How Organizational Capacity Can Improve Electoral Accountability

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Abstract

The organizational structure of the bureaucracy is a key determinant of policy outcomes. Bureaucratic agencies exhibit wide variation in their organizational capacity, which allows politicians to strategically shape policy implementation. This paper examines what bureaucratic structure implies for the ability of voters to hold politicians electorally accountable. It explicitly models differences in organizational capacity across bureaucratic agencies and considers a problem where a politician must decide not only which policy to choose but which agency, or combination of agencies, will implement it. The choice of implementation feeds back into the choice of policy and this, in turn, affects how voters perceive the performance of the incumbent. This creates a chain of interdependence from agency structure to policy choice and political accountability. The formal model shows that the variation in organizational capacity serves the interests of voters by improving electoral control of politicians.

Keywords: organizational capacity, electoral accountability, bureaucratic politics

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1 Introduction

Policies are not only formulated, they must be implemented. A new piece of legislation must specify not only the goals and parameters of a policy, but also who will put it into effect. This leaves legislators with a choice. Should they implement policy through an independent agency or through an agency under the control of the executive branch? Should implementation be at the federal level or delegated to the states? Or, as often occurs during crises, should legislators create an entirely new entity for the policy, one that falls even more completely under the control of the executive itself? These choices matter for the outcomes that policies produce and, therefore, for the quality of democratic governance.

That implementation matters is, of course, not news to scholars of public bureaucracy. This rich field has shed much light on the differences in quality, capability, independence, and even speed across government agencies. The seminal work of Carpenter (2001, 2014) demonstrates how bureaucratic agencies can achieve policy autonomy from politicians, and that independence is tightly connected to an agency's organizational capacity.

In this paper I show how differences in organizational capacity matter beyond the bureaucracy itself. I examine how these differences feed back through the political system, into the formation of policy and from there to the nature of political accountability itself. This delivers two main results. The first is that variation in bureaucratic organizational capacity can improve electoral accountability. It does so on the one hand because the political decision of *which* agency will implement policy informs voters as to the politician's true intent, and this disciplines his behavior. On the other hand, bureaucratic capacity allows some agencies to take actions to maintain their control over policy going forward. These actions have the effect of tying the hands of the politician in future periods, should he be reelected to office.

The second insight is that variation in organizational capacity within the bureaucracy emerges endogenously over time as a rational response of voters to the problem of electoral accountability. Having multiple agencies of different organizational capacity tasked with the same policy's implementation might at first glance seem inefficient. This resonates with the classic account of Moe (1989) that bureaucratic inefficiency and variation is deliberate, that "public bureaucracy is not designed to be effective" as it serves the interests of politicians and bureaucrats. My model goes beyond considering just the interests of politicians or of the bureaucracy. It shows that this bureaucratic structure in fact serves the interests of voters, by facilitating electoral accountability.

Organizational Capacity and Policymaking in Practice

Two clear examples help illuminate the importance of organizational capacity for policy implementation. First, the FDA in the United States is the classic example of bureaucratic competence paired with independence. As carefully documented by Carpenter (2001), the FDA's handling of the Thalidomide crisis helped the FDA forge a reputation for scientific competence that, over time, provided it with a degree of independence—and permanence. This pairing of organizational capacity and independence has allowed the FDA to stand apart form political pressure and keep policy on a course that is informed by science. That path has been tested in 2020 in another crisis—the Covid crisis—and the need for a vaccine development and approval in a remarkable 2020 presidential election year.

Another example where the importance of organizational capacity was starkly clear is the policy response in 2009 to the financial crisis, documented in Tooze (2018). The crisis necessitated a large scale bail-out package to rescue the economy (as was needed again in 2020). This bail-out focused on the financial sector and the auto industry. The original spending program, known as the Troubled Asset Relief Package (TARP), was, effectively, placed at the full discretion of the president, though the U.S. Treasury. Although the TARP program proved flexible in its response, the scale of the crisis grew to the point that the task of providing funding for troubled financial institutions and related affected industries was extended simultaneously to the Federal Reserve (Fed). The Fed is not only marked by more independence from the president—to empower commitment in the running of monetary policy—but it has developed a high organizational capacity to carry this out.

A feature of this bifurcation that was particularly striking was that the bureaucratic differences visibly spilled over into public opinion and electoral politics. It is this spillover that motivates the present study. First, at the creation of TARP, the members of Congress facing a more contested re-election bid did not support it, and several others opposed it, fearing the electoral consequences of this policy (Mian, Sufi and Trebbi, 2010). Second, the shift in policy implementation towards the independent agency (the Fed) happened as voter support for bailout programs under the control of politicians, like TARP, collapsed.[1] Part of the negative public opinion involved the question of whether these bailout packages were a necessary response to the crisis or too large of a rescue offered to lobbying banks connected to politicians. Thus, it appeared that policy implementation through an agency under the president's control was no longer electorally desirable. A shift of policy implementation to the independent Fed allowed instead for increased public support for the policy.[2]

The examples just provided share the common feature that policy choices were forged in crisis. Crisis times illuminate the connections between the bureaucracy and electoral politics most clearly, but a crisis is not necessary for those connections to be important. I take up policymaking more broadly in the discussion section, and, to make the general case, I provide an example not resulting directly from an abrupt crisis, by looking at the case of renewable energy subsidies.

Incorporating the Bureaucracy into Theories of Accountability

[1] A proposed bailout of the Detroit automakers failed to pass a Senate vote in December 2008; in response, the President redirected funds from the TARP towards bailing out the automakers. For more details, see Stephen Labaton and David M. Herszenhorn, "White House Ready to Offer Aid to Auto Industry," The New York Times, December 12,2008, page A1.

[2] See, for example, the account by Neil Barowsky in "Where the Bailout Went Wrong," The New York Times, March 30, 2011, page A27

Models of bureaucratic policymaking are abundant.[3] So too are models of political accountability. What has heretofore been rare are models that combine the two domains. An exception is the seminal contribution of Fox and Jordan (2011). These authors focus on the decision *whether* to delegate authority to a bureaucracy, demonstrating how doing so allows a politician to avoid accountability, hurting voters. My interest is not on whether to delegate or not, but to *which* agency to assign policy implementation, and I show how this choice helps voters.

In the model, a politician must decide not only which policy to choose but which agency, or combination of agencies, to delegate implementation to. I allow for two distinct agencies. One, like the Fed, pairs high organizational capacity with independence from the politician, and is efficient at implementing large scale programs. The second agency is the reverse. It is more nimble, closer to the politician and, thus, more controllable. As in the example of the TARP program and the Fed, the efficiency of the independent agency—like any large organization—is in large scale programs, and that for smaller programs and budgets, the more nimble agency is more efficient. To use an economics analogy, this is akin to the independent agency having large fixed costs and smaller marginal costs, whereas the nimble agency has lower fixed but higher marginal costs that render it competitive for small programs but inefficient with any large scale programs.[4]

I link agency independence to policy persistence. When a politician grants authority to an independent agency, it is difficult to get it back. Whether because passing new legislation is difficult, or because the political cost of retracting authority is high, independent agencies are powerful precisely because, once they are in charge of a program, it is difficult to remove

[3]A large formal theory literature has emphasized the importance of bureaucratic implementation in determining whether governments can implement their governing programs (Bendor and Meirowitz, 2004; Gailmard and Patty, 2007; Besley and Persson, 2010; Ting, 2011; Gratton et al., 2020)

[4]One might think of an even broader set of agencies with various combinations of these attributes. I focus on these two as they are the most empirically relevant. The ideas described here should extend to a larger set of agency types, and exploring the possibilities is an interesting avenue for future research.

them (Berry, Burden and Howell, 2010). A grant of authority to an agency is persistent over time. Formally, the budget allocated to the independent agency can only increase over time.[5]

Although simple, this model establishes an important trade-off for the politician. Should he delegate policy to the high capacity agency and achieve a more efficient outcome even if he loses control? Or should he keep policy implementation close, even if that implies a less efficient implementation? And how does this choice depend on the private information he holds about the policy needs? Voters observe the politician's choice and decide whether to re-elect him or replace him with a challenger.

I show that in the unique equilibrium the politician's probability of reelection is increasing in the extent to which policy implementation is through the high capacity agency. That is, voters reward a politician who gives up authority to an independent agency. This may appear to be a good outcome—that high performance is rewarded—but in fact it represents a distortion. Implementation via the high capacity agency is efficient only if the scale of the need does not change dramatically over time. If the politician is rewarded for choosing this implementation, and authority cannot be pulled back when the need subsides, then the authority and budget granted to independent agencies is too great. The famed bloat in the public bureaucracy, therefore, may not so much be the result of bureaucratic empire building (Higgs, 1987), but due to the politician's desire show voters that he is behaving responsibly, and to do so he is willing to give up authority.

A novel feature that emerges from the model is that this distortion has a long-term effect on the policy path. Because the high capacity agency is independent—and, thus, difficult to claw back authority from—an inflated grant of authority today carries over to tomorrow and binds policymaking going forward. This, in turn, changes the character of political

[5] This resonates with recent theoretical work on legislative bargaining by Bowen, Chen and Eraslan (2014) and Piguillem and Riboni (2015).

accountability as the policymaker must now operate in a more constrained environment.[6] Dynamically, the independent agency is useful for the voter in achieving better accountability. But it's usefulness is limited, as persistent control over policy results in more bloated, and thus costlier, public programs. I show that this tension can be resolved over time if control is given to the independent agency in the short-run, but the control is gradually reduced in the longer horizon. This allows for enhanced electoral accountability without sacrificing policymaking freedom in the long-run. In practice, this means allowing for some short-run stickiness of government programs run by independent agencies, and for the eventual demise of these programs in the long-run, as documented empirically by Berry, Burden and Howell (2010).

In tracing through the causal chain from bureaucratic implementation through policy choice and the voters' choice, I am able to show not only how political accountability is connected to bureaucratic capacity, but I establish the conditional nature of political accountability. In the concluding discussion I take up what this means for empirical studies of policy implementation and how they can be adjusted to account for this conditionality.

In connecting bureaucratic structure to political accountability, the model also relates to the large literature on bureaucratic function and design. The discussion about organizational capacity in the context of the bureaucracy traces back to Moe (1989) and more recently to the formal models introduced by Huber and McCarty (2004) and Ting (2011). Similar to this paper, Snowberg and Ting (2019) also explore formally the connection between organizational capacity and policy implementation, although their focus is on design of the bureaucratic hierarchy whereas mine seeks to connect to political accountability.[7]

[6] This implication is appealing as it avoids the unsatisfying feature of standard models of political accountability in which the second (and last) period is marked by complete policymaking freedom. My model shows why that might not be so, and that the explanation—the organizational capacity of the bureaucracy—feeds back into the nature of political accountability itself.

[7] In connecting the bureaucracy to policymaking, my model assumes delegated authority over policy implementation to agencies. The large literature on delegation focuses on expertise—delegation is to utilize the expertise within the bureaucracy—a motivation that is absent from my study (see Callander and Krehbiel,

2 Model

Consider an environment with two time periods, 1 and 2, an incumbent politician, a voter, and a bureaucracy consisting of two agencies.[8] At the end of period 1, the voter decides whether to re-elect the politician or to replace the incumbent with an identical politician (as in the classic Ferejohn, 1986). Each period, the politician decides how much of a public good to provide and how to assign this provision between two bureaucratic agencies.

The Public Good. Each period, the bureaucratic agencies produce a public good, g. The value of this good for the voter depends on an underlying economic state, θ, which may be low, $\underline{\theta}$, with probability $p \in (0, 1)$, or high, $\bar{\theta}$, with probability $1 - p$. The high state corresponds to a period in which government spending is highly valuable, for instance due to an economic crisis, while the low state corresponds to a state in which government spending is less valuable, for instance a period of economic boom. The voter does not directly observe the realization of the state θ until after the election.

Agencies and Organization Capacity. The two agencies differ in terms of organizational capacity, as described below. One is low capacity (denoted l) and the other one is high capacity (denoted h). At the beginning of each period, the politician assigns a budget $B^l \geq 0$ to the former and a budget $B^h \geq 0$ to the latter. Each agency uses its budget to produce the public good, resulting in a total public good $g = g^h + g^l$, where g^l is produced by the low capacity agency, and g^h by the high capacity agency. The agencies differ along three dimensions that make up organizational capacity, each mapping an empirical observation to a quantifiable characteristic:

2014 for a model of delegation without expertise). My interest is organizational structure and capacity, and to focus on the policymaking role of those characteristics, I set aside the issue of expertise. In the Online Appendix, I show how expertise does not change the conclusions of the model.

[8] In Section 5, the model is generalized to an infinite time horizon.

1. Independence: Higher organizational capacity allows an agency to independently choose how to provide the public good. In the low capacity agency, the politician can influence the public good provision process, and by doing so he can derive private rents $\gamma \cdot g^l$. These rents may come, for instance, in the form of electoral benefits (targeting public spending to particular electoral districts) or as the result of lobbying for support from connected firms to receive subsidies above the socially optimal level.

2. Persistence: Once B^h is allocated to the high capacity agency in period 1, it becomes mandatory in period 2. This property captures the ability of a high capacity agency to develop processes and knowledge that allow it to maintain control over policy in the future. The low capacity agency, however, may have its budget reduced in period 2.

3. Scalability: The high capacity agency produces the public good at a cost $\alpha \cdot g^h$, for $\alpha \geq 0$.[9] The low capacity agency can produce the public good at a convex and increasing cost $c\left(g^l\right)$, with $c(0) = 0$.[10] This property captures the empirical observation that agencies with high organizational capacity develop the personnel and resources for running a large scale program, as exemplified in the introductory discussion. Yet, the additional cost of these procedures makes providing a small quantity of public good less cost efficient compared to a nimbler low capacity agency.[11]

Preferences and Payoffs. Each period, the voter derives utility from the public good:

$$v = \mathbb{E}_\theta \left[-\frac{1}{2} \cdot \left(g^h + g^l - \theta\right)^2 - \alpha \cdot g^h - c\left(g^l\right) \right]. \tag{1}$$

[9]The linearity of this cost is not a necessary assumption for the results, but it is made for simplicity. One only needs to assume that, initially, this cost increases slower than the cost of a low capacity agency.

[10]For analytical convenience, we assume $c\left(g^l\right)$ is continuous and twice differentiable.

[11]The above characteristics are associated with organizational capacity in an environment with a singular public good. In an alternative model with multiple public goods, where only some types of public goods deliver rents, the boundaries between these characteristics may be less clear: persistence may also be a feature of politicization of less independent agencies that deliver the type of public good preferred by the politician. The extension to multiple types of public goods may therefore require a distinction between persistence due to within agency process development and persistence due to politicization of certain types of public goods.

This utility function reflects both the benefit to the voter from the public good as well as the cost to the voter of public spending, since public funds are ultimately obtained through taxation. Notice also that g^h and g^l are substitutes in the voter's utility. Regardless of which agency provides it, there is only one type of public good to fulfill the economic need dictated by the state θ.

While in office, the politician derives per-period utility

$$u = -\frac{1}{2} \cdot \left(g^h + g^l - \theta\right)^2 - \alpha \cdot g^h - c\left(g^l\right) + \gamma \cdot g^l.$$

The parameter γ captures the intensity of lobbying or political self-interest in the specific domain in which the public good is provided. If the politician is removed from office, then in period 2 the politician derives utility $\underline{U}$.

Each agency provides the most public good possible given its available budget. The model abstracts from the case in which the bureaucrats might have different policy preferences or information compared to the politician.[12] The organizational structure of the bureaucracy and the politician's delegation of policy implementation to bureaucratic agencies is taken as given. The focus is on the politician's decision to allocate policy implementation *across* agencies with different organizational capacities, given the voter's re-election strategy.

Electoral Accountability. At the end of period 1, an election is held. The voter decides whether to keep the incumbent politician or to replace him with an ex-ante identical politician. The problem for the voter is therefore one of accountability rather than selection (Ferejohn, 1986). Formally, I examine the following extensive form game (represented also in Figure 1):

1. In period 1, Nature chooses value θ_1, which is observed by the incumbent politician;

[12] The case in which the high capacity agency has better information (expertise) than the politician is addressed in an extension in the Online Appendix.

2. The voter announces a re-election probability $q(B_1^l, B_1^h) \in [0,1]$ for the politician (she can commit to q within period);
3. The politician chooses agency budgets B_1^l and B_1^h;
4. The voter observes B_1^l, B_1^h and makes her re-election decision given $q(B_1^l, B_1^h)$;
5. In period 2, Nature chooses value θ_2, and the politician chooses B_2^l and B_2^h under the constraint that $B_2^h \geq B_1^h$.
6. The public good is produced and payoffs are realized at the end of each period.

I derive and analyze the unique Subgame Perfect Equilibrium of this game.

Parameter Restrictions. In order to clearly differentiate between public good provision in times of high need ($\theta = \bar{\theta}$) versus in times of low need ($\theta = \underline{\theta}$), consider the following situation. In times of low need, both the voter and the politician prefer provision exclusively through the more nimble low capacity agency. In times of high need, large scale public good provision is better done with some implementation by the high capacity agency. This scenario is ensured under the following parameter restriction:

Assumption 1 *The marginal cost of public good provision satisfies the following inequalities:*

$$\bar{\theta} \geq \alpha + c'^{-1}(\alpha) > \underline{\theta}. \tag{2}$$

This assumption says that, if the value of the public good is low, then the marginal benefit from more public good is lower than the marginal operating cost of the high capacity agency. This implies that provision by the high capacity agency is too costly for the voter. Conversely, when the value of the public good is high, then the marginal benefit from more public good

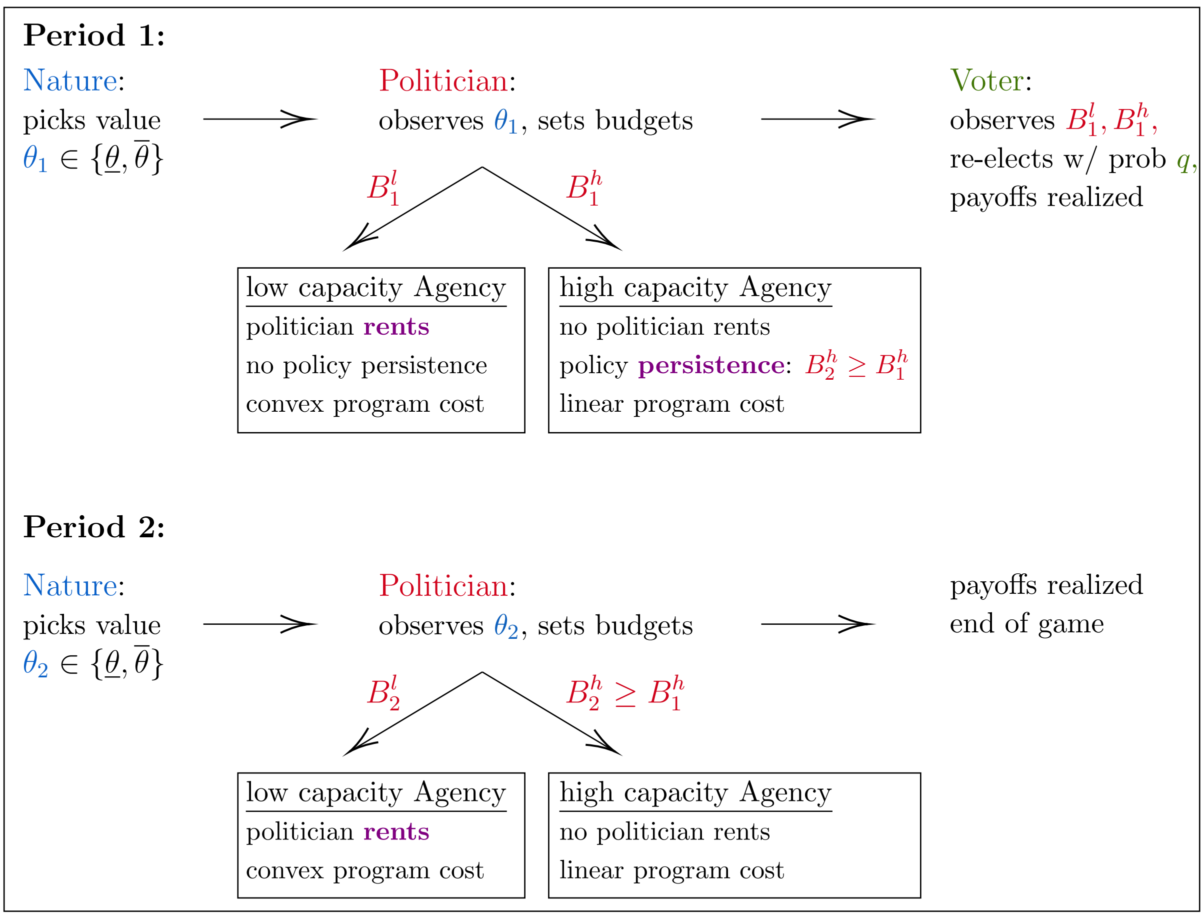


Figure 1: Summary of the game

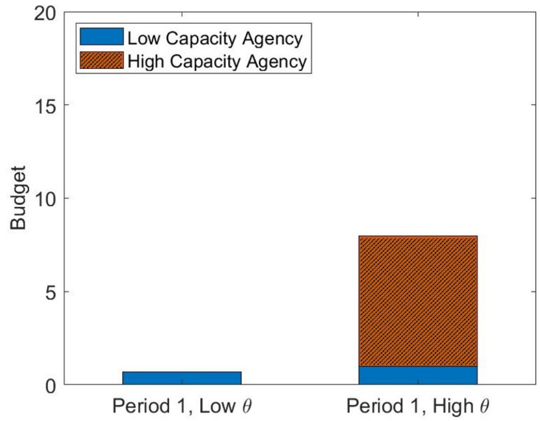
is higher than the marginal operating of cost of the high capacity agency. Thus, it would be preferable for the voter to have provision by this agency.

3 No Electoral Accountability

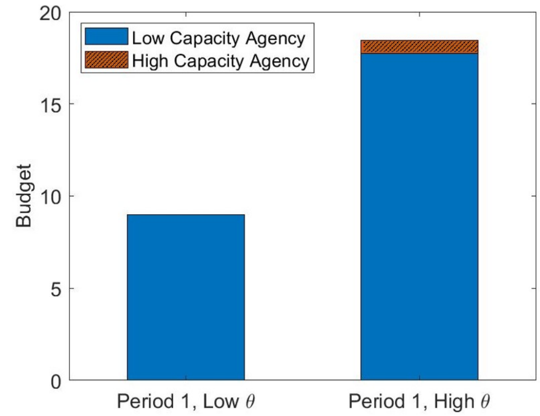
To clarify the different components of the model, it is useful to illustrate the role played by each component in the causal chain, from bureaucratic structure to politician's budget allocation, to the voter's re-election decision.

No Re-election and No Bureaucratic Persistence. First, analyzing a one-period version of the model, without re-election or bureaucratic persistence, shows that the politician's bias leads to a different bureaucratic implementation than preferred by the voter. If the voter could observe $\theta = \overline{\theta}$ and choose agency budgets, she would provide budget $B^{l,v}(\overline{\theta})$ to the low capacity agency, such that public good production $g^{l,v}(B^{l,v})$ satisfies $c'\left(g^{l,v}\right) = \alpha$. She would provide budget $B^{h,v}$ to the high capacity agency such that $g^{h,v}(\overline{\theta}) = \overline{\theta} - g^{l,v} - \alpha$. The politician, however, would choose to provide a higher budget to the low capacity agency and a lower budget to high capacity agency. The resulting public good provision is $g^{l,p}(\overline{\theta})$ such that $c'\left(g^{l,p}\right) = \alpha + \gamma$, and $g^{h,p} = \max\{0, \overline{\theta} - g^{l,p} - \alpha\}$. If the economic need is low, $\theta = \underline{\theta}$, both the politician and the voter prefer provision solely through the low capacity agency, but the politician prefers more public good provision than the voter. The resulting public good produced is $g^{l,p}(\underline{\theta})$ at which $g^{l,p} + c'\left(g^{l,p}\right) = \underline{\theta} + \gamma$, whereas the voter's ideal satisfies $g^{l,v}(\underline{\theta}) < g^{l,p}(\underline{\theta})$, such that $g^{l,v} + c'\left(g^{l,v}\right) = \underline{\theta}$. Figure 2 summarizes these observations graphically.

Bureaucratic Persistence with No Reelection Constrains For the second benchmark, consider the resulting budget allocation without the prospect of electoral account-



(a) Voter's preferred allocation



(b) Politician's preferred allocation

Figure 2: Illustrates the agency budgets preferred by the voter (Panel a) and by the politician (Panel bt) in a one-period benchmark. The calculation for all figures is done for $\theta_L = 0.25, \theta_H = 0.65, p = 0.6, \beta = 0.95, \gamma = 0.65, \alpha = 0.2, c(g) = g^2$.

ability. For this, changing the timing of the model such that re-election cannot be tied to agency budgets, because the voter observes these budgets only after the election. Without observing policy before the election, the voter cannot hold the politician accountable. This means that the politician will choose his preferred policy implementation, denoted by $B_t^{l*}(\theta)$ and $B_t^{h*}(\theta)$. The persistence of policy within the high capacity agency means that there is an implicit additional cost to allocating funds to this agency in period one. Both the voter and the politician would therefore prefer to reduce funding to the high capacity agency compared to the one period benchmark. The voter's preferred budgets in period 1, denoted by $B_1^l(\theta)$ and $B_1^h(\theta)$, satisfy $B_1^l(\underline{\theta}) = B^{l,v}(\underline{\theta})$, $B_1^h(\underline{\theta}) = 0$ and

$$c'(g_1^l(B_1^l, \overline{\theta})) = \alpha + p \cdot (\alpha - c'(g_2^{l*}(B_2^{l*}, \underline{\theta})), \tag{3}$$

$$g_1^h(B_1^h, \overline{\theta}) = \overline{\theta} - c'(g_1^l(B_1^l, \overline{\theta})) - g_1^l(B_1^l, \overline{\theta}). \tag{4}$$

The term $p \cdot (\alpha - c'(g_2^{l*}(B_2^{l*}, \underline{\theta}))$ captures the cost of allocating funds to the high capacity agency in terms of less discretion to fund the low capacity agency in the next period.

The politician's preferred budgets reflect the same trade-offs as the voter's, with the added bias towards funding the low capacity agency, so that

$$c'(g_1^{l*}(B_1^{l*},\overline{\theta})) = \alpha + \gamma + p \cdot (\alpha + \gamma - c'(g_2^{l*}(B_2^{l*},\underline{\theta})) \tag{5}$$

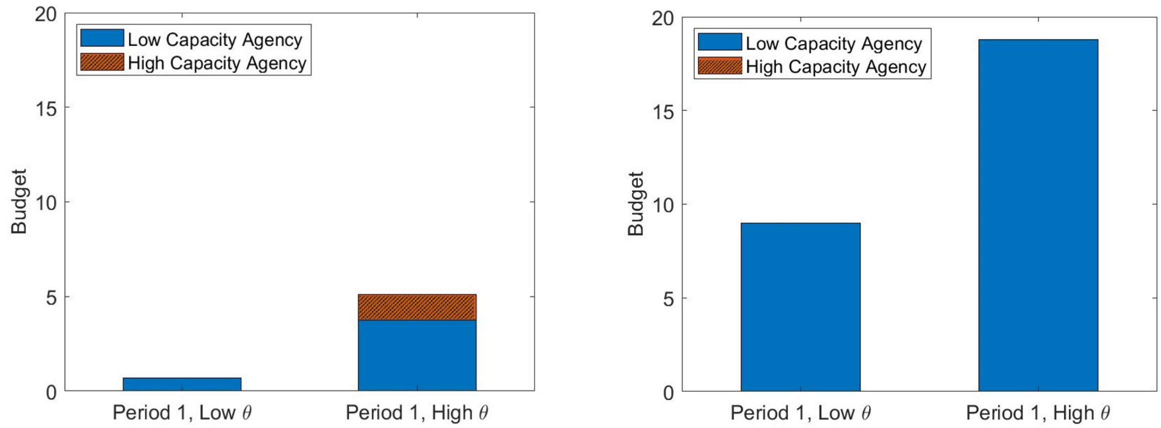
$$g_1^{h*}(B_1^{h*},\overline{\theta}) = \overline{\theta} - c'(g_1^{l*}(B_1^{l*},\overline{\theta})) - g_1^{l*}(B_1^{l*},\overline{\theta}). \tag{6}$$

The politician's preferred allocation is described in the following proposition.

Proposition 1 *When the voter does not observe the agencies' budgets before the election:*

- *If the public good is of low value ($\theta = \underline{\theta}$), the politician funds only the low capacity agency and chooses his preferred budget $B^{l*} = B^{l,p}$. This budget is higher than the budget that maximizes voter's utility, B_1^l.*
- *If the public good is of high value ($\theta = \overline{\theta}$), the politician over-funds the low capacity agency ($B_1^{l*} > B_1^{l,p}$) and under-funds the high capacity agency relative to both the one-period benchmark and to the budget that maximizes voter's utility:t $B_1^{l*} > B_1^{l,p} > B_1^l$ and $B_1^{h*} < B_1^{h,p} < B_1^h$).*

This benchmark result highlights the two distortions brought about by the politician's bias. First, when the economic need is low ($\theta = \underline{\theta}$), there is over-provision of the public good, but no distortion to bureaucratic implementation. The voter and the politician both prefer implementation through the low capacity agency, given the low scale of public good provision. Second, when the economic need is high ($\theta = \overline{\theta}$), there is also distortion in the allocation of funds to agencies in addition to over-provision. Figure 3 summarizes these observations graphically.



(a) Voter's preferred allocation

(b) Politician's preferred allocation

Figure 3: Illustrates the budget allocation preferred by the voter (Panel a) and the politician (Panel b) when the voter observes the period 1 budget allocation after the re-election decision.

4 Adding Electoral Accountability

I return now to the original model, where the voter can condition re-election on the politician's first budget allocations. The voter knows that the politician's bias is towards allocating a larger budget to the low capacity agency. A politician who assigns large budgets to agencies might do so because there is indeed a high economic need, or because the politician is biased towards increasing the budget for the low capacity agency, in order to respond to lobbying for public funds. A voter who cannot directly observe the economic state θ may not differentiate between these two scenarios. In fact, the following lemma derives the conditions under which a politician would like to act as if $\theta_1 = \overline{\theta}$ when in fact $\theta_1 = \underline{\theta}$.

Lemma 1 *There exists a minimum gap in potential economic need* $(\overline{\theta} - \underline{\theta})$ *and a minimum private benefit* $\underline{\gamma}$ *such the politician would choose budgets* $B_1^l(\overline{\theta})$ *and* $B_1^h(\overline{\theta})$ *regardless of the actual economic need* θ*.*

If the private benefit is small, $\gamma < \underline{\gamma}$, then the politician prefers to act according to the real economic need. Knowing this, the voter can condition re-election on seeing her preferred policy. As long as leaving office is sufficiently costly for the politician, he will comply. Thus, accountability is ensured.

In the remaining analysis, the politician's private benefit (γ) and the gap in economic need ($\overline{\theta} - \underline{\theta}$) are assumed to be sufficiently large, so that the politician would like to overstate the true economic need. The voter must then use her available information in order to constrain the politician's funding choices. Organizational capacity plays a crucial role in the voter's strategy, because it creates a link between current policy and future payoffs for the politician. By funding the high capacity agency in period 1, the politician ties his hands in period 2, as he must provide that minimal budget for the agency in the future. The voter's equilibrium strategy is summarized in the following proposition.

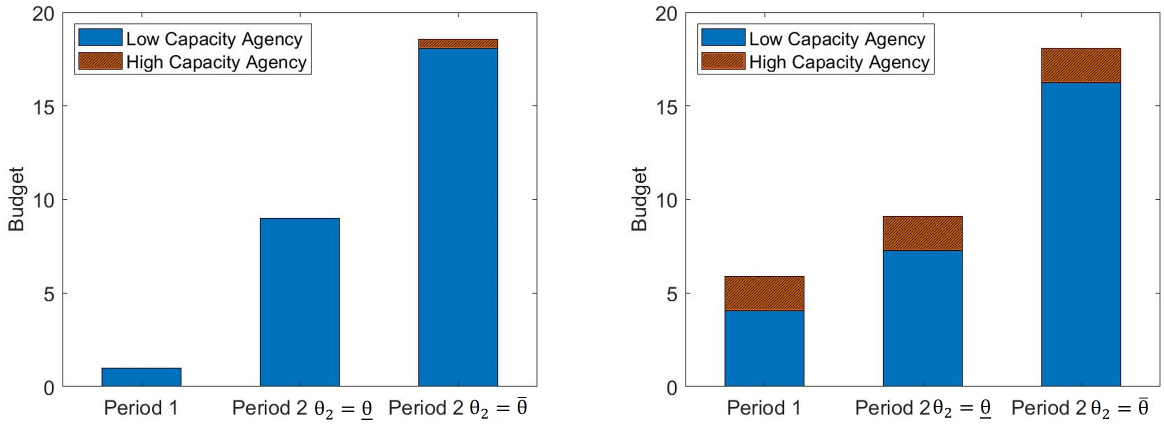
Proposition 2 *The voter's equilibrium re-election strategy takes the following form:*

1. *The voter re-elects the politician with probability $q = 1$ if he funds the low capacity agency at most $\underline{B}_1^l$ and does not fund the high capacity agency. The budget threshold satisfies $\underline{B}_1^l > B_1^l(\underline{\theta})$.*

2. *The voter re-elects the politician with probability $q \in (0, 1)$ if he funds the low capacity agency at most $\overline{B}_1^l$ and the high capacity agency at least $\overline{B}_1^h$. The budget thresholds satisfy $\overline{B}_1^l < B_1^l(\overline{\theta})$ and $\overline{B}_1^h > B_1^h(\overline{\theta})$.*

3. *The voter does not re-elect the politician otherwise ($q = 0$).*

The equilibrium allocations are illustrated in Figure 4. They show both the benefit to the voter of electoral accountability and the limitations of electoral control. The voter knows that the politician has the incentive to over-fund the low capacity agency under the guise of high economic need. To counter this bias, the voter "punishes" the politician electorally. The voter reduces her re-election probability in response to too much public spending. Higher spending is accepted only if the politician assigns a sufficiently large share of the funds to



(a) Budget allocation when $\theta_1 = \underline{\theta}$

(b) Budget allocation when $\theta_1 = \overline{\theta}$

Figure 4: Illustrates the equilibrium agency budgets in periods 1 and 2 when $\theta_1 = \underline{\theta}$ (Panel a) and in periods 1 and 2 when $\theta_1 = \overline{\theta}$ (Panel b).

the high capacity agency. The high capacity agency gets to keep its budget in the following period. This constrains the politician's choices in the next period, thereby reducing his private benefit from public good provision in the next period. In turn, this reduces the value of over-funding the agencies in period 1.

The limitation of the electoral instrument is that the voter cannot remove the politician's informational advantage, his knowledge of θ, which yields information rents, in the form of more funding for the low capacity agency. The voter can only partially sanction this over-spending through a lower re-election probability. If the voter were to condition re-election on seeing her preferred policy implemented at $\underline{\theta}$, the politician would act as if the state were $\overline{\theta}$. Thus, the voter must cede some inefficiency in public good provision.[13]

Coarser Electoral Control. Even when the voter has more coarse instruments for electoral accountability, the above insights carry over. To this end, consider the case when

[13] Ting (2001) highlights a related insight in a model in which a legislature decides funding for a work-averse agency: the legislature faces a trade-off between "good" but wasteful policies (giving a rent to the agency) and "bad" but efficient policies.

the voter's re-election strategy must specify either sure re-election ($q = 1$) or sure removal ($q = 0$). Delegation can still facilitate better accountability, even under these restrictions, as described in the following corollary.

Corollary 1 *If the voter's strategy is restricted to either sure re-election or sure removal, $q \in \{0, 1\}$, then the voter re-elects the politician with probability 1 if and only if*

1. *The politician delegates at most $\underline{B}_1^l$ to the low capacity agency and does not delegate to the high capacity agency.*

2. *The politician delegates at most $\overline{\overline{B}}_1^l \leq \overline{B}_1^l$ to the low capacity agency and at least $\overline{\overline{B}}_1^h \geq \overline{B}_1^l$ to the high capacity agency.*

The voter can still use funding for the high capacity agency as punishment for policies that correspond to high economic need. However, the voter no longer trades off more funding to the low capacity agency for a lower re-election probability. Instead, the voter reduces the acceptable funding for the low capacity agency, as additional punishment to discourage the politician from acting as if the economic need is high when it is not.

The above discussion highlights the two sides of the relationship between bureaucratic capacity and electoral accountability. The positive side is the differences in organization capacity across agencies allow the voter to achieve better accountability. The negative side is that this is a costly means for the voter to achieve accountability. This agency's funding cannot be easily rolled back, and this imposes costs that are also borne by the voter, even though the politician's cost is higher, when too much public good is provided in the future. Section 5 shows that having this bureaucratic structure is nevertheless optimal for the voter, as the option that maximizes voter welfare as long as γ is not too large.

Determinants of Agency Funding. The model also delivers conditions under which the value of organizational capacity increases.

Proposition 3 *Higher probability of economic need (lower p) leads to less funding for the high capacity agency in period 1. Higher private benefit γ leads to higher funding for the low capacity agency in period 1 when the the public good is of low value ($\underline{\theta}$) and has not effect on agency funding when the public good is of high value ($\overline{\theta}$).*

The high capacity agency ties the hands of the politician in period 2 only if the economic need that period is low. If the probability of $\underline{\theta}$ is low, then the voter demands even higher funding of this agency. This keeps the expected cost of over-provision sufficiently high to discipline the period 1 politician.

An increase in the marginal private benefit γ increases the information rent awarded to the politician when the need is $\underline{\theta}$. It does not increase the politician's funding of the low capacity agency when the need is $\bar{\theta}$, because the voter responds to the increase in the private benefit by also increasing the constraint on the politician. This ensures that the politician is discouraged from enacting policies corresponding to high economic need.

An immediate implication of the above result is that persistent crises, where high economic need likely to persist into the future (due to high $1 - p$), lead to more funding of the high capacity agency than crises that are expected to be short-lasted (when p is high). Moreover, persistent crises also make electoral accountability more difficult, as they increase the cost to the voter of providing incentives to the politician. This insight is developed further in Section 5.

5 Dynamic Bureaucratic Capacity

So far, the model took differences in agency capacity as given, leaning on the extensive work of public administration scholars that documented capacity differences (Moe, 1989; Carpenter, 2001). The above results show how these differences feed back into and shape policymaking and political accountability. Yet, differences in organizational capacity themselves may change over time. In the following analysis, I ask whether the agency structure assumed above is in fact the best one for the voter. If one were to design a high capacity agency that serves the voter's interests, would the high capacity agency maintain control over policy in future periods?[14] To answer this question, the model is extended beyond the two periods presented above, to an infinite horizon, with discrete time periods $t = 1, 2, \ldots$. This way, there are multiple elections. The voter can dynamically choose her re-election policy and how much control the high capacity agency should maintain over its assigned policy: it is no longer an exogenous requirement that $B^h(t+1) \geq B^h(t)$.

The game from period 1 repeats each period t. The voter commits to a re-election probability $q_t(\theta)$ at the beginning of the period. The incumbent politician observes the state of the economy θ_t and makes a funding decision (B_t^l, B_t^h). The low capacity agency produces the public good at cost $c(g_t^l)$ and the high capacity agency produces it at cost $\alpha \cdot g_t^h$. The public good g_t^l allows the politician to derive rents $\gamma_t \cdot g_t^l$ in period t. If removed, the politician receives a payoff $\underline{U}$ and is replaced with an identical politician. Both the politician and the voter are forward-looking and discount the future at rate β.

The voter's expected per period utility is given by

$$v_t = \mathbb{E}_{\theta_t}\left[-\frac{1}{2} \cdot \left(g_t^h + g_t^l - \theta_t\right)^2 - c\left(g_t^l\right) - \alpha \cdot g_t^h\right] + \epsilon_t, \tag{7}$$

where $\epsilon_t \sim \mathcal{U}\left[-E, E\right]$ is an individual shock experienced by the voter, $E \in \mathbb{R}$, and $E > v_t(\underline{\theta})$. The shock is experienced after the public good is provided. Formally, adding this shock ensures the voter cannot perfectly learn θ_t in period $t+1$ by simply observing her utility. It does not affect the qualitative implications of the model. Given this utility formulation, the voter's expected utility starting at period τ by $V_\tau = \sum_{t=\tau}^{\infty} \beta^{t-\tau} \cdot v_t$.

[14]Clearly, the voter prefers that a high capacity agency does not provide political rents, as these rents are a net loss to voter welfare.

The politician's per period utility is given by

$$u_t = -\frac{1}{2} \cdot \left(g_t^h + g_t^l - \theta_t\right)^2 + \gamma \cdot g_t^l - c\left(g_t^l\right) - \alpha \cdot g_t^h, \tag{8}$$

and his expected utility starting at period τ is given by $U_\tau = \sum_{t=\tau}^{\infty} \beta^{t-\tau} \cdot u_t$.

Formal Equilibrium Definition. I focus on the sustainable equilibria of the game. Let the public history of budgets observed by the voter up to and including period t be $h_t^0 \equiv \{B_1^l, B_1^h, ..., B_t^l, B_t^h\}$. Let $h_t^1 \equiv h_t^0 \cup \{\theta_1, B_1^l, B_1^h, ..., \theta_t, B_t^l, B_t^h\}$ be the history of outcomes observed by the politician up to period t. The voter may condition her re-election strategy on history h_t^0, while the politician can condition his strategy on history h_t^1. Let $\Upsilon|_{h_t^0}$ be the continuation strategy of the voter, and let $\digamma|_{h_t^1}$ be the continuation strategy for the incumbent politician. In the sustainable equilibrium, the strategy for the voter Υ solves the voter's problem if for every h_t^0, $\Upsilon|_{h_t^0}$ maximizes the expected voter utility given $\digamma$. The strategy $\digamma$ solves the politician's problem if for every h_t^1, the continuation strategy $\digamma|_{h_t^1}$ maximizes the politician's expected utility given Υ. A sustainable equilibrium then consists of the set of strategies $\{\Upsilon, \digamma\}$ where Υ solves the voter's problem given $\digamma$, and $\digamma$ solves the politician's problem given Υ. I select the best sustainable equilibrium for the voter, that is, the equilibrium that results in the highest expected voter utility. This equilibrium is sustained by a punishment equilibrium in which the voter always removes the politician and any incumbent politician pursues his preferred policy.

Dynamic Analysis The period-by-period strategy can be re-stated recursively as that of choosing the best sequence of re-election decisions in order to maximize the voter's expected utility, ensuring that the politician receives a payoff that delivers his equilibrium play. Denote by V^0 the maximum utility the voter expects to derive when a new politician is elected to office. At any point in the politician's tenure, the voter's problem reduces to choosing policy

$\alpha = \{B^h(\theta) \geq 0, B^l(\theta) \geq 0, EU'(\theta)\}_{\theta \in \{\underline{\theta}, \overline{\theta}\}}$ to solve the following maximization problem:

$$V(EU) = \max_{\alpha} \mathbb{E}_\theta \left[v(B^h(\theta), B^l(\theta)|\theta) + \beta \cdot q(\theta) \cdot V'(EU'(\theta)) + \beta \cdot (1 - q(\theta)) \cdot V^0 \right] \tag{9}$$

subject to these five constraints:

$$EU = \mathbb{E}_\theta \left[u(B^l(\theta), B^h(\theta)|\theta) + q(\theta) \cdot \beta \cdot EU'(\theta) + (1 - q(\theta)) \cdot \beta \cdot \underline{U} \right], \tag{10}$$

$$u(B^l(\theta), B^h(\theta)|\theta) + q(\theta) \cdot \beta \cdot EU'(\theta) + (1 - q(\theta)) \cdot \beta \cdot \underline{U} \geq$$
$$u(B^l(\hat{\theta}), B^h(\hat{\theta})|\theta) + q(\hat{\theta}) \cdot \beta \cdot EU'(\hat{\theta}) + (1 - q(\hat{\theta})) \cdot \beta \cdot \underline{U}, \ \forall \hat{\theta} \neq \theta, \tag{11}$$

$$u(B^l(\theta), B^h(\theta)) + q(\theta) \cdot \beta \cdot EU'(\theta) \geq u(B^{l,p}(\theta), B^{h,p}(\theta)) + q(\theta) \cdot \beta \cdot \underline{U}, \tag{12}$$

$$EU'(\theta) \geq \underline{EU}, \tag{13}$$

$$EU'(\theta) \leq \overline{EU}. \tag{14}$$

Constraint (10) represents the payoff EU given to the politician in expectation on the equilibrium path. Constraint (11) is the incentive compatibility constraint for the incumbent politician. This ensures that the politician will prefer to fund agencies according to the real θ. Constraint (12) is the participation constraint for the politician. It ensures that the politician prefers the voter's proposed budget allocation to choosing a different allocation and being removed from office. Constraints (13) and (14) are the lower bound and upper bound, respectively, on the continuation payoff the voter can promise to the politician. Bound $\underline{EU}$ corresponds to the minimum continuation utility that the politician can receive if kept one more period, while $\overline{EU}$ is the maximum utility that the politician can derive when he is free to choose his preferred policy in all periods.

The voter's utility $V(EU)$ is concave and differentiable (as shown formally in the Appendix), which allows us to derive the following key property of the equilibrium.

Proposition 4 *The voter's equilibrium reelection strategy is history dependent, so that more funding for the low capacity agency in one period (higher B_t^l) leads to higher minimum budgets B_τ^h for the high capacity agency in future periods $\tau > t$. Moreover, the politician expects lower future payoff EU' (more constraints on agency funding) when re-election is guaranteed ($q_t = 1$) than when $q_t < 1$.*

Policy persistence for the high capacity agency emerges as the solution in the best equilibrium for the voter. The main driver of this result is the need to provide the politician with the incentive to set policy according to the true economic need θ_t. The voter accepts higher agency budgets when the economic need is high ($\theta = \overline{\theta}$). Yet, in order ensure that the politician does not increase the budgets when $\theta = \underline{\theta}$, the continuation value promised to the politician, $EU'(\overline{\theta})$, must be lower than $EU'(\underline{\theta})$.[15] The main idea behind this result is that the voter wants to induce the politician to implement the policy corresponding to the current economic need. To do this, the voter punishes episodes of high funding to agencies, in order to discourage overspending. Conversely, she rewards low spending by allowing the politician more discretion to fund the low capacity agency in future periods, as well as giving him a higher re-election probability.

In contrast to the two-period model, removing the politician now has a direct cost for the voter, as the voter's payoff resets to V^0 every time a new politician is brought in. This makes the use of q as a punishment tool less desirable dynamically. When the voter finds it too costly to reduce q, she instead punishes the politician by lowering his future payoff through higher funding requirements for the high capacity agency. This dynamic corresponds to a stronger entrenchment of the high capacity agency, as it receives more control over policy.

Consider, for instance, the case of a period of repeated crises, where each period the

[15] Formally the argument relies on observing that, for an interior solution, the first-orders conditions emerging from problem (9) imply $\mathbb{E}\left[V_U(EU'(\theta))\right] = V_U(EU)$, where the subscript U denotes the first derivative. The value $V(EU)$ is then a martingale. The promised continuation value $EU'(\theta)$ is higher than the current promised utility EU following $\underline{\theta}$ shock and it is lower than EU following $\overline{\theta}$.

realized value is $\overline{\theta}$. Each period, the politician gives high funding to agencies. The voter observes the high spending. In order to ensure that the politician is acting our of economic need and not due to rent-seeking, the voter wants to make allocating large budgets painful for the politician. To do this, she wants to reduce her re-election probability q and she re-elects only if B^h is high. Yet, it is better for the voter to smooth the cost of punishing the politician over time: instead of just increasing B^h in the current period by a large amount, she can increase B^h by a small amount in each subsequent period. Repeated periods of high economic need then imply a gradual increase in B^h over the entire time horizon. This is the way in which persistence emerges endogenously, as discussed in the following corollary.

Corollary 2 *Policy persistence in the high capacity agency emerges as the solution that maximizes voter welfare. Yet, the persistence is limited, as the high capacity agency's minimum budget is decreased after observations of low budgets (if the politician behaves as if $\theta = \underline{\theta}$).*

The voter optimally relaxes the threshold of spending through the high capacity agency when she wants to reward the politician. Nevertheless, this result shows formally that a key characteristic of organizational capacity, namely the ability of an agency to maintain control over its assigned policy over time, serves the interest of voters. It facilitates electoral accountability, and it is a characteristic that emerges endogenously in the equilibrium that maximizes voter welfare.

6 Discussion

The examples of the FDA and TARP mentioned in the introduction illustrate how the main elements of the model map to empirical policymaking settings. These examples show how the structure of bureaucratic implementation feeds into policy choice and into voters' perception of politicians. In the following paragraphs, I expand on that discussion to show how the dynamic policymaking implications of the model are reflected in empirical cases.

The two examples from the introduction referred to policies forged in time of crisis. In the case of the FDA, the crisis was limited to one episode. The fallout from the side effects of Thalidomide did not cascade into a string of multiple such crises. In the case of the 2008 financial crises, the crisis consisted of several subsequent episodes of bank failures, private company and individual defaults, followed by a government debt crisis in the European Union. All these subsequent crises came with a high need for government spending. The results of Proposition 2 prescribe an increase in the independent agency's policy control following a crisis, as it was the case for the FDA. The dynamics implied by Proposition 4 add to this insight by showing that, in the case of several subsequent periods of crisis, funding to the independent agency gradually increases. This leads to a gradual entrenchment of the independent agency in the policymaking process. This dynamic indeed matches the experience of the financial crisis. As described in the introduction, in the United States, the shift of policy implementation towards the Federal Reserve increased gradually, as voter support for executive controlled programs like TARP weakened. A similar dynamic was observed also outside the United States. Germany, for example, first responded to the crisis by directly rescuing its struggling banks using executive authority.[16] Yet, as the crisis persisted, the government spending programs were diversified towards avenues under less executive control. The parliament adopted broader support programs in November 2008 and February 2009, which included, for instance, tax breaks and general rules for companies accessing funding and loan guarantees.[17]

The model's implications do not reduce to policymaking in crisis times. The levers of

[16] Starting with Hypo Real Estate and BayernLB in October 2008, followed by Commerzbank, Germany's second largest bank in January 2009 (source: the New York Fed's International Responses to the Crisis Timeline)

[17] Source: The Library of Congress Research Reports: Financial Stimulus Plans: Recent Developments in Selected Countries (http://www.loc.gov/law/help/financial_stimulus_plan.php).

electoral accountability through the bureaucratic structure apply in regular policymaking too. To illustrate this point, I consider an example from the renewable energy sector. In the United States, at the federal level, the Energy Policy Act of 2005 and subsequent legislation specified government funding and purchasing programs for renewable energy. The programs came in two main forms. First, there was the policy implementation through an agency under the control of the president, namely the Department of Energy (DOE). The DOE was tasked with providing direct funding through grants and low cost debt for companies employing innovative technologies. Second, energy policy implementation was also assigned to an agency whose rules and procedures allowed for less discretion by the president, namely the Internal Revenue Service (IRS). Firms running renewable energy projects received investment tax credits and accelerated depreciation accounting, used to lower tax liabilities. The public good provided by the government through these programs was substantial, accounting for 48% of solar power production costs and 35% of wind power production costs.[18] The model predicts that electorally accountable politicians would provide more public funding in periods when it is needed more. Indeed, both categories of programs increased following the 2008 financial crisis, when the sources of private funding for renewable energy projects dried up. Yet, in line with the logic of policy persistence in the high capacity agency as the economic need decreases post-2008, the direct grants and loans were reduced, while the tax credits remained.[19] Moreover, the link between the policy implementation decision and electoral incentives features preeminently in the public domain. For example, the Solyndra scandal of 2012 aimed to relate policy implementation through direct grants to political corruption, leading to a long campaign of political attacks against the president.[20] Following this scandal, the use of tax credits increased and the grant program was diminished.

[18] "Examination of Federal Financial Assistance in the Renewable Energy Market", report by Scully Capital and Kutak Rock LLP, October 2018

[19] ibid., Exhibit 4-3

[20] A summary is provided at https://www.washingtonpost.com/politics/specialreports/solyndra-scandal/

The above examples show how the model may be used to shed light on the relationship between policy implementation and electoral accountability. Changes in funding to agencies and in the structure of bureaucratic implementation are driven in part by the concerns of politicians facing voter evaluation. Electoral motivations do not only drive the decision whether to delegate policy implementation, but as this model shows, they also crucially affect which agency to fund, and how to sequence the allocation of funds.

7 Concluding Remarks

A fundamental feature of policymaking is the bureaucracy's policy implementation capability. In order to produce results, policies must not only be formulated, but they must also be implemented by a capable bureaucracy. The variation in organization capacity among bureaucratic agencies can lead to starkly different implementations of the same policy goals. This has been starkly illustrated by Covid vaccine roll-out of 2020/2021. This paper provides a model to unpack how differences in organization capacity inside the bureaucracy affect policy implementation, and in turn how this influences policy choices by politicians and the voters' ability to hold elected politicians accountable. The formal model starts by taking the organizational structure of the bureaucracy as given, focusing on the politician's choice of which agency to assign policy implementation to, and links this choice to electoral politics. The main insight coming out of this framework is that the variation in bureaucratic capacity can be a used to enhance electoral accountability. Funding to high capacity agencies can be used by voters as a requirement for re-electing politicians when there is concern about public projects being used to further private interests. This tool for accountability becomes even more important in policy areas in which private lobbying by firms is more intense, or in which the utility of public spending is less clear, as in the example of subsidies for innovation in renewable energy technology.

The formal model is next used to show how key characteristics of organizational capacity serve the interests of the voter. Electoral control of politicians optimally requires that high capacity agencies maintain policy control over time. Moreover, dynamically, there is no convergence towards one agency gaining monopoly over policymaking. Instead, electoral incentives ensure the persistence of both high capacity and low capacity agencies. Complementing Moe (1989), this paper highlights that the design of the bureaucracy may in fact serve the interests of voters: bureaucratic organization may be effectively used to enhance electoral accountability. This is possible because there is persistence in the structure of the bureaucracy, in that agencies which have been allowed to build capacity tend to persist in their policy control beyond the length of an electoral cycle.

While the focus of this study has been on organizational capacity, in the Online Appendix I show that the model's results are robust to incorporating agency expertise. If the politician and the low capacity agency are also low expertise, then there might be inefficient funding of agencies. Nevertheless, the choice of which agency to assign policy implementation to is still informative for voters and serves to enhance electoral accountability.

A natural extension of this model is to ask whether the results may be extended to understand the dynamics of structuring policy implementation in international or supranational organizations, like the institutions of the European Union, as opposed to domestic agencies. The model captures several aspects of this problem. Policy delegation to supranational agencies is usually achieved through treaties or agreements that create the persistence associated with high capacity agencies. Moreover, the EU level bureaucracy is regarded as more technocratic and hence less responsive to politician biases compared to local domestic agencies. Finally, supranational organizations are set up in order to address large scale projects compared to domestic agencies. Nevertheless, analyzing the link between electoral accountability and supranational delegation decisions would require extending the model to address two additional concerns. First, the funding of supranational organizations is derived from multiple countries and spending may reflect redistribution between the participating countries. Second, the objective of the supranational organization may not always align with that of voters in one particular country, as the organization must balance preferences of voters from multiple countries.[21] A fruitful direction for future research is to incorporate these two features into the model in order to understand how a multi-layered bureaucratic structure that involves supranational agencies may facilitate or impede domestic electoral accountability.

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[21] The implications of these differences for voter welfare are explored in Foarta (2018), in a model in which public spending is achieved through both domestic spending and inter-governmental transfers, and where domestic politicians are biased in their spending preferences.

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Online Appendix

A Proofs from Section 4

A.1 Proof of Proposition 1

Politician's preferred policies. Given B_1^h, the politician chooses the period 2 agency budgets B_2^{l*} and B_2^{h*} for the low capacity and the high capacity agency, respective, in order to maximize

$$\max_{B_2^h, B_2^l} -\frac{1}{2}\left(g_2^l + g_1^h + \Delta g^h - \theta_2\right)^2 - c\left(g_2^l\right) - \alpha \cdot \left(g_1^h + \Delta g^h\right) + \gamma \cdot g_2^l \tag{15}$$

subject to

$$c\left(g_2^l\right) = B_2^l, \tag{16}$$

$$\alpha \cdot \left(g_1^h + \Delta g^h\right) = B_2^h, \tag{17}$$

$$g_1^h = \frac{B_1^h}{\alpha}, \tag{18}$$

$$B_2^h \geq B_1^h. \tag{19}$$

Denote by λ the Lagrange multiplier on (19). Given the concave objective, first-order conditions lead to

$$\left(B_2^l\right) : -\left(c^{-1}(B_2^l) + \frac{B_2^h}{\alpha} - \theta_2 - \gamma\right) \cdot \frac{1}{c'\left(c^{-1}(B_2^l)\right)} - 1 \leq 0, \tag{20}$$

$$\left(B_2^h\right) : -\left(c^{-1}(B_2^l) + \frac{B_2^h}{\alpha} - \theta_2\right) \cdot \frac{1}{\alpha} - 1 + \lambda \leq 0 \tag{21}$$

If $\theta_2 = \underline{\theta}$, then by Assumption 1, $c'\left(g_2^l\right) < \alpha < \alpha + \gamma$. Thus, $B_2^{h*} = B_1^h$ and B_2^{l*} is given by

$$c'(c^{-1}(B_2^{l*})) + c^{-1}(B_2^{l*}) = \underline{\theta} + \gamma - \frac{B_1^h}{\alpha}. \tag{22}$$

If $\theta_2 = \overline{\theta}$:

1. if $B_1^h \leq \alpha \cdot \left[\bar{\theta} - \alpha - c'^{-1}(\alpha+\gamma)\right]$, then $c\left(c^{-1}(B_2^l)\right) = \alpha+\gamma$, and B_2^{h*} and B_2^{l*} are given by:

$$B_2^{l*} = c\left(c'^{-1}(\alpha+\gamma)\right), \tag{23}$$

$$B_2^{h*} = \alpha \cdot \left(\bar{\theta} - \alpha - c'^{-1}(\alpha+\gamma)\right). \tag{24}$$

2. if $B_1^h > \alpha \cdot \left[\bar{\theta} - \alpha - c'^{-1}(\alpha+\gamma)\right]$, then $c\left(c^{-1}(B_2^l)\right) < \alpha+\gamma$, and the politician's choices are $B_2^{h*} = B_1^h$ and B_2^{l*} given by the solution to

$$c'(c^{-1}(B_2^{l*})) + c^{-1}(B_2^{l*}) = \bar{\theta} + \gamma - \frac{B_1^h}{\alpha}. \tag{25}$$

In period 1, the politician chooses budgets B_1^{h*} and B_1^{l*} to maximize

$$\begin{aligned}
&\max_{B_1^h, B_1^l} -\frac{1}{2}\left(g_1^l + g_1^h - \theta_1\right)^2 - c(g_1^l) - \alpha \cdot g_1^h + \gamma \cdot g_1^l \\
&\quad + p \cdot \left[-\frac{1}{2}\left(g_2^l\left(B_1^h, \underline{\theta}\right) + g_1^h - \underline{\theta}\right)^2 - c(g_2^l(B_1^h, \underline{\theta})) - \alpha \cdot g_1^h + \gamma \cdot g_2^l(B_1^h, \underline{\theta})\right] \\
&+ (1-p) \cdot \mathbf{1}_{B_1^h \leq \alpha\left[\bar{\theta} - \alpha - \gamma - c'^{-1}(\alpha+\gamma)\right]} \left[-\frac{1}{2}\left(g_2^l\left(\bar{\theta}\right) + \frac{B_2^h}{\alpha} - \bar{\theta}\right)^2 - c\left(g_2^l\left(\bar{\theta}\right)\right) - B_2^h + \gamma \cdot g_2^l\left(\bar{\theta}\right)\right] \\
&\quad + (1-p) \cdot \mathbf{1}_{B_1^h > \alpha\left[\bar{\theta} - \alpha - \gamma - c'^{-1}(\alpha+\gamma)\right]} \left[-\frac{1}{2}\left(g_2^l\left(B_1^h, \bar{\theta}\right) + \frac{B_1^h}{\alpha} - \bar{\theta}\right)^2 - c\left(g_2^l\left(B_1^h, \bar{\theta}\right)\right) \right. \\
&\qquad \left. - B_1^h + \gamma \cdot g_2^l\left(B_1^h, \bar{\theta}\right)\right],
\end{aligned} \tag{26}$$

subject to $c\left(g_1^l\right) = B_1^l$ and $\alpha \cdot g_1^h = B_1^h$.

We proceed by conjecturing a bound for B_1^{h*} and then verifying that indeed the resulting solution B_1^{h*} is in our conjectured range. If $\theta_1 = \underline{\theta}$, we conjecture that $B_1^{h*} \leq \alpha\left[\overline{\theta} - \alpha - c'^{-1}\left(\alpha+\gamma\right)\right]$. The first-order conditions to the maximization problem become:

$$\left(B_1^l\right) : -\left(g_1^l + g_1^h - \theta_1 - \gamma\right) \cdot \frac{1}{c'\left(g_1^l\right)} - 1 \leq 0, \tag{27}$$

$$\left(B_1^h\right) : -\left(g_1^l + g_1^h - \theta_1\right) \cdot \frac{1}{\alpha} - 1 + p \cdot \left(\frac{c'\left(g_2^l\left(B_1^h, \underline{\theta}\right)\right) - \gamma}{\alpha} - 1\right) \leq 0, \tag{28}$$

Given Assumption 1, we have $c'\left(g_1^l\right) < \alpha < \alpha + \gamma$. Thus, given (27) ans (28), $B_1^{h*} = 0$ and B_1^{l*} is derived from:

$$c'\left(c^{-1}(B_1^{l*})\right) + c^{-1}(B_1^{l*}) = \underline{\theta} + \gamma. \tag{29}$$

If $\theta_1 = \overline{\theta}$, then we conjecture that $B_1^{h*} \leq \alpha\left[\overline{\theta} - \alpha - c'^{-1}\left(\alpha+\gamma\right)\right]$. Given Assumption 1, if $c'(g_1^l) < \alpha + \gamma$, then $B_1^{h*} = 0$. This means $c'(g_1^l) + g_1^l = \overline{\theta} + \gamma$ and the solution satisfies $g_1^l < \overline{\theta} - \alpha$. Otherwise, the first-order conditions to the politician's problem lead to B_1^{l*} and $B_1^{h*} > 0$ given by

$$c'\left(c^{-1}(B_1^{l*})\right) = \alpha + \gamma + p \cdot \left(\alpha + \gamma - c'\left(c^{-1}(B_2^{l*}(B_1^{h*}, \underline{\theta}))\right)\right), \tag{30}$$

$$B_1^{h*} = \alpha \cdot \left[\overline{\theta} + \gamma - c'\left(c^{-1}(B_1^{l*})\right) - c^{-1}(B_1^{l*})\right]. \tag{31}$$

Indeed, given Assumption 1 and (31), we have that $B_1^{h*} \leq \alpha \cdot \left[\overline{\theta} - \alpha - c'^{-1}\left(\alpha+\gamma\right)\right]$.

If we conjecture $B_1^{h*} > \alpha \cdot \left[\overline{\theta} - \alpha - c'^{-1}\left(\alpha+\gamma\right)\right]$, then we obtain contradictions for both possible values of θ_1.

Voter's preferred policies Consider the voter's preferred policy in period 1 when she accounts for the fact that the politician can freely choose policy in period 2. In period 2, the politician chooses B_2^{l*} and B_2^{h*}. In period 1, the voter's then solves

$$\max_{B_1^l, B_1^h} -\frac{1}{2}\left(g_1^l\left(\theta\right)+g_1^h\left(\theta\right)-\theta\right)^2-c\left(g_1^l\left(\theta\right)\right)-\alpha\cdot g_1^h\left(\theta\right)$$
$$+p\cdot\left[-\frac{1}{2}\left(g_2^{l*}\left(\underline{\theta}\right)+g_2^{h*}\left(\underline{\theta}\right)-\underline{\theta}\right)^2-c\left(g_2^{l*}\left(\underline{\theta}\right)\right)-\alpha\cdot g_2^{h*}\left(\underline{\theta}\right)\right]$$
$$+(1-p)\cdot\left[-\frac{1}{2}\left(g_2^{l*}\left(\overline{\theta}\right)+g_2^{h*}\left(\overline{\theta}\right)-\overline{\theta}\right)^2-c\left(g_2^{l*}\left(\overline{\theta}\right)\right)-\alpha\cdot g_2^{h*}\left(\overline{\theta}\right)\right]. \quad (32)$$

subject to

$$c(g_1^l)\leq B_1^l, \quad (33)$$
$$\alpha\cdot g_1^h\leq B_1^h, \quad (34)$$
$$c(g_2^{l*})=B_2^{l*}, \quad (35)$$
$$\alpha\cdot g_2^{h*}=B_2^{h*}(B_1^h), \quad (36)$$
$$B_2^{h*}(\theta_2)\geq B_1^h(\theta_1). \quad (37)$$

where B_2^{l*} and B_2^{h*} are derived in the politician's problem above. Let $\lambda(\theta_1,\theta_2)\in\{0,1\}$ indicate whether constraint (37) is binding. Then, we obtain the following first-order conditions to the voter's problem:

$$\left(B_1^l\right):-\left(c^{-1}(B_1^l)+\frac{B_1^h}{\alpha}-\theta_1\right)\cdot\frac{1}{c'\left(c^{-1}(B_1^l)\right)}-1\leq 0, \quad (38)$$
$$\left(B_1^h\right):-\left(c^{-1}(B_1^l)+\frac{B_1^h}{\alpha}-\theta_1\right)\cdot\frac{1}{\alpha}-1 \quad (39)$$
$$+\lambda(\theta_1,\underline{\theta})\cdot p\cdot\left[-\left(c^{-1}(B_2^{l*}(B_1^h))+\frac{B_2^{h*}}{\alpha}-\underline{\theta}\right)\cdot\frac{1}{\alpha}-1\right] \quad (40)$$
$$+\lambda(\theta_1,\overline{\theta})\cdot(1-p)\cdot\left[-\left(c^{-1}(B_2^{l*}(B_1^h))+\frac{B_2^{h*}}{\alpha}-\overline{\theta}\right)\cdot\frac{1}{\alpha}-1\right]\leq 0. \quad (41)$$

If $\theta_1 = \underline{\theta}$, then given Assumption 1, the solution to the voter's problem is $B^h(\underline{\theta}) = 0$ and $B^l(\underline{\theta})$ derived from

$$c'\left(c^{-1}(B_1^l)\right) + c^{-1}(B_1^l) = \underline{\theta}. \tag{42}$$

If $\theta_1 = \overline{\theta}$, then $\lambda(\theta_1, \underline{\theta}) = 1$. If $\lambda(\theta_1, \overline{\theta}) = 0$, then, B_1^l and B_1^h are given by the solution to the following system of equations:

$$B_1^h = \alpha \cdot \left[\overline{\theta} - c^{-1}(B_1^l) - c'\left(c^{-1}(B_1^l)\right)\right], \tag{43}$$

$$c'\left(c^{-1}(B_1^l)\right) = \alpha + p \cdot \alpha - p \cdot c'\left(c^{-1}(B_2^{l*}(B_1^h, \underline{\theta}))\right) + p\gamma. \tag{44}$$

If $\lambda(\theta_1, \overline{\theta}) = 1$, then, B_1^l and B_1^h are given by the solution to the following system of equations:

$$B_1^h = \alpha \cdot \left[\overline{\theta} - c^{-1}(B_1^l) - c'\left(c^{-1}(B_1^l)\right)\right], \tag{45}$$

$$c'\left(c^{-1}(B_1^l)\right) = 2 \cdot \alpha - p \cdot c'\left(c^{-1}(B_2^{l*}(B_1^h, \underline{\theta}))\right) - (1-p) \cdot c'\left(c^{-1}(B_2^{l*}(B_1^h, \overline{\theta}))\right). \tag{46}$$

Notice that $B_1^h < B_2^{h*}(\overline{\theta}) = \alpha \cdot \left(\overline{\theta} - c'^{-1}(\alpha + \gamma) - \alpha\right)$ implies

$$c^{-1}(B_1^l) + p \cdot \left[\alpha - c'\left(c^{-1}(B_2^{l*}(B_1^h, \underline{\theta}))\right)\right] > c'^{-1}(\alpha + \gamma). \tag{47}$$

The left-hand side of the inequality is decreasing in γ, while the right-hand side is increasing in γ. Moreover, the inequality holds at $\gamma = 0$. Thus, let $\gamma^{\max}$ be defined implicitly by the value at which

$$p \cdot \gamma^{\max} + (1+p) \cdot c^{-1}(\alpha + \gamma^{\max}) = c^{-1}(B_1^l(\gamma^{\max})) + p \cdot c^{-1}(B_2^{l*}(\gamma^{\max})) + p \cdot (\overline{\theta} - \underline{\theta}). \tag{48}$$

or $\gamma^{\max} = \infty$ if (47) holds for every γ. Then, inequality (47) holds for $\gamma \leq \gamma^{\max}$. If $\gamma > \gamma^{\max}$, then $\lambda(\theta_1, \underline{\theta}) = \lambda(\theta_1, \overline{\theta}) = 1$.

Comparing preferred policies. For the above expressions, it then follows that $B_1^{l*} > B_1^l$, $B_1^{h*}(\underline{\theta}) = B_1^h(\underline{\theta}) = 0$, $B_1^{h*}\left(\overline{\theta}\right) < B_1^h\left(\overline{\theta}\right)$.

A.2 Proof of Lemma 1

If $\theta_1 = \underline{\theta}$, the politician's payoff from selecting the voter's preferred policy is:

$$\begin{aligned} -\frac{1}{2}\left(c^{-1}(B_1^l(\underline{\theta})) - \underline{\theta}\right)^2 - B_1^l(\underline{\theta}) + \gamma \cdot c^{-1}(B_1^l(\underline{\theta})) \\ + p \cdot \left[-\frac{1}{2}\left(c^{-1}(B_2^{l*}(\underline{\theta})) - \underline{\theta}\right)^2 - B_2^{l*}(\underline{\theta}) + \gamma \cdot c^{-1}(B_2^{l*}(\underline{\theta}))\right] \\ + (1-p) \cdot \left[-\frac{1}{2} \cdot \alpha^2 - B_2^{l*}\left(\overline{\theta}\right) - B_2^{h*}\left(\overline{\theta}\right) + \gamma \cdot c^{-1}(B_2^{h*}(\overline{\theta}))\right]. \end{aligned} \tag{49}$$

If the politician instead chooses the budgets proposed for $\theta = \overline{\theta}$, then his payoff is:

$$\begin{aligned} -\frac{1}{2}\left(c^{-1}(B_1^l(\overline{\theta})) + \frac{B_1^h(\overline{\theta})}{\alpha} - \underline{\theta}\right)^2 - B_1^l\left(\overline{\theta}\right) - B_1^h(\overline{\theta}) + \gamma \cdot c^{-1}(B_1^l(\overline{\theta})) \\ + p \cdot \left[-\frac{1}{2}\left(c^{-1}(B_2^{l*}(\underline{\theta})) + \frac{B_2^{h*}(B_1^h, \underline{\theta})}{\alpha} - \underline{\theta}\right)^2 - B_2^{l*}\left(B_1^h, \underline{\theta}\right) + \gamma \cdot c^{-1}(B_2^{l*}(B_1^h, \underline{\theta}))\right] \\ +(1-p)\left[-\frac{1}{2}\left(c^{-1}(B_2^{l*}(B_1^h, \overline{\theta})) + \frac{B_2^{h*}(B_1^h, \overline{\theta})}{\alpha} - \overline{\theta}\right)^2 - B_2^{l*}\left(B_1^h, \overline{\theta}\right) - B_2^{h*}\left(\overline{\theta}\right) + \gamma c^{-1}(B_2^{h*}(B_1^h, \overline{\theta}))\right]. \end{aligned} \tag{50}$$

If $\gamma < \gamma^{\max}$, then the politician's gain from choosing the budgets proposed for $\theta_1 = \overline{\theta}$ over those proposed for $\theta_1 = \underline{\theta}$ is

$$\begin{aligned} \Delta^P = \Delta_1^V + p \cdot \Delta_2^V(\theta_2 = \underline{\theta}) + \gamma \cdot (c^{-1}(B_1^l(\overline{\theta})) - c^{-1}(B_1^l(\underline{\theta}))) \\ - p \cdot \gamma \cdot \left(c^{-1}(B_2^{l*}(\underline{\theta})) - c^{-1}(B_2^{l*}(B_1^h(\overline{\theta}), \underline{\theta}))\right), \end{aligned} \tag{51}$$

where

$$\Delta_1^V = -\frac{1}{2}\left[\left(c^{-1}(B_1^l(\overline{\theta})) + \frac{B_1^h(\overline{\theta})}{\alpha} - \underline{\theta}\right)^2 - \left(c^{-1}(B_1^l\,(\underline{\theta})) - \underline{\theta}\right)^2\right]$$
$$- \left[B_1^l(\overline{\theta}) - B_1^l\,(\underline{\theta})\right] - B_1^h(\overline{\theta}), \tag{52}$$
$$\Delta_2^V(\underline{\theta}) = -\frac{1}{2}\left[\left(c^{-1}(B_2^{l*}(B_1^h(\overline{\theta}),\underline{\theta})) + \frac{B_1^h(\overline{\theta})}{\alpha} - \underline{\theta}\right)^2 - \left(c^{-1}(B_2^{l*}\,(\underline{\theta})) - \underline{\theta}\right)^2\right]$$
$$- \left[B_2^{l*}(B_1^h(\overline{\theta}),\underline{\theta}) - B_2^{l*}\,(\underline{\theta})\right] - B_1^h(\overline{\theta}). \tag{53}$$

Given equations (44) and (22), it follows that there exists $\gamma^{p*} > 0$ such that $B_1^h = 0$. Then, for $\gamma > \gamma^{p*}$, the budget $B^l(\overline{\theta})$ preferred by the voter in period 1 is $c^{-1}(B^{lpv}) + c'(c^{-1}(B^{lpv})) = \overline{\theta}$. Thus, Δ^P is given by

$$\Delta^P = \Delta_1^V + \gamma \cdot (c^{-1}(B_1^l(\overline{\theta})) - c^{-1}(B_1^l(\underline{\theta}))), \tag{54}$$

which reduces to

$$\Delta^P = (c^{-1}(B_1^{lpv}(\overline{\theta})) - c^{-1}(B_1^l(\underline{\theta}))) \cdot \left[-\frac{1}{2}\left(c^{-1}(B_1^{lpv}(\overline{\theta})) + c^{-1}(B_1^l(\underline{\theta})) - 2\underline{\theta}\right) + \gamma\right]$$
$$- \left[B_1^{lpv}(\overline{\theta}) - B_1^l\,(\underline{\theta})\right] \tag{55}$$

Then, there exists $\gamma^{p**} \geq \gamma^{p*}$ such that $\Delta^P(\gamma^{p**}) > 0$. Notice also that at $\gamma = 0$ we have $\Delta^P = \Delta_1^V + p\Delta_2^V < 0$.

Next,

$$\frac{\partial \Delta^P}{\partial \gamma} = \frac{\partial\left[\Delta_1^V + p \cdot \Delta_2^V(\underline{\theta}) - p \cdot \gamma \cdot \left(c^{-1}(B_2^{l*}(\underline{\theta})) - c^{-1}(B_2^{l*}(B_1^h(\overline{\theta}),\underline{\theta}))\right)\right]}{\partial \gamma}$$
$$+ \frac{\partial \gamma \cdot (c^{-1}(B_1^l(\overline{\theta})) - c^{-1}(B_1^l(\underline{\theta})))}{\partial \gamma}. \tag{56}$$

After applying the Envelope Theorem, the above reduces to

$$\frac{\partial \Delta^P}{\partial \gamma} = c^{-1}(B_1^l(\overline{\theta})) - c^{-1}(B_1^l(\underline{\theta})) + \left[(\overline{\theta} - \underline{\theta}) \cdot c''(c^{-1}(B_1^l(\overline{\theta}))) + \gamma\right] \cdot \frac{\partial c^{-1}(B_1^l(\overline{\theta}))}{\partial \gamma} \\ - p \cdot \left(c^{-1}(B_2^{l*}(\underline{\theta})) - c^{-1}(B_2^{l*}(B_1^h(\overline{\theta}), \underline{\theta}))\right), \quad (57)$$

Notice that

$$\frac{\partial c^{-1}(B_1^l(\overline{\theta}))}{\partial \gamma} = \frac{p}{C} > 0, \quad (58)$$

where

$$C = c''(c^{-1}(B_1^l(\overline{\theta}))) \left(1 + c''(c^{-1}(B_2^l(B_1^h(\overline{\theta}), \underline{\theta})))\right) + \\ p \cdot c''(c^{-1}(B_2^l(B_1^h(\overline{\theta}), \underline{\theta}))) \left(1 + c''(c^{-1}(B_1^l(\overline{\theta})))\right). \quad (59)$$

Also,

$$\frac{\partial \left[c^{-1}(B_1^l(\overline{\theta})) - c^{-1}(B_1^l(\underline{\theta})) - p \cdot \left(c^{-1}(B_2^{l*}(\underline{\theta})) - c^{-1}(B_2^{l*}(B_1^h(\overline{\theta}), \underline{\theta}))\right)\right]}{\partial \gamma} > 0. \quad (60)$$

Thus, a sufficient condition for $\frac{\partial \Delta^P}{\partial \gamma} > 0$ is that at $\gamma = 0$,

$$\left[c^{-1}(B_1^l(\overline{\theta})) - c^{-1}(B_1^l(\underline{\theta})) - p \cdot \left(c^{-1}(B_2^{l*}(\underline{\theta})) - c^{-1}(B_2^{l*}(B_1^h(\overline{\theta}), \underline{\theta}))\right)\right] \geq 0. \quad (61)$$

This reduces to

$$c^{-1}(B_1^l(\overline{\theta})) + p \cdot c^{-1}(B_2^{l*}(B_1^h(\overline{\theta}), \underline{\theta})) \geq (1 + p) \cdot c^{-1}(B_1^{l*}(\underline{\theta}) | \gamma = 0). \quad (62)$$

As the left-hand side of the above equation is increasing in θ, for any $\underline{\theta}$, there exists $\overline{\theta}^* > \underline{\theta}$

such that

$$c^{-1}(B_1^l(\overline{\theta}^*)) + p \cdot c^{-1}(B_2^{l*}(B_1^h(\overline{\theta}^*), \underline{\theta})) = (1+p) \cdot c^{-1}(B_1^{l*}(\underline{\theta})), \tag{63}$$

and condition (62) holds for all $\overline{\theta} \geq \overline{\theta}^*$. Thus, for $\overline{\theta} \geq \overline{\theta}^*$, we have $\frac{\partial \Delta^P}{\partial \gamma} > 0$. Moreover, $\Delta^P < 0$ when $\gamma = 0$ and $\Delta^P > 0$ when $\gamma \geq \gamma^{p**}$. By the Intermediate Value Theorem, there exists $\underline{\gamma} > 0$ such that $\Delta^P \geq 0$ for all $\gamma > \underline{\gamma}$.

A.3 Proof of Proposition 2

Consider the voter's problem of specifying budgets $B_1^{lv}(\theta), B_1^{hv}(\theta)$ and probability $q(\theta)$ under which the politician is re-elected. Given the mapping from $B_1^{lv}(\theta), B_1^{hv}(\theta)$ to $g_1^{lv}(\theta), g_1^{hv}(\theta)$, we can write down the problem as if the voter directly specifies $g_1^{lv}(\theta), g_1^{hv}(\theta)$. The voter's utility in period 1 is given by:

$$v(g_1^{lv}, g_1^{hv}|\theta_1) = -\frac{1}{2}\left(g_1^{lv}(\theta_1) + g_1^{hv}(\theta_1) - \theta_1\right)^2 - c\left(g_1^{lv}(\theta_1)\right) - \alpha \cdot g_1^{hv}(\theta_1). \tag{64}$$

The voter's utility in period 2, conditional on the realizations of θ is given by:

$$\begin{aligned} v(g_1^{hv}(\underline{\theta})|\theta_2) = &-\frac{1}{2}\left(g_2^{l*}(g_1^{hv}(\theta_1), \theta_2) + g_2^{h*}(g_1^{hv}(\theta_1), \theta_2) - \theta_2\right)^2 \\ &- c\left(g_2^{l*}(g_1^{hv}(\theta_1), \theta_2)\right) - \alpha \cdot g_2^{h*}(g_1^{hv}(\theta_1), \theta_2), \end{aligned}$$

and the politician's utility in period 2, conditional on the realizations of θ is given by:

$$\begin{aligned} u(g_1^{hv}(\theta_1)|\theta_2) = &-\frac{1}{2}\left(g_2^{l*}(g_1^{hv}(\theta_1), \theta_2) + g_2^{h*}(g_1^{hv}(\theta_1), \theta_2) - \theta_2\right)^2 \\ &- c\left(g_2^{l*}(g_1^{hv}(\theta_1), \theta_2)\right) - \alpha \cdot g_2^{h*}(g_1^{hv}(\theta_1), \theta_2) + \gamma \cdot g_2^{l*}(g_1^{hv}(\theta_1), \theta_2). \end{aligned} \tag{65}$$

The voter's maximization problem is:

$$\max_{\{q^H, q^L, g_1^{lv}(\underline{\theta}), g_1^{hv}(\underline{\theta}), g_1^{lv}(\overline{\theta}), g_1^{hv}(\overline{\theta})\}} p \cdot v(g_1^{lv}, g_1^{hv} | \theta_1 = \underline{\theta}) + (1-p) \cdot v(g_1^{lv}, g_1^{hv} | \theta_1 = \overline{\theta})$$
$$+ p^2 \cdot v(g_1^{hv}(\underline{\theta}) | \theta_2 = \underline{\theta}) + p \cdot (1-p) \cdot v(g_1^{hv}(\underline{\theta}) | \theta_2 = \overline{\theta})$$
$$+ p \cdot (1-p) \cdot v(g_1^{hv}(\overline{\theta}) | \theta_2 = \underline{\theta}) + (1-p)^2 \cdot v(g_1^{hv}(\overline{\theta}) | \theta_2 = \overline{\theta}), \quad (66)$$

subject to the following constraints:

1. The incentive compatibility constraint for the politician when $\theta_1 = \underline{\theta}$:

$$u(g_1^{lv}, g_1^{hv} | \theta_1 = \underline{\theta}) + q^L \cdot \left[p \cdot u(g_1^{hv}(\underline{\theta}) | \theta_2 = \underline{\theta}) + (1-p) \cdot u(g_1^{hv}(\underline{\theta}) | \theta_2 = \overline{\theta})\right]$$
$$\geq \left[-\frac{1}{2}\left(g_1^{lv}(\overline{\theta}) + g_1^{hv}(\overline{\theta}) - \underline{\theta}\right)^2 - c\left(g_1^{lv}(\overline{\theta})\right) - \alpha \cdot g_1^{hv}(\overline{\theta}) + \gamma \cdot g_1^{lv}(\overline{\theta})\right]$$
$$+ q^H \cdot \left[p \cdot u(g_1^{hv}(\overline{\theta}) | \theta_2 = \underline{\theta}) + (1-p) \cdot u(g_1^{hv}(\overline{\theta}) | \theta_2 = \overline{\theta})\right] + (1-q^H) \cdot \underline{U}. \quad (67)$$

2. The incentive compatibility constraint for the politician when $\theta_1 = \overline{\theta}$:

$$u(g_1^{lv}, g_1^{hv} | \theta_1 = \overline{\theta}) + q^H \cdot \left[p \cdot u(g_1^{hv}(\overline{\theta}) | \theta_2 = \underline{\theta}) + (1-p) \cdot u(g_1^{hv}(\overline{\theta}) | \theta_2 = \overline{\theta})\right]$$
$$\geq \left[-\frac{1}{2}\left(g_1^{lv}(\underline{\theta}) + g_1^{hv}(\underline{\theta}) - \overline{\theta}\right)^2 - c\left(g_1^{lv}(\underline{\theta})\right) - \alpha \cdot g_1^{hv}(\underline{\theta}) + \gamma \cdot g_1^{lv}(\underline{\theta})\right]$$
$$+ q^L \cdot \left[p \cdot u(g_1^{hv}(\underline{\theta}) | \theta_2 = \underline{\theta}) + (1-p) \cdot u(g_1^{hv}(\underline{\theta}) | \theta_2 = \overline{\theta})\right] + (1-q^L) \cdot \underline{U}. \quad (68)$$

3. The participation constraint for the politician when $\theta_1 = \underline{\theta}$:

$$u(g_1^{lv}, g_1^{hv} | \theta_1 = \underline{\theta}) + q^L \cdot \left[p \cdot u(g_1^{hv}(\underline{\theta}) | \theta_2 = \underline{\theta}) + (1-p) \cdot u(g_1^{hv}(\underline{\theta}) | \theta_2 = \overline{\theta})\right]$$
$$+ (1-q^L) \cdot \underline{U} \geq u(g_1^{l,p}, g_1^{h,p} | \theta_1 = \underline{\theta}) + \underline{U}. \quad (69)$$

4. The participation constraint for the politician when $\theta_1 = \overline{\theta}$:

$$u(g_1^{lv}, g_1^{hv}|\theta_1 = \overline{\theta}) + q^H \cdot \left[p \cdot u(g_1^{hv}(\overline{\theta})|\theta_2 = \underline{\theta}) + (1-p) \cdot u(g_1^{hv}(\overline{\theta})|\theta_2 = \overline{\theta})\right] + (1 - q^H) \cdot \underline{U} \geq u(g_1^{l,p}, g_1^{h,p}|\theta_1 = \overline{\theta}) + \underline{U}. \quad (70)$$

Notice that if (67) holds with equality, then (68) is slack, while if (68) holds with equality (67) is violated. Either (67) or (68) must bind, or else the voter can decrease g_1^{lv} and improve her welfare. Thus, (67) binds. This, together with (70) implies (69). Therefore, the voter maximizes her objective given (67) and (70).

Given that (67) binds, the voter benefits from making q^H as low as possible, until either $q^H = 0$ or (70) binds and

$$q^H = \frac{u(g_1^{l,p}, g_1^{h,p}|\theta_1 = \overline{\theta}) - u(g_1^{lv}, g_1^{hv}|\theta_1 = \overline{\theta})}{\mathbb{E}\left[u_2^P|\theta_1 = \overline{\theta}\right] - \underline{U}}, \quad (71)$$

where $u(g_1^{l,p}, g_1^{h,p}|\theta_1 = \overline{\theta})$ is the politician's utility under his statically optimal choice of budgets, and $\mathbb{E}\left[u_2|\theta_1 = \overline{\theta}\right]$ denotes the politician's expected utility in the second period if re-elected. By a similar argument, $q^L = 1$.

Let λ denote the Lagrange multiplier on (67). The first-order conditions to the voter's problem are

$$(g_1^{lv}(\underline{\theta})): \qquad \underline{\theta} - g_1^{lv}(\underline{\theta}) - g_1^{hv}(\underline{\theta}) = c'(g_1^{lv}(\underline{\theta}) - \frac{\lambda}{p + \lambda} \cdot \gamma, \quad (72)$$

$$(g_1^{hv}(\underline{\theta})): \qquad (p + \lambda) \cdot \left(\underline{\theta} - g_1^{lv}(\underline{\theta}) - g_1^{hv}(\underline{\theta}) - \alpha\right) \leq 0, \quad (73)$$

$$(g_1^{lv}(\overline{\theta})): \qquad \overline{\theta} - g_1^{lv}(\overline{\theta}) - g_1^{hv}(\overline{\theta}) = c'(g_1^{lv}(\overline{\theta})) - \frac{\lambda}{1 - p} \cdot \left(\overline{\theta} - \underline{\theta}\right), \quad (74)$$

$$(g_1^{hv}(\overline{\theta})): \qquad \overline{\theta} - g_1^{lv}(\overline{\theta}) - g_1^{hv}(\overline{\theta}) = \alpha \cdot (1 + p) - p \cdot (c'(g_2^{l*}(\underline{\theta})) - \gamma) - \frac{\lambda}{1 - p} \cdot \left(\overline{\theta} - \underline{\theta}\right). \quad (75)$$

For the case when $\theta_1 = \underline{\theta}$, we then have $g_1^{lv}(\underline{\theta}) > g_1^l(\underline{\theta})$, $g_1^{hv}(\underline{\theta}) \leq g_1^h(\underline{\theta}) = 0$, where $g_1^h(\theta)$ and $g_1^l(\theta)$ are the voter's preferred policies under full information, derived in Lemma 1. For the case when $\theta_1 = \overline{\theta}$, the first-order conditions (74) and (75) imply

$$c'(g_1^{lv}(\overline{\theta})) = \alpha \cdot (1+p) - p \cdot (c'(g_2^{l*}) - \gamma). \tag{76}$$

Then, it must be that either (1) $g_1^{lv}\left(\overline{\theta}\right) < g_1^l\left(\overline{\theta}\right)$ and $g_1^{hv}\left(\overline{\theta}\right) > g_1^h\left(\overline{\theta}\right)$ or (2) $g_1^{lv}\left(\overline{\theta}\right) > g_1^l\left(\overline{\theta}\right)$ and $g_1^{hv}\left(\overline{\theta}\right) < g_1^h\left(\overline{\theta}\right)$. Notice that if (2) holds and $g_1^l(\overline{\theta}) > g_1^{l*}(\underline{\theta})$, then the increase in g_1^l is lower than the decrease in g_1^h, since $c''(g_1^l(\overline{\theta})) > c''(g_2^{l*}(\underline{\theta}))$. Then, (74) cannot hold. As in Lemma 1, we have $\overline{\theta} > \overline{\theta}^*$, which implies $g_1^l(\overline{\theta}) > g_1^{l*}(\underline{\theta})$. Thus, only (1) holds.

A.4 Proof of Corollary 1

Consider the case in which $q^L, q^H \in \{0,1\}$. The same steps as in the proof to Proposition 2 imply that $q^L = 1$, constraint (67) binds and constraint (70) binds if $q^H = 1$, and it is violated if $q^H = 0$. Denote by λ and ψ the Lagrange multipliers on constraints (67) and (70), respectively. Then, the voter's maximization problem leads to the first-order conditions:

$$\underline{\theta} - g_1^{lv}(\underline{\theta}) - g_1^{hv}(\underline{\theta}) - c'(g_1^{lv}(\underline{\theta})) + \frac{\lambda}{p+\lambda} \cdot \gamma = 0, \tag{77}$$

$$(p+\lambda) \cdot \left(\underline{\theta} - g_1^{lv}(\underline{\theta}) - g_1^{hv}(\underline{\theta}) - \alpha\right) \leq 0, \tag{78}$$

$$\overline{\theta} - g_1^{lv}(\overline{\theta}) - g_1^{hv}(\overline{\theta}) - c'(g_1^{lv}(\overline{\theta})) + \frac{\lambda}{1-p-\lambda+\psi} \cdot (\overline{\theta} - \underline{\theta}) + \frac{\psi - \lambda}{1-p-\lambda+\psi} \cdot \gamma = 0, \tag{79}$$

$$\overline{\theta} - g_1^{lv}(\overline{\theta}) - g_1^{hv}(\overline{\theta}) + p \cdot (c'(g_2^{l*}(\underline{\theta})) - \gamma) - \alpha \cdot (1+p) + \frac{\lambda}{1-p-\lambda+\psi} \cdot \left(\overline{\theta} - \underline{\theta}\right) = 0. \tag{80}$$

The first-order conditions for $g_1^{lv}\left(\underline{\theta}\right)$ and $g_1^{hv}\left(\underline{\theta}\right)$ imply $g_1^{lv}\left(\underline{\theta}\right) > g_1^l\left(\underline{\theta}\right)$ and $g_1^{hv}\left(\underline{\theta}\right) = 0$. For the case when $\theta_1 = \overline{\theta}$, consider starting from the equilibrium $g_1^{lv}\left(\overline{\theta}\right)$, $g_1^{hv}\left(\overline{\theta}\right)$ and q^H from Proposition 2. Then, $\lambda \geq \psi$ and changing the policies so as to satisfy (79) and (80) implies increasing $g_1^{hv}\left(\bar{\theta}\right)$ and decreasing $g_1^{lv}\left(\bar{\theta}\right)$.

A.5 Proof of Proposition 3

From conditions (72)-(74), it follows that an increase in p does not affect $g_1^{lv}(\underline{\theta})$, $g_1^{hv}(\underline{\theta})$, and $g_1^{lv}(\bar{\theta})$. For (75), an increase in p implies

$$\frac{\partial^2(v(g_1^{lv}, g_1^{hv}|\bar{\theta}) + \mathbb{E}\left[v(g_2^{lv}, g_2^{hv}|\theta_2, \theta_1 = \bar{\theta})\right])}{\partial g_1^{hv}(\bar{\theta})\partial p} < 0. \tag{81}$$

Thus, applying the Envelope Theorem,

$$\frac{\partial g_1^{hv}(\bar{\theta})}{\partial p} < 0. \tag{82}$$

Notice that from (74) and (75),

$$\frac{\partial g_1^{hv}(\bar{\theta})}{\partial \gamma} = 0, \quad \frac{\partial g_1^{lv}(\bar{\theta})}{\partial \gamma} = 0. \tag{83}$$

From (72) and (73),

$$\frac{\partial g_1^{lv}(\underline{\theta})}{\partial \gamma} > 0, \quad \frac{\partial g_1^{hv}(\underline{\theta})}{\partial \gamma} \leq 0. \tag{84}$$

B Proofs for Section 5

Lemma 2 *The value function $V(EU)$ is concave and differentiable for $EU \in (\underline{EU}, \overline{EU})$.*

Proof. Concavity. The functions $v\left(B^l, B^h|\theta\right)$ and $u\left(B^l, B^h|\theta\right)$ are strictly concave. Then, $\mathbb{E}_\theta\left[v(B^l, B^h|\theta)\right]$ is also strictly concave. Let $\alpha(EU) = \{B^l(\theta), B^h(\theta), EU'(\theta)\}_{\theta\in\{\underline{\theta},\bar{\theta}\}}$ denote the choice variables of the voter each period corresponding to each possible realization of θ. Then, $V(EU(\theta))$ is the voter's utility under solution α. Consider two continuation values

$EU_a(\theta)$ and $EU_b(\theta)$ associated with corresponding solutions $\alpha_a = \{B^l_a(\theta), B^{h*}_a(\theta), EU'_a(\theta)\}_{\theta\in\Theta}$ and $\alpha_b = \{B^l_b(\theta), B^h_b(\theta), EU'_b(\theta)\}_{\theta\in\Theta}$, where α_a and α_b are feasible given the politician constraints. Also, let $z \sim Uniform[0,1]$ and $\mu \in (0,1)$. Let policy sequence α_c be defined as follows:

$$\alpha_c = \begin{cases} \alpha_a & if\ z \leq \mu \\ \alpha_b & if\ z > \mu \end{cases}. \tag{85}$$

Policy α_c is feasible since α_a and α_b are feasible (and the policy domain is convex). The expected utility provided by α_c is $\mu \cdot V(EU_a(\theta)) + (1-\mu) \cdot V(EU_b(\theta))$. Given, $EU_c = \mu \cdot EU_a + (1-\mu) \cdot EU_b$, the voter's maximum expected utility is $V(EU_c)$, which must then satisfy

$$V(EU_c) \geq \mu \cdot V(EU_a(\theta)) + (1-\mu) \cdot V(EU_b(\theta)). \tag{86}$$

Then, by Jensen's inequality, $V(EU)$ is concave.

Differentiability. Since $u(\cdot)$ and $v(\cdot)$ are concave and differentiable, it remains to show that $V(EU)$ is differentiable at EU over $(\underline{EU}, \overline{EU})$. For this, it suffices to show that there exists a function $Q(EU+\epsilon)$ for some small ϵ, which is differentiable, weakly concave and satisfies $Q(EU+\epsilon) \leq V(EU+\epsilon)$, where $Q(EU+\epsilon) = V(EU+\epsilon)$ for $\epsilon = 0$ (Benveniste and Scheinkman (1979), Lemma 1). To do this, we construct the function $Q(EU+\epsilon)$ using the perturbation method.

Let α be an interior solution to the maximization problem 9 given some $EU \in (\underline{EU}, \overline{EU})$. Then, we can construct a perturbed solution $\widehat{\alpha}(\epsilon)$ that satisfies the constraints of problem 9 and provides the politician with expected utility $EU + \epsilon$. We construct $\widehat{\alpha}(\epsilon)$ such that the following condition is satisfied:

$$\widehat{B^l}(\theta,\epsilon) = B^l(\theta) + \xi^l(\theta,\epsilon) \tag{87}$$

$$\widehat{B^h}(\theta,\epsilon) = B^h(\theta) + \xi^h(\theta,\epsilon), \tag{88}$$

where the functions $\xi^l(\theta,\epsilon)$ and $\xi^h(\theta,\epsilon)$ are chosen such that the following conditions are satisfied:

$$\mathbb{E}_\theta\left[u(B^l(\theta),B^h(\theta))\right]+\epsilon=\mathbb{E}_\theta\left[u(\widehat{B^l}(\theta,\epsilon),\widehat{B^h}(\theta,\epsilon))\right], \tag{89}$$

$$u(B^l(\overline{\theta}),B^h(\overline{\theta}))-u(B^l(\underline{\theta}),B^h(\underline{\theta}))=u\left(\widehat{B^l}(\overline{\theta},\epsilon),\widehat{B^h}(\overline{\theta},\epsilon)\right)-u\left(\widehat{B^l}(\underline{\theta},\epsilon),\widehat{B^h}(\underline{\theta},\epsilon)\right), \tag{90}$$

$$u(B^l(\theta),B^h(\theta))-u(B^{l,p}(\theta),B^{h,p}(\theta))=u(\widehat{B^l}(\theta,\epsilon),\widehat{B^h}(\theta,\epsilon))-u(\widehat{B^{l,p}}(\theta,\epsilon),\widehat{B^{h,p}}(\theta,\epsilon)). \tag{91}$$

The above equations are sufficient to obtain solutions for $\{\xi^l(\theta,\epsilon),\xi^h(\theta,\epsilon)\}$ where $\xi^l(\theta,0)=\xi^h(\theta,0)=0$. Since $v(\cdot)$ and $u(\cdot)$ are differentiable, then it follows that the functions $\{\xi^l(\theta,\epsilon),\xi^h(\theta,\epsilon)\}_{\theta\in\Theta}$ coming out of the above equalities are also differentiable around $\epsilon=0$.

Let $Q(EV+\epsilon)$ denote the household utility obtained under policy $\widehat{\delta}(\epsilon)$. Then at $\epsilon=0$, $\widehat{\alpha}(0)=\alpha$ and $Q(EU)=V(EU)$. By construction, the perturbed solution $\widehat{\alpha}(\epsilon)$ along with the solution to the politician sub-problem satisfy conditions (89)-(91), which implies $\widehat{\alpha}(\epsilon)$ satisfies the constraints of the voter's problem for $\epsilon\to 0$: equality (89) implies that constraint (10) is satisfied, and equation (90) implies that condition (11) is satisfied. Equation (91) implies that constraint (12) is satisfied. Finally, the feasibility condition that $EU\in(\underline{EU},\overline{EU})$ is satisfied by the assumption of a small perturbation around the interior solution α. It then follows that $\widehat{\alpha}(\epsilon)$ is a feasible solution to the voters' problem. This implies

$$V(EU+\epsilon)\geq Q(EU+\epsilon). \tag{92}$$

Moreover, $Q(EU)=U(EU)$ and (92) imply $Q(EU+\epsilon)$ is locally concave around EU. Then, the value function $U(EU)$ is differentiable for $EU\in(\underline{EU},\overline{EU})$. ■

B.1 Proof of Proposition 4

According to Lemma 2, $V(EU)$ is concave and differentiable, so the first-order conditions are necessary and sufficient for the maximization of problem of 9. Denote by μ, $\lambda(\theta)$,$\phi(\theta)$,$\beta\cdot\underline{\iota}$, and $\beta\cdot\bar{\iota}$ the Lagrange multipliers on constraints (10)- (14), and denote by V_{EU} the derivative of V with respect to EU. As in the proof to Proposition 2, constraint (11) binds only for $\theta=\overline{\theta}$ and $q(\underline{\theta})=1$. Also, as $u(\cdot)$ is concave, then for $\theta=\overline{\theta}$, condition (11) implies condition (12). Thus, we have, the following first-order conditions:

$$\begin{aligned}
B^h(\overline{\theta}) &: (1-p)\cdot\frac{\partial v(B^l(\overline{\theta}),B^h(\overline{\theta}))}{\partial B^h(\overline{\theta})}+((1-p)\cdot\mu+\phi(\overline{\theta}))\cdot\frac{\partial u(B^l(\overline{\theta}),B^h(\overline{\theta}))}{\partial B^h(\overline{\theta})}\\
&\quad-\lambda(\underline{\theta})\cdot\frac{\partial u(B^l(\overline{\theta}),B^h(\overline{\theta})|\underline{\theta})}{\partial B^h(\overline{\theta})}=0, \qquad (93)\\
B^h(\underline{\theta}) &: p\cdot\frac{\partial v(B^l(\underline{\theta}),B^h(\underline{\theta}))}{\partial B^h(\underline{\theta})}+(p\cdot\mu+\lambda(\underline{\theta}))\cdot\frac{\partial u(B^l(\underline{\theta}),B^h(\underline{\theta}))}{\partial B^h(\underline{\theta})}=0, \qquad (94)\\
B^l(\overline{\theta}) &: (1-p)\cdot\frac{\partial v(B^l(\overline{\theta}),B^h(\overline{\theta}))}{\partial B^l(\overline{\theta})}+((1-p)\cdot\mu+\psi(\overline{\theta}))\cdot\frac{\partial u(B^l(\overline{\theta}),B^h(\overline{\theta}))}{\partial B^l(\overline{\theta})}\\
&\quad-\lambda(\underline{\theta})\cdot\frac{\partial u(B^l(\overline{\theta}),B^h(\overline{\theta})|\underline{\theta})}{\partial B^l(\overline{\theta})}=0, \qquad (95)\\
B^l(\underline{\theta}) &: p\cdot\frac{\partial v(B^l(\underline{\theta}),B^h(\underline{\theta}))}{\partial B^l(\underline{\theta})}+(p\cdot\mu+\lambda(\underline{\theta}))\cdot\frac{\partial u(B^l(\underline{\theta}),B^h(\underline{\theta}))}{\partial B^l(\underline{\theta})}=0, \qquad (96)\\
EU'(\overline{\theta}) &: (1-p)\cdot V_{EU}(EU'(\overline{\theta}))+(1-p)\cdot\mu+\phi(\overline{\theta})-\lambda(\underline{\theta})+\frac{\underline{\iota}(\overline{\theta})-\bar{\iota}(\overline{\theta})}{q(\overline{\theta})}=0, \qquad (97)\\
EU'(\underline{\theta}) &: p\cdot V_{EU}(EU'(\underline{\theta}))+p\cdot\mu+\lambda(\underline{\theta})+\frac{\underline{\iota}(\underline{\theta})-\bar{\iota}(\underline{\theta})}{q(\underline{\theta})}=0, \qquad (98)\\
q(\underline{\theta}) &: p(V(EU'(\underline{\theta}))-V^0)+(p\cdot\mu+\phi(\underline{\theta})+\lambda(\underline{\theta}))\cdot(EU'(\overline{\theta})-\underline{U})\leq 0. \qquad (99)\\
q(\overline{\theta}) &: (1-p)(V(EU'(\overline{\theta}))-V^0)+((1-p)\cdot\mu+\phi(\overline{\theta})-\lambda(\underline{\theta}))\cdot(EU'(\overline{\theta})-\underline{U})\leq 0. \qquad (100)
\end{aligned}$$

From (97) and (98), given $\lambda\geq 0$ and $EU'\in(\underline{E}U,\overline{E}U)$, it follows that $V_{EU}(EU'(\overline{\theta}))\geq V_{EU}(EU'(\overline{\theta}))$, with strict inequality whenever constraint (11) binds. Since $V(\cdot)$ is concave in

EU, it follows that $EU'(\overline{\theta}) \leq EU'(\overline{\theta})$. The envelope condition is given by

$$V_{EU}(EU) = -\mu. \tag{101}$$

From Since $EU - \underline{U} \geq u(g_1^{lp*}, g_1^{hp*})$, then constraint (12) does not bind whenever $q(\theta) = 1$. In this case, adding up (97) and (98) , for $EU'(\theta) < \overline{EU}$, we obtain

$$\mathbb{E}\left[V_{EU}(EU'(\theta^n))\right] + \mu = 0. \tag{102}$$

Combining with (101), we obtain

$$\mathbb{E}\left[V_{EU}(EU'(\theta))\right] = V_{EU}(EU), \tag{103}$$

where the above equations hold with equality for an internal solution. Thus, $(EU'(\overline{\theta}) < EU < EU'(\underline{\theta})$

If constraint (12) binds, then adding up (97) and (98) and combining with (101) results in a sub-martingale:$\mathbb{E}\left[V_{EU}(EU'(\theta))\right] < V_{EU}(EU)$. Thus, $EU'(\underline{\theta}) > EU$. Given the concavity of V, for any EU, if $q(\theta) < 1$, then $EU'(\underline{\theta})$ or $EU'(\overline{\theta})$ is higher than if $q = 1$.

C Extension to Agency Expertise

Several models of bureaucratic policymaking have pointed out that high capacity agencies also have the additional feature of better expertise. This means that the high capacity agency has better information about θ than the low capacity agency. The model is robust to incorporating this additional feature. Specifically, consider the case in which the politician and the low capacity agency only observe a signal $s \in \{g, b\}$ about the value of θ, where g signals a value $\theta = \underline{\theta}$ and b signals a value $\theta = \overline{\theta}$. The signal is accurate with probability

$\mu \in (0.5, 1)$. The politician's expected payoff each period becomes

$$u\left(g^l, g^h|s\right) = -\frac{1}{2} \cdot \left[\Pr\left(\theta = \underline{\theta}|s\right) \cdot \left(g^h + g^l - \underline{\theta}\right)^2 + \Pr\left(\theta = \overline{\theta}|s\right) \cdot \left(g^h + g^l - \overline{\theta}\right)^2\right] + \gamma \cdot g^l - c\left(g^l\right) - \alpha \cdot g^h, \quad (104)$$

subject to $\alpha \cdot g^h = B^h$, $c\left(g_t^l\right) = B^l$, and $B_2^h \geq B_1^h$. The politician decides the budget allocation to agencies with only imprecise information about the economic impact of the public spending. Once the agencies receive their respective budget, they produce the public good feasible given their funds. The problem for the voter is then similar to the one presented in the main model. For simplicity, we restrict the model to the case with $q \in \{0, 1\}$. The politician may communicate his information about the state of the economy, which is now the signal s. The voter's re-election strategy induces the politician to report the real value of the signal. The expertise disadvantage of the politician and the low capacity agency, manifested in imperfect information, leads to a more imprecise estimate of the benefit of public spending. This drives the politician to restrain spending due to his own uncertainty. Nevertheless, the incentives for over-funding the low capacity agency are still present. Yet, since the politician's spending is reduced to begin with, due to his own uncertainty, the voter does not require as much funding for the high capacity agency as in the case with perfect information.

Remark 1 *When the high capacity agency has higher expertise, its funding decreases relative to the case where the politician has expertise.*

Intuitively, lack of expertise on the side of the politician may help electoral accountability, as uncertainty about the benefit of public spending restrains the politician from engaging in too much biased spending.

The formal analysis of the voter's problem is the following. The problem for the voter is to choose a reelection strategy that induces the politician to report his signal truthfully:

$$\begin{aligned}\max_{g_1^{hv},g_1^{lv},g_2^{h*},g_2^{l*}} & -\frac{1}{2}\cdot\left[\Pr\left(\theta_1=\underline{\theta}|s_1\right)\cdot\left(g_1^{hv}+g_1^{lv}-\underline{\theta}\right)^2+\Pr\left(\theta_1=\overline{\theta}|s_1\right)\cdot\left(g_1^{hv}+g_1^{lv}-\overline{\theta}\right)^2\right]\\ & +\mathbb{E}_{s_2}\left[-\frac{1}{2}\cdot\left[\Pr\left(\theta_2=\underline{\theta}|s_2\right)\cdot\left(g_2^{h*}+g_2^{l*}-\underline{\theta}\right)^2+\Pr\left(\theta_2=\overline{\theta}|s_2\right)\cdot\left(g_2^{h*}+g_2^{l*}-\overline{\theta}\right)^2\right]\right.\\ & \left.-c\left(g_2^l\right)-\alpha\cdot\left(\Delta g_2^{h*}+g_1^{hv}\right)\right]-c\left(g_1^l\right)-\alpha\cdot g_1^h.\end{aligned} \tag{105}$$

subject to the incentive compatibility (IC) constraints

$$\mathbb{E}\left[u(g_1^{lv}(s_1),g_1^{hv}(s_1)|s_1)+u(g_2^{l*},g_2^{h*}|s_1)\right]\geq\mathbb{E}\left[u(g_1^{lv}(\hat{s}_1),g_1^{hv}(\hat{s}_1)|s_1)+u(g_2^{l*},g_2^{h*}|\hat{s}_1)\right], \tag{106}$$

and the participation constraints

$$\mathbb{E}\left[u(g_1^{lv}(s_1),g_1^{hv}(s_1)|s_1)+u(g_2^{l*},g_2^{h*}|s_1)\right]\geq\mathbb{E}\left[u(g_1^{l,p}(s_1),g_1^{h,p}(s_1)|s_1)\right]+\underline{U}. \tag{107}$$

The first-order conditions to the above problem are the same as in the proof to Proposition 2, with the difference that $\overline{\theta}$ is replaced by $\mu\cdot\underline{\theta}+(1-\mu)\cdot\overline{\theta}$, and $\underline{\theta}$ is replaced by $(1-\mu)\cdot\underline{\theta}+\mu\cdot\overline{\theta}$. It then follows that $g_1^{hv}(s=\underline{\theta})\geq 0$, $g_1^{lv}(s=\underline{\theta})\geq g_1^{lvc}(\underline{\theta})$, $g_1^{hv}\left(s=\overline{\theta}\right)\leq g_1^{hvc}\left(\overline{\theta}\right)$, while the effect on $g_1^{lv}\left(s=\overline{\theta}\right)$ is ambiguous.