politicians. For the voter, the main difference is that she may now see a negative campaign. In this case, she will reelect if and only if the popular policy is implemented.

The following result, the analog of Proposition 3, describes the welfare impacts of allowing bureaucratic campaigns when these can also be negative. In addition to assuming that the share of supporters (α) is small (as we do in the text), we also assume that the share of opponents (α^*) is small. This approach simplifies our analysis and is consistent with our goal in the section, which is to study the robustness of our results from the text to negative campaigning by political bureaucrats. To do this, we restrict the parameters of our extended model to lie near those of our main model.

Proposition 9 *Suppose that both α and α^* are sufficiently small.*

1. *Banning campaigns by bureaucrats is optimal whenever voters expect the no-campaigning equilibrium.*

2. *When campaigns are expected in equilibrium, allowing campaigns always benefits an impressionable voter, while it may benefit or hurt a sophisticated voter. In particular,*

   (a) Banning campaigns by bureaucrats is optimal if

   $$\kappa \geq \kappa_P^* \equiv \frac{\delta(1-\Pi)\left[(1-p)(1-\alpha-\alpha^*)[\rho+(1-\phi)(1-\rho)]-\alpha\rho(2p-1)\right]}{\delta(1-\Pi)\rho\alpha^*(2p-1)+1-p(1-\alpha-\alpha^*)}.$$

   (b) Allowing campaigns by bureaucrats is optimal if

   $$\kappa \leq \kappa_F^* \equiv \delta(1-\Pi)\frac{(1-\alpha-\alpha^*)[\rho+(1-\phi)(1-\rho)]-\rho(2p-1)(1-\alpha^*)}{\delta(1-\Pi)\rho\alpha^*(2p-1)+1},$$

where $\kappa_F^* < \kappa_P^*$.

(c) *If* $\kappa_F^* \leq \kappa \leq \kappa_P^*$, *allowing campaigns by bureaucrats is optimal if voters expect the partial-campaigning equilibrium but banning campaigns is optimal if voters expect the full-campaigning equilibrium.*

Proof. When campaigns are banned, we have $\sigma_\emptyset^G = \rho p + (1-\rho)\phi$, $\sigma_\emptyset^B = \rho p + (1-\rho)(1-\phi)$, so that $\sigma_\emptyset = 2\rho p + 1 - \rho$ as before. Thus, the welfare impact of allowing campaigns is still given by expression (4) in the text.

In the no-campaigning equilibrium, we have $\sigma_N^G = \rho[p(1-(\alpha+\alpha^*)\kappa)+(1-p)(\alpha+\alpha^*)\kappa] + (1-\rho)(\alpha+(1-\alpha-\alpha^*)\phi)$, $\sigma_N^B = \rho p+(1-\rho)((1-\alpha-\alpha^*)(1-\phi)+\alpha^*)$, and $Q_N^G = 1-(\alpha+\alpha^*)\kappa$. Thus,

$$\Delta W = \delta(1-\Pi)\rho\kappa(\alpha+\alpha^*)(1-2p) - (\alpha+\alpha^*)\kappa < 0.$$

In the full-campaigning equilibrium, $\sigma_F^G = \rho[\alpha^*[p(1-\kappa)+(1-p)\kappa]+(1-\alpha^*)] + (1-\rho)(1-\alpha^*)$, $\sigma_F^B = \rho[(1-\alpha-\alpha^*)+\alpha^* p] + (1-\rho)[(1-\alpha-\alpha^*)(1-\phi)+\alpha^*]$, and $Q_F^G = 1-\kappa$. Algebra yields

$$\Delta W = \delta(1-\Pi)[(1-\alpha-\alpha^*)[\rho+(1-\phi)(1-\rho)] - \rho(2p-1)(1-\alpha^*) - \kappa\rho\alpha^*(2p-1)] - \kappa,$$

and $\Delta W \geq 0$ iff $\kappa \leq \kappa_F^*$.

In the partial campaigning equilibrium, $\sigma_P^G = \rho[\alpha^*[p(1-\kappa)+(1-p)\kappa]+(1-\alpha^*)] + (1-\rho)[p[\alpha+(1-\alpha-\alpha^*)\phi]+(1-p)(1-\alpha^*)]$, $\sigma_P^B = \rho p(1-\alpha)+(1-\rho)[(1-\alpha-\alpha^*)(1-\phi)+\alpha^*]$, and $Q_P^G = 1-\kappa[1-p(1-\alpha-\alpha^*)]$. We get

$$\begin{aligned}\Delta W = \delta(1-\Pi)\,&[(1-p)(1-\alpha-\alpha^*)[\rho+(1-\phi)(1-\rho)] - \alpha\rho(2p-1) - (2p-1)\kappa\alpha^*\rho] \\ &- \kappa[1-p(1-\alpha-\alpha^*)],\end{aligned}$$

and $\Delta W \geq 0$ iff $\kappa \leq \kappa_P^*$.

From the expressions for κ_P^* and κ_F^*, it can be verified that $\kappa_P^* - \kappa_F^* > 0$ whenever both α and α^* are sufficiently small, as desired. ■

Corollary 3 *Holding the share of supporters constant, increasing* α^* *makes allowing campaigns by bureaucrats less desirable. Holding the share of apolitical bureaucrats constant, increasing* α^* *makes allowing campaigns by bureaucrats weakly more desirable.*

Proof. Follows by inspection of the ΔW expressions in the proof of Proposition 9. ■

Interestingly, Corollary 3 shows that opponent bureaucrats are less socially costly than supporters. Both types may blur the communication between politicians and voters, and

both create policy costs. However, while campaigns by supporters may be misinterpreted as reflecting the politician's choice, this is not the case for campaigns by opponents. Negative campaigns reduce uncertainty by revealing the bureaucrat's type, and allow the voter to focus on policies alone when deciding whether to reelect.

Turning to strong control, the following result, which characterizes equilibrium behavior, is the analog of Proposition 4.

Proposition 10 *Suppose that α is sufficiently small. The bad politician always asks for a campaign.*

1. *An equilibrium with no campaigns ($\gamma_{-1} = \gamma_1 = 0$) exists if and only if $\rho \leq 1/2$ and , $\kappa \geq \delta(1-\Pi)[(1-\rho)(1-\phi)-\rho]$. In this equilibrium, the voter reelects if and only if there is no positive campaign.*

2. *An equilibrium with campaigns in the less likely state only ($\gamma_{-1} = 1$, $\gamma_1 = 0$) exists if and only if $\rho \leq \frac{1-\phi}{2-\phi}$ and $\delta(1-\Pi)[(1-\rho)(1-\phi)-\rho] \leq \kappa \leq \delta(1-\Pi)(1-\rho)(1-\phi)$. In this equilibrium, the voter reelects following the unpopular policy only if there is a negative campaign, and reelects with the popular policy only if there is no positive campaign.*

3. *An equilibrium with campaigns following the more likely state only ($\gamma_{-1} = 0$, $\gamma_1 = 1$) exists if and only if $\rho \leq \frac{1-\phi}{2-\phi}$ and $\delta(1-\Pi)[(1-\rho)(1-\phi)-\rho] \leq \kappa \leq \delta(1-\Pi)(1-\rho)(1-\phi)$. In this equilibrium, the voter reelects following the popular policy only if there is a negative campaign, and reelects following the unpopular policy only if there is no positive campaign.*

4. *An equilibrium with full campaigns exists if and only if $\kappa \leq \delta(1-\Pi)\min\left\{\frac{1-\phi+\phi\rho}{1+\rho\delta(1-\Pi)}, \frac{1-\rho-\phi+\phi\rho}{1-\rho\delta(1-\Pi)}\right\}$. In all such equilibria, under a positive campaign the voter reelects following the popular policy and does not reelect following the unpopular policy. Under a negative campaign, or if the bureaucrat does not campaign, then the voter may reelect or not, but all such equilibria yield the same payoffs to all voter types.*

Proof. Now $\eta(X, C)$ is exactly as in Lemma 4, and we have $\eta(1, 0, 1) = \eta(-1, 0, 1) = 1$ (unless $\gamma_1 = \gamma_{-1} = 1$, in which case negative campaigns have probability 0). Using (28) and (29), one may proceed exactly as in the proof of Proposition 4 to establish the results in the proposition. ■

As before, the possibility of negative campaigns does not affect the behavior of politicians. For the voter, the difference is that a negative campaign now fully reveals the politician's

type. This is because under strong control, a negative campaign can only occur if the politician did not ask for a positive campaign, and this in turn can only occur under a good politician.

The following result is the analog of Proposition 5.

Proposition 11 *Allowing bureaucrats to campaign always hurts an impressionable voter. It may benefit or hurt a sophisticated voter. Overall, banning campaigns is always optimal.*

Proof. When campaigns are allowed, $Q_A^G = 1 - \kappa[\alpha + \alpha^* + (1 - \alpha - \alpha^*)[p\gamma_1 + (1 - p)\gamma_{-1}]]$. When they are prohibited, $Q_\emptyset^G = 1$, so that the policy impact of allowing campaigns is

$$Q_A^G - Q_\emptyset^G = -\kappa[\alpha + \alpha^* + (1 - \alpha - \alpha^*)[p\gamma_1 + (1 - p)\gamma_{-1}]] < 0.$$

For the impact of screening, note that σ_A^B is still given by (16). Furthermore, good politicians are reelected by the impressionable voter with probability $\Gamma^* \equiv p[\tilde{\gamma}_1+(1-\tilde{\gamma}_1)\phi]+(1-p)[\tilde{\gamma}_{-1}+(1-\tilde{\gamma}_{-1})\phi]$.

1. Consider $\gamma_{-1} = \gamma_1 = 0$. We find $\sigma_A^G = \rho(1 - \alpha) + (1 - \rho)\alpha$ and $\sigma_A^B = \rho$. This implies

$$\Delta W = (1 - \Pi)\delta\left[\rho[2(1 - p) - \alpha] + (1 - \rho)[\alpha + (1 - \alpha)\phi - 1]\right] - (\alpha + \alpha^*)\kappa,$$

which can be shown to be negative using the bounds in Proposition 10.

2. Consider $\gamma_{-1} = 1$, $\gamma_1 = 0$. Now $\sigma_A^G = \rho p(1 - \alpha) + (1 - \rho)[1 - p + p(\alpha + (1 - \alpha)\phi)]$ and $\sigma_A^B = \rho$. In turn, we find

$$\Delta W = (1 - \Pi)\delta[\rho[1 - p - \alpha p] + (1 - \rho)p[\alpha + (1 - \alpha)\phi - 1]] - \kappa[1 - p(1 - \alpha - \alpha^*)],$$

which is negative when this equilibrium exists (Proposition 10).

3. Consider $\gamma_{-1} = 0$ and $\gamma_1 = 1$. We find $\sigma_A^G = \rho(1 - \alpha)(1 - p) + (1 - \rho)[p + (1 - p)(\alpha + (1 - \alpha)\phi)]$ and $\sigma_A^B = \rho$. This yields

$$\Delta W = (1-\Pi)\delta[\rho[1+(1-p)(1-\alpha)-2p]+(1-\rho)(\alpha-1)(1-\phi)(1-p)]-\kappa[\alpha+\alpha^*+(1-\alpha-\alpha^*)p]$$

and this is negative.

4. Finally, consider $\gamma_{-1} = \gamma_1 = 1$. For all strategies of the voter described in Proposition 10, we have $\eta(1, 1) = 1$ and $\eta(-1, 1) = 0$, which yields $\sigma_A^G = \rho\tilde{p} + 1 - \rho$ and $\sigma_A^B = \rho p$. This implies

$$\Delta W = (1 - \Pi)\delta\rho(\tilde{p} - p) - \kappa < 0.$$

■

Corollary 4 *Holding the share of supporters constant, increasing α^* makes the welfare effect of allowing campaigns more negative. Holding the share of apolitical bureaucrats constant, increasing α^* makes the welfare effect of allowing campaigns weakly less negative.*

Proof. Follows by inspection of the ΔW expressions in the proof of Proposition 11. ■