Policy-Development Monopolies:

Adverse Consequences and Institutional Responses

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Abstract

We analyze a model of policymaking in which only one actor, e.g., a bureaucratic agency or a well-funded interest group, has the capacity to develop high-quality policy proposals. By virtue of her skills, this actor has an effective monopoly on policy development and thus can craft proposals that are good for herself but provide few benefits to decisionmakers who enact policies. We then examine institutional responses that decisionmakers can use to induce a policy-development monopolist to craft more-appealing proposals: (i) establishing in-house policy development capacity, (ii) delegating authority to an agent who counterbalances the monopolist’s preferences, and (iii) fostering competition by policy developers with different preferences. We apply our model to a diverse set of contexts, including lobbying in term-limited state legislatures, regulation of banking and financial services, and administrative procedures for rulemaking in U.S. federal bureaucracies.
During the Cuban Missile Crisis, the Joint Chiefs of Staff wanted to take aggressive actions to deal with the threat posed by Soviet missiles. The military had previously crafted plans to bomb and invade Cuba, and once the crisis began in October 1962, the Joint Chiefs pushed President Kennedy to implement these plans.\(^1\) The President wanted to consider less-aggressive approaches, but faced the challenge of designing and implementing a viable alternative. A massive assault is not a simple undertaking, so once the military had used its expertise and effort to generate specific operational plans, there was no straightforward way for the President to use them as part of a different strategy. Thus, although the President had formal decisionmaking authority, the military’s expertise in fighting wars could potentially give it informal authority to determine U.S. strategy in the crisis.

The President, however, used several institutional tools to ensure that he had more-appealing options. First, he had in-house policy development capacity in the National Security Council. Moreover, he had advisors, particularly Secretary of Defense Robert McNamara as well as his brother, Attorney General Robert F. Kennedy, who were skeptical of the military and who were less-inclined to initiate combat. The President and his advisors worked with the State Department and the Navy to generate options that did not involve bombing or invasion. Although there was no perfect way to handle the crisis and, as noted by Allison (1969), many mistakes were made along the way, the President ultimately was able to implement a reasonably well-crafted policy, using a combination of a blockade and diplomacy, that was much more in line with his preferred approach.

The counterfactual of what might have happened if Kennedy didn’t have these institutional tools at his disposal, but rather had to rely solely on the Joint Chiefs, is perhaps more terrifying than the actual history of the Cuban Missile Crisis. Would he have implemented the Joint Chiefs’ plans, which they expected to lead to a minimum of 18,500 U.S. casualties and potentially escalate to nuclear war?\(^2\) Would he have acquiesced to the presence of destabilizing medium-range missiles? Or

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\(^1\) JCSM-844-62, “Recommendation for Execution of CINCLANT OPLANS 312 and 316.”

would he have tried to concoct a different, ad hoc policy, even if it was poorly designed?

These questions are particularly provocative in the context of the Cuban Missile Crisis. Yet similar issues arise whenever an actor with formal decisionmaking authority must rely on others to craft policy options for his consideration. Policy developers include not just military leaders, but also civilian bureaucrats who design economic policies and business interests that craft complicated regulatory policies. When policies are not neatly decomposable, but rather consist of complicated interactive components, a decisionmaker can’t take the components that make a policy proposal effective and use them to pursue his own goals. This fact is, of course, understood by policy developers, who realize that their expertise gives them informal agenda power that they can exploit to achieve their own ends. Indeed, Weber (1942) forcefully argued that in a wide range of settings, the expertise of a dominant bureaucracy or business interests ensures that a nominal “political master”—whether a president, parliament, electorate, or monarch—is actually a powerless “dilettante.”

In this paper, we analyze the relationship between policy developers and decisionmakers, using a model in which policy consists of both a spatial component, over which actors disagree, and a quality component that they all value. In the Cuban Missile Crisis, the spatial component represents the aggressiveness of a policy, with the range of options including acquiescence, negotiation, blockade, invasion, or a nuclear first strike. The quality component represents how well-crafted the policy is, a matter that was especially salient after the failure of the badly designed Bay of Pigs invasion.

In the model, creating a high-quality policy requires expertise or institutional capacity as well as effort. A key assumption of our model is that effort exerted to craft one policy option doesn’t improve the quality of other options, i.e., it is policy-specific. The assumption that quality is policy-specific has been used in a growing literature on policy choice in legislatures (Londregan 2000; Hirsch and Shotts 2012; Hitt, Volden, and Wiseman 2017), courts (Lax and Cameron 2007), and bureaucratic agencies (Bueno de Mesquita and Stephenson 2007, Ting 2011). This approach contrasts with a large literature building on Crawford and Sobel (1982) and Gilligan and Krehbiel (1987) in which
the information necessary to implement a liberal policy is the same as the information necessary to implement a conservative one. However, as argued by Callander (2008, 2011), in many empirical domains, the fact that an actor knows how to design one policy doesn’t mean he knows how to design a completely different one. For example, the Joint Chiefs’ invasion plans were carefully crafted, using the military’s institutional resources and expertise in warfighting, but these plans were useful only for an assault, not for a blockade or a diplomatic approach to the crisis.

To identify our model’s key strategic tension, we first analyze what happens if a single actor can develop high-quality policies for consideration by a decisionmaker. We show that a policy-development monopolist will take advantage of her expertise to obtain informal authority by crafting policies that promote her own interests, as in Bendor, Taylor, and Van Gaalen (1987) and Aghion and Tirole (1997). From the perspective of the decisionmaker, this is problematic: he wants a high-quality policy in line with his preferences, but is instead stuck choosing between a low-quality one in line with his preferences, or a high-quality one that serves the monopolist’s interests. This strategic tension may appear similar to what arises in informational models in the tradition of Crawford and Sobel (1982), but it is actually quite different. In classical informational models, an expert is reluctant to acquire or reveal information, because she worries that a decisionmaker will use it to implement a policy far from the expert’s ideal point. In our model, in contrast, the only way a decisionmaker can benefit from a policy developer’s expertise is by adopting the policy she developed. Hence, the policy developer has informal agenda power.

The ideal way for the decisionmaker to rein in this agenda power would be to credibly threaten to enact something the monopolist dislikes if she fails to craft a policy in line with the decisionmaker’s interests. This, however, would require the decisionmaker to commit ex-ante to reject policies that are better than what he can develop on his own. Politicians typically find it difficult or impossible to make such commitments, because they have limited means of control, urgency to address specific policy issues, and short time horizons in office. Instead, the solution is often to create institutions
that effectively, if crudely, achieve the same end.

Our first contribution is to show how the problem of policy-development monopoly can be mitigated using three common institutional arrangements: establishing internal policy-development capacity, delegating decisionmaking authority to an agent who counterbalances the monopolist, and facilitating participation by a competing policy developer with different preferences. These institutional responses share a simple common theme: it is useful to make a monopolist’s life more difficult, because the threat of being stuck with a policy that she dislikes will spur her to exert greater effort crafting high-quality proposals in line with the decisionmaker’s preferences. This contrasts with informational models, in which, broadly speaking, a decisionmaker finds it useful to make an expert’s life easier by committing not to expropriate her information, e.g., by adopting a closed rule (Gilligan and Krehbiel, 1987), delegating to an agent aligned with the expert (Dessein 2002; Boehmke, Gailmard, and Patty 2005), or delegating to the expert herself (Bendor and Meirowitz 2004).

Our second contribution is to apply the model to a variety of empirical contexts. Our goal is not to provide a full test of our model, as is typical in applied formal theory that derives hypotheses for empirical testing. Rather, we use the model as a novel analytical lens to reinterpret existing theoretical and empirical debates in the literature on policymaking, similar to the approach used by Gailmard and Patty (2013a) and advocated by Clarke and Primo (2012). When analyzing internal capacity, we show how term limits encourage state legislatures to rely on policy development by external actors like governors and lobbyists. We apply our model of delegation to suggest that regulation of a complicated industry like banking should be handled by anti-industry skeptics rather than pro-industry insiders. Finally, we use our model of competition to analyze the effects of administrative procedures that can either foster or inhibit broad participation in regulatory rulemaking.

More generally, our analysis complements Hitt, Volden, and Wiseman (2017) in demonstrating how complete-information spatial models with endogenous quality provide a tractable framework for analyzing a wide variety of institutional arrangements. Our model’s foundation is similar to previ-
ous models of endogenous quality focusing on one particular question or institutional arrangement (Wiseman 2006; Lax and Cameron 2007; Bueno de Mesquita and Stephenson 2007; Ting 2011; Hirsch and Shotts 2012, 2015). Here we show how institutional features like internal capacity, delegation, and competition can be analyzed in a unified modeling framework that is technically simple, and therefore very accessible to applied researchers.

**Baseline Model: Policy-Development Monopoly**

We first introduce our model of policy-development monopoly. Policy consists of two dimensions: ideology $y$ and quality $q$, where $q \geq 0$. There are two actors: a decisionmaker and a policy developer, with ideological ideal points $x_{DM} = 0$ and $x_D > 0$. Each actor $i \in \{DM, D\}$ incurs losses $\lambda_i (|x_i - y|)$ that depend on the distance between the policy $y$ and the actor’s ideal point $x_i$. Each actor’s loss function is continuously differentiable, strictly increasing and convex, and satisfies $\lambda_i (0) = 0$, $\lambda_i'(0) = 0$, and $\lim_{z \to \infty} \lambda_i'(z) = \infty$; thus, quadratic spatial preferences $\lambda_i (|x_i - y|) = (x_i - y)^2$ are a special case of our model. We also assume the two players value quality equally, at exactly $q$, regardless of the ideological location of the policy. Thus, player $i$’s utility from policy $(y, q)$ is

$$U_i(y, q) = q - \lambda_i (|x_i - y|).$$

In the baseline model, only the developer can produce quality, at a cost $c_D(q)$ that is a continuously differentiable, strictly increasing and convex function of quality, where $c_D(0) = 0$, and $\exists q > 0$ s.t. $c_D'(q) > 1$ (so she can’t generate infinite utility via an infinite amount of quality). Quality is policy-specific: if the developer crafts a policy $(y_D, q_D)$ with $q_D > 0$, then any other ideological policy $y \neq y_D$ chosen by the decisionmaker will have zero quality. The quality level $q = 0$ is a normalization, representing the quality associated with a policy that is developed with minimal skill or effort.

The baseline model is quite simple, and proceeds as follows. [1] The developer crafts a policy $b_D = (y_D, q_D)$. [2] The decisionmaker enacts $b_D$ or any zero-quality policy $(y, 0)$.

To solve the model, we first note that if the decisionmaker doesn’t enact the developer’s policy, he
will enact his own ideal point with zero quality, \((0, 0)\), because this is his most-preferred zero-quality policy. The developer, when choosing which policy to develop, thus chooses a policy that maximizes her utility subject to the constraint of producing enough quality to induce the decisionmaker to prefer \(b_D\) over \((0, 0)\). This dynamic resembles Romer and Rosenthal’s (1979) classic agenda setting model, in which a decisionmaker is forced to choose between a single proposal and an exogenous status quo, with \((0, 0)\) playing the role of the status quo. But the substantive rationale for this aspect of our model is quite different. The developer has no formal ability to constrain the decisionmaker’s choices–indeed, the decisionmaker may choose a policy at any ideological location. However, if the decisionmaker wants a high quality policy, then his choices are informally constrained by the developer’s monopoly over the technology of quality development, combined with the properties of quality itself–namely, that once developed it is attached to a single policy.

To find the developer’s optimal policy to develop, note that she must give the decisionmaker at least as much utility as he gets from \((0, 0)\), which means that she must develop quality \(q_D \geq \lambda_{DM}(y_D)\). If the developer is close to the decisionmaker this constraint is not binding; she will craft a policy at her own ideal point with the level of quality \(q_0\) that she intrinsically prefers to produce \((c_D'(q_0) = 1)\). If the developer is farther away from the decisionmaker so that her cost function is sufficiently steep \((c_D'(\lambda_{DM}(x_D)) \geq 1)\), she optimally produces no more quality than necessary to satisfy the constraint with equality, paying cost \(c_D(\lambda_{DM}(y_D))\). She also values quality for its own sake, so the net cost of developing the lowest-quality enactable policy at \(y_D\) is \(c_D(\lambda_{DM}(y_D)) - \lambda_{DM}(y_D)\). The developer’s ideological utility is \(-\lambda_D(|x_D - y_D|)\). Due to convexity of the actors’ cost and loss functions, a unique \(y^* \in (0, x_D]\) is optimal and satisfies the following first order condition trading off costs against ideological benefits:

\[
c_D'(\lambda_{DM}(y_D)) - 1 = \frac{\lambda_D'(x_D - y_D)}{\lambda_{DM}'(y_D)}. \tag{1}
\]

Our first proposition summarizes this argument. Formal proofs are in the Appendix.
Proposition 1 (Baseline) If the developer is closely aligned with the decisionmaker \((x_D < \hat{x}_D)\) where \(\lambda_{DM}(\hat{x}_D) = q_0\) she crafts a policy at \(y^* = x_D\) with quality \(q^* = q_0\) and the decisionmaker’s utility is \(q_0 - \lambda_{DM}(x_D) > 0\). If the developer is not closely aligned \((x_D \geq \hat{x}_D)\), she crafts a policy at \(y^*\) from Equation 1 with quality \(q^* = \lambda_{DM}(y^*)\), and the decisionmaker’s utility is 0.

Figure 1 illustrates the model when the developer is not closely aligned with the decisionmaker. The developer has informal agenda power due to her ability to craft high-quality policies—the decisionmaker could choose any other ideology, but does not have the capacity to develop quality on his own. The shaded region above his indifference curve through \((0,0)\) is the set of policies that he is willing to enact in lieu of his own ideal point with zero quality. The developer’s indifference curves for policies she creates are shown by dashed lines. Because quality is costly, her indifference curves slope down and she prefers to develop a policy on a lower curve. Her optimal policy to develop is \((y^*, q^*)\), the point of tangency between her indifference curves and the set of enactable policies. At this point, the marginal benefit of obtaining an outcome closer to her ideal point exactly balances the net marginal cost of creating a higher-quality policy along the decisionmaker’s indifference curve.

Figure 1: Baseline. In the figure, the actors have quadratic preferences, with ideal points \(x_{DM} = 0\) and \(x_D = 1\). The developer’s cost of producing quality is \(c_D(q) = 2q^2\). The shaded area represents policies that the decisionmaker would accept, and the dashed lines represent the developer’s indifference curves. The equilibrium policy is \(y^* = 2^{-\frac{2}{3}}, q^* = 2^{-\frac{4}{3}}\).
Variants of this baseline model can be used to generate many empirical implications. For example, Hitt, Volden, and Wiseman (2017) derive comparative statics about the effects of variation in legislators’ skill at designing proposals and Triossi, Valdivieso, and Villena-Roldan (2013) study voting in the Chilean Senate. For our purposes, the key implication of the model is the simplest one: unless the developer and decisionmaker have closely aligned preferences, the decisionmaker receives no benefit from the developer’s efforts to craft high-quality proposals. Indeed, he is no better off than he would be if the developer didn’t exist. This adverse consequence is a direct effect of the developer’s monopoly on the technology of quality production–she can exercise informal agenda power and extract all of the benefits of quality in the form of ideological rents.

Discussion of Assumptions

Before analyzing institutional responses to the problem of policy-development monopoly, we briefly remark on the model’s key assumptions, empirical domain, and place in the literature.

Assumptions about quality The model makes two key assumptions about quality, or more precisely the results of the monopolist’s effort. The first is that effort produces something that is valued by all players. The substantive interpretation of this assumption is not that every feature of a policy that the monopolist considers to be high-quality is also high-quality from the perspective of the decisionmaker. Rather, it is that there are some features of policy that are valued by both the monopolist and the decisionmaker, and that these features can be improved via the monopolist’s effort. Some examples include cost savings, efficient implementation, making a policy more appealing to voters, or reducing the variance of outcomes in a model with risk-averse policy preferences.

The second assumption is that the quality produced by the monopolist cannot be transferred to alternative policies—even those that are ideologically very similar. Our model is thus tailored to empirical domains in which experts’ costly investments in good policies are largely specific to those policies, and cannot be easily used to improve other alternatives. (See Hirsch and Shotts (2012) for a more thorough discussion of the conditions under which this assumption is appropriate).
We make the arguably extreme assumption that quality is *fully policy-specific* for the same reason that a literature building on Crawford and Sobel (1982) and Gilligan and Krehbiel (1987) makes the opposite extreme assumption that policy-relevant information is *fully transferable*–namely, to simplify the analysis. However, we note that our results continue to hold if quality is partially transferrable across policies, as long as it is not too transferable.\(^3\)

**Assumptions about bargaining power** In our model there are potential mutual benefits from the monopolist creating high-quality policies–the monopolist may not value quality enough to develop such policies on her own, but may be willing to do so in exchange for ideological concessions. However, the degree to which each player benefits from policy development depends on the ideological location and quality of the final policy. These in turn depend on our assumptions about how bargaining takes place between the decisionmaker and the monopolist.

Similar to classical informational models in the tradition of Crawford and Sobel (1982), our formal bargaining protocol gives the decisionmaker complete freedom to ignore the monopolist’s proposal and choose any other point in the ideological spectrum. As noted by Callander (2008) and Hirsch and Shotts (2012) this assumption typically allows decisionmakers to expropriate the benefits of an expert’s expertise, thereby reducing her incentive to acquire it. However, this dynamic fails to hold in our model because of the “exogenous features of policy-making expertise” (Gailmard and Patty 2012) – specifically, that quality is *policy-specific*. Instead, because the monopolist knows the decisionmaker cannot transfer her quality to another policy, and must ultimately choose the best policy available to him, she develops something no more appealing than his best outside option \((0,0)\) and extracts the full surplus for herself. Thus, as suggested by Weber, a decisionmaker’s subordinate ends up with more real authority than her nominal superior despite a lack of formal authority.\(^4\)

Our model also implicitly prevents the decisionmaker from taking other steps to wrest surplus

\(^3\)Our analysis is completely unchanged if the rate at which quality is lost as a result of shifts away from \(y_D\) is greater than \(\lambda'_{DM} (y_D^*)\), because in this case the decisionmaker won’t alter \(b^*_D = (y^*, q^*)\).

\(^4\)This implication lends support to Niskanen’s (1971) assumption that budget-maximizing bu-
from the monopolist. Specifically, we assume that the decisionmaker cannot go back to the developer and ask her to create something different, and he cannot credibly commit ex-ante to reject certain proposals that are better than his best outside option. While strong, these assumptions seem natural in political contexts. Decisionmakers, be they Presidents, legislators, or senior bureaucrats, by definition have the final say in policymaking, and generally lack the ability to tie their own hands ex ante. Often, they face formal and informal constraints that make them less patient than policy developers, including statutory deadlines, finite tenures, and the fleeting nature of “policy windows” (Kingdon 1995). And policy developers—be they politicians’ nominal subordinates or independent actors like lobbyists—are generally free to generate policy alternatives before the process concludes.

Nevertheless, in some empirical contexts decisionmakers may possess commitment power that enables them to wrest some of the surplus for themselves. For example, legislators can delegate decisionmaking authority over interest-group proposals to like-minded bureaucrats, while constraining the bureaucrats’ choices with statutory language that allows courts to strike down certain policies. After developing our model, we briefly consider a variant in which the decisionmaker can commit ex-ante to reject certain policies, even ones he would prefer over his best outside option.

**Assumptions about institutional structure** As a starting point to study institutional design, our model assumes a specific “original arrangement”—a developer with preferences distinct from a decisionmaker has expertise, and the decisionmaker has only limited ways of influencing her. This approach is common in the bureaucratic politics literature; for example, Banks (1989), Gailmard (2002), and Gailmard and Patty (2013b) examine how decisionmakers can manage such agents by bureaucrats control the budgetary agenda by virtue of their expertise. Banks’s (1989) transferable information model is the canonical microfoundation for Niskanen’s assumption; our model provides an alternative. In our setting Niskanen’s “budget” would be the ideological dimension (over which players disagree), and “quality” would be the bureaucrat’s efforts to improve the associated program. Like Banks (1989) the bureaucrat’s real authority over the politician is substantial but not unlimited.
collecting independent information. However, other scholars–e.g., Banks and Weingast (1992), and Gailmard and Patty (2012)–analyze the fundamental design of bureaucracies. In the context of our model, it is reasonable to ask why the decisionmaker doesn’t just alter the original arrangement–why not instead choose a developer who shares his preferences, and/or deprive a non-aligned developer of resources for policy development?

The justification for our approach is two-fold. First, in many empirical settings decisionmakers cannot freely alter these features. For example, in Japan in the 1960s the tremendous power of the economic bureaucracy relative to the Diet (legislature) was inherited from a post-war occupation in which American forces reinforced the bureaucracy’s power at the expense of Japanese politicians, who were seen as being potentially dangerous (Johnson 1982). In the context of bureaucracies, staff and institutional structures are typically inherited from previous administrations, and a full organizational overhaul is often politically or legally impossible (Moe 1985, Carpenter and Krause 2014). And in the context of lobbying, outside groups have independent policy development capacity and are not reliant on politicians for resources. Nor can they be prohibited from offering policy alternatives–for example, although bills typically must be proposed by members of a legislature, there is nothing to stop members from proposing bills drafted by interest groups (Kroeger 2016).

Second, several scholars have shown that under certain conditions a principal may benefit from the expertise of non-aligned agents, and even design bureaucratic institutions to recruit and insulate them (Bendor and Meirowitz 2004, Gailmard and Patty 2007, Bubb and Warren 2014, Turner 2017). While the informational assumptions of these works differ substantially from ours, this phenomenon can also occur in our setting, particularly when the institutional responses that we analyze are available. A comprehensive analysis of these questions is beyond the scope of our paper, but we note that if the decisionmaker could choose the preferences of both the monopolist and a counterbalancing delegatee to select policy, he would choose them to be extreme in opposite directions. The same is true if he could choose the preferences of the competing policy developers (Hirsch and Shotts 2015).
Internal Capacity

We now analyze how the decisionmaker can rein in the monopolist. In informational models, one way that a decisionmaker can manage agency problems is by acquiring independent information (see, e.g., Gailmard 2002, Gailmard and Patty 2013b). In our policy-development framework, we explore this idea by analyzing a model in which the decisionmaker or his staff can independently produce high-quality policies. This process has two stages. First, the decisionmaker can invest up front at fixed cost \( k > 0 \) to establish foundational organizational capacity. Next, the decisionmaker can use this capacity to develop a policy if he is dissatisfied with the developer’s proposal; doing so entails paying a cost \( c_{DM}(q) \) satisfying the same assumptions as the developer’s cost \( c_D(q) \).

Quality is policy-specific, so if the developer and decisionmaker develop different policies, \( y_D \neq y_{DM} \), the decisionmaker doesn’t benefit from the developer’s efforts. We also assume investments are non-cumulative if they develop the same policy \( y_D = y_{DM} \). The game proceeds as follows. [1] The decisionmaker decides whether to establish capacity. [2] The developer crafts a policy \( b_D = (y_D, q_D) \). [3] If he established capacity, the decisionmaker decides whether to craft an alternative \( b_{DM} = (y_{DM}, q_{DM}) \). [4] The decisionmaker enacts \( b_D, b_{DM} \), or any zero-quality policy \((y, 0)\).

We first characterize the actors’ behavior after the decisionmaker has established capacity. The key question is whether the developer, in stage 2, will develop a policy that is sufficiently appealing to preempt the decisionmaker from developing his own policy. If the decisionmaker develops a policy, it will be at his own ideal point, \( x_{DM} = 0 \), with quality \( q_{DM}^* \) that equates his marginal benefit and marginal cost of quality. This determines the utility, which we denote as \( s^* \), that the developer’s policy must give the decisionmaker if she wishes to preempt.\(^5\) If the decisionmaker establishes capacity and the developer is close to him \((x_D \text{ less than a cutpoint } \tilde{x}_D \text{ defined in the appendix})\) then she won’t preempt, because she benefits from quality that the decisionmaker generates and preempting requires costly effort. But if the developer is farther away from the decisionmaker, she

\(^5\)Specifically, \( s^* = q_{DM}^* - c_{DM}(q_{DM}^*) \) and \( c_{DM}(q_{DM}^*) = 1 \).
would be quite dissatisfied with the policy that the decisionmaker would develop, so she preempts, giving him utility at least as large as $s^*$. The left panel of Figure 2 depicts an equilibrium where the decisionmaker establishes capacity and the developer preempts. The optimal preemption policy $y^*_{preempt}$ satisfies a first order condition, $c'_D (\lambda_{DM} (y_D) + s^*) - 1 = \frac{\lambda_D (x_D - y_D)}{\lambda_{DM} (y_D)}$, balancing ideological benefits against the costs of producing enough quality to get the decisionmaker to adopt it.

![Figure 2](image)

**Figure 2: Internal Capacity.** The left panel depicts an equilibrium where the decisionmaker establishes capacity and the developer preempts. Shared parameters are identical to Figure 1. The decisionmaker’s costs are $c_{DM}(q) = .685q^2$ and $s^* \approx 0.365$. The equilibrium policy is $(y^*_{preempt}, q^*_{preempt}) \approx (.444, .562)$. Policy absent internal capacity is depicted with a $\circ$. The right panel describes equilibria as a function of the developer’s ideal point ($x_D$) and the decisionmaker’s capacity costs ($k$).

We next analyze the decisionmaker’s decision about whether to establish capacity. If the decisionmaker is sufficiently aligned with the developer to prefer her unconstrained best policy ($x_D, q_0$) to developing something himself, then he does not establish capacity; he anticipates that capacity would either have no effect on the outcome, or induce costly free-riding. However, if the decisionmaker and developer are not very closely aligned, then the decisionmaker anticipates that using his own capacity will yield the same utility $s^*$ that he could achieve absent the developer—either the prospect of the decisionmaker’s policy development will deter the developer, or she will preempt by crafting a policy...
that offers him exactly the same utility. Finally, if the decisionmaker does not establish capacity, his utility is the same as in the baseline model: strictly positive if the developer is closely-aligned with him and zero if she is not closely aligned. The decisionmaker thus establishes capacity if and only if the cost $k$ of doing so is less than

$$k(x_D) \equiv (1_{x_D < \bar{x}_D} s^* + 1_{x_D \geq \bar{x}_D} \max\{q_0 - \lambda_{DM}(x_D), s^*\}) - \max\{q_0 - \lambda_{DM}(x_D), 0\}.$$ 

We now summarize these results and illustrate them in the right hand panel of Figure 2.

**Proposition 2 (Internal capacity)** The equilibrium depends on the developer’s ideal point and the decisionmaker’s cost of establishing capacity.

1. **(No capacity)** If $k > k(x_D)$, the decisionmaker does not establish capacity, and outcomes are the same as in the baseline model.

2. **(Capacity and development)** If $k \leq k(x_D)$ and $x_D < \bar{x}_D$ the decisionmaker establishes capacity and uses it to develop policy.

3. **(Capacity and preemption)** If $k \leq k(x_D)$ and $x_D \geq \bar{x}_D$ the decisionmaker establishes capacity, but the developer preempts with policy $y^*_{\text{preempt}}(x_D)$ and enough quality to give the decisionmaker utility exactly equal to $s^*$.

Next we analyze how capacity affects the actors’ utilities.

**Proposition 3 (Effect of capacity)** If the cost of establishing capacity decreases from $k_2 > k(x_D)$ to $k_1 < k(x_D)$, the decisionmaker establishes capacity and strictly benefits from doing so. For the developer, there is a cutpoint $\bar{x}_D \in [0, \bar{x}_D)$. If the developer is sufficiently close to the decisionmaker ($x_D < \bar{x}_D$), she benefits from the decisionmaker’s capacity. Otherwise she is worse off.

The reasoning behind this result is straightforward. The decisionmaker benefits when he establishes capacity, because he either develops a high-quality policy or induces the developer to develop something more-appealing. If the developer is very ideologically close to the decisionmaker, she benefits when the decisionmaker establishes capacity and develops a high-quality policy himself. However,
if the developer is sufficiently far away \((x_D > \bar{x}_D)\) then her ideological rents from monopoly outweigh her cost savings from relying on the decisionmaker for policy development. In this case, the decisionmaker’s internal capacity either forces the developer to accept his less-appealing policy or to work harder to preempt it; hence she is worse off.

We now illustrate how reductions in the internal capacity of a decisionmaking institution can benefit noncentrist policy developers by increasing their ability to exert informal agenda power.

**Term limits and state legislatures** Across the United States, there is enormous variation in the professionalization of state legislatures—some are full of career politicians, whereas others have short-term part-time citizen-legislators. Because it takes years to acquire policymaking expertise, scholars have expressed concerns that term limits weaken legislative capacity. In the words of Polsby (1993), term limits have the potential to “create turbulence in congressional organization and reduce the number of experienced members having independent knowledge of policy,” and as a consequence “strengthen the dependence of members on interest groups.”

In his comprehensive study of state legislatures, Kousser (2005) develops a model in which legislators allocate their time between developing policy and seeking re-election. Using the model, Kousser formalizes the premise of Polsby’s argument that term-limited legislators are less motivated to devote themselves to policy innovation. However, Kousser’s model cannot speak directly to Polsby’s conclusion about the behavior of interest groups, because it doesn’t characterize incentives for other actors who may also develop policies. Our model, in contrast, describes how extra-legislative policy developers respond when term limits reduce intra-legislative capacity.

The most natural way to apply our model is to have the decisionmaker represent the key legislative actor on a particular issue, whether it be the majority party leader, a committee chair, or the median. The developer is an external actor that can develop proposals, e.g., the governor or an interest group. Kousser’s reasoning suggests that term limits effectively raise the cost of establishing internal capacity by reducing the expected time horizon over which the capacity can be used. Our model
then predicts that, as feared by Polsby, an external policy developer will step in and fill the gap—this effect is illustrated in the right panel of Figure 2. This is consistent with empirical findings that term limits reduce the power of legislatures and increase the power of governors and interest groups (Moncrief and Thompson 2001, Carey et. al. 2006).

As an example of a group that can benefit from state legislators’ diminished internal capacity, consider the American Legislative Exchange Council (ALEC), a corporate-funded non-profit organization that promotes “free markets and limited government.” ALEC drafts detailed legislative language on complicated policy issues and has a substantial impact, as state legislatures enact around 200 ALEC-inspired bills each year.\(^6\) Effectively, what ALEC does is to subsidize costs of policy development, but only on a specific set of carefully chosen legislative proposals. Hertel-Fernandez (2014) finds that low-capacity state legislatures rely on ALEC and Kroeger (2016) finds that Republicans introduce more ALEC bills in legislatures with term limits.

Existing work (Hall and Deardorff 2006) paints a sanguine picture of “subsidy lobbying” by groups like ALEC. Despite some distortions in policy, Hall and Deardorff argue that subsidies mainly “enable legislators to do a better job as representatives” by “assist[ing] natural allies in achieving their own, coincident objectives.” However, to reach this conclusion, Hall and Deardorff develop a model in which the set of available policies a legislator can work on is exogenous—thus, they effectively assume that a lobbyist can only help a legislator achieve goals that he wants to achieve anyway.

Our model reaches a very different conclusion because it allows for the more realistic possibility that an interest group can choose from a range of policy options that are more or less reflective of a legislator’s interests. Indeed, the ability to craft policies that diverge from the decisionmaker’s preferred ideological outcome is the foundation of the policy developer’s informal agenda power. Thus, our interpretation of the consequences of subsidy lobbying in states where term limits have reduced legislatures’ internal capacity is much less optimistic: Proposition 3 predicts that term limits

will make legislators worse off if it becomes prohibitively costly to invest in establishing legislative expertise. Moreover, our model predicts that noncentrist groups like ALEC will reap large rewards by stepping into the gap with policies that promote their own ideological agendas. This prediction is normatively troubling if legislators are better-aligned with voters’ interests than lobbying groups.

However, this pessimistic implication of our model does not apply universally, for two reasons. First, in legislatures with substantial institutional policy-development capacity, e.g., by expert staff, our model predicts that term limits have a smaller effect, which comports with Kousser’s (2006) empirical findings. Second, the pessimistic implication is limited to situations in which the interest group environment is so asymmetric that one group can act as a monopolist, which is essentially a scenario of client politics (Wilson 1989). As we show later, competition between policy developers can produce benefits for decisionmakers, so our model’s predictions are much more optimistic when interest groups are active on opposite sides of an issue.

**Delegation**

Our second extension is a model in which the decisionmaker can delegate decisionmaking authority to an agent. Throughout the rest of the paper we focus on specific parametric forms: all actors have quadratic preferences and the developer’s cost function is linear, \( c_D(q) = \alpha_D q \), with \( \alpha_D > 2 \). This simplifies the analysis in several ways, including that the developer will not develop quality for its own sake. To analyze delegation, we add an initial stage in which the decisionmaker selects an agent with any ideal point \( x_A \in \mathbb{R} \) to choose the final policy, or retains authority himself (\( x_A = x_{DM} = 0 \)). The game proceeds as follows. [1] The decisionmaker chooses the agent’s ideal point \( x_A \). [2] The developer crafts a policy \( b_D = (y_D, q_D) \). [3] The agent enacts \( b_D \) or any zero-quality policy \((y, 0)\).

We first characterize the developer’s optimal policy given the agent’s ideal point \( x_A \). Because...
the agent can adopt his own ideal point with zero quality, the developer must endow a policy at ideological location $y_D$ with quality at least equal to $(y_D - x_A)^2$ to persuade the agent to adopt it. The developer’s ideological utility from such a policy is $-(y_D - x_D)^2$, her cost of producing the quality is $\alpha_D (y_D - x_A)^2$, and her benefit from that quality is $(y_D - x_A)^2$. Thus, her overall utility from developing the minimum-quality acceptable policy at ideological location $y_D$ is

$$-(y_D - x_D)^2 - (\alpha_D - 1)(y_D - x_A)^2.$$ 

The first order condition yields the optimal ideology and quality for the developer to produce:

$$y^*_D(x_A) = \frac{1}{\alpha_D} x_D + \left(1 - \frac{1}{\alpha_D}\right) x_A \quad \text{and} \quad q^*_D(x_A) = \left(\frac{x_D - x_A}{\alpha_D}\right)^2. \quad (2)$$

The ideological location of the developer’s policy is thus a convex combination of the developer and agent’s ideal points, weighted by $\frac{1}{\alpha_D}$.

We now consider the decisionmaker’s choice of an agent. The decisionmaker expects that an agent at $x_A$ will induce the developer to craft a policy that gives him utility equal to

$$s^*(x_A) \equiv q^*_D(x_A) - (y^*_D(x_A) - 0)^2 = \left(\frac{2}{\alpha_D} - 1\right) x^2_A - \frac{2x_A x_D}{\alpha_D}. \quad (3)$$

The decisionmaker will therefore choose an agent who maximizes Equation 3. Figure 3 depicts an example of the optimal agent $x^*_A$ and resulting policy outcome $(y^*_A, q^*_A)$.

From Equation 3 we see that the decisionmaker will never choose an agent who shares the developer’s policy leanings; for any $x_A > 0$ he can do better by delegating to an agent at $-x_A < 0$. This is intuitive—the best use of the agent is to *counterbalance* the developer’s ideological preferences. Taking the first order condition yields the ideal point of the optimal agent, which is $x^*_A = -\frac{x_D}{\alpha_D - 2}$.

The tradeoffs underlying this choice can be seen in Equation 2: a more-extreme counterbalancing agent forces the developer to craft a higher-quality policy, but an agent who is too extreme will pull policy so far from the decisionmaker’s ideal point that the added quality will be insufficient to outweigh the ideological losses. Using the above results we now summarize the equilibrium.
Figure 3: Delegation. Preferences are identical to previous figures; the developer’s cost of producing quality is \( c_D(q) = 4q \). The optimal agent is \( x_A^* = -0.5 \). The equilibrium policy is \( y_{agent}^* = -0.125 \), \( q_{agent}^* = 0.141 \), and equilibrium policy absent delegation is depicted with a \( \circ \).

**Proposition 4 (Delegation)**

1. The decisionmaker’s optimal agent is \( x_A^* = -\frac{x_D}{\alpha_D-2} \).

2. The equilibrium policy outcome is \( y_{agent}^* = -\frac{x_D}{\alpha_D(\alpha_D-2)} \) with quality \( q_{agent}^* = \frac{x_D^2}{\alpha_D^2} \left( \frac{\alpha_D-1}{\alpha_D-2} \right)^2 \).

3. The decisionmaker’s expected utility is \( \frac{x_D^2}{\alpha_D(\alpha_D-2)} > 0 \).

This proposition allows us to analyze how delegation affects the ideology and quality of policies, relative the baseline model in which \( y^* = \frac{x_D}{\alpha_D} \) and \( q^* = \left( \frac{x_D}{\alpha_D} \right)^2 \). Delegation typically results in a more-moderate ideological outcome \( (|y_{agent}^*| < |y^*| \iff \alpha_D > 3) \), because the optimal counterbalancing agent pulls policy away from the developer and closer to the decisionmaker. Delegation also results in a higher-quality policy. Combining these two effects yields a simple but important result: the ability to give up his decisionmaking authority always strictly benefits the decisionmaker.

Somewhat surprisingly, part 3 of the proposition implies that the decisionmaker benefits more from delegation when the developer is more extreme (i.e., a higher \( x_D \)). Intuitively, a more extreme developer is more willing to make quality investments to gain ideological concessions. When she is a monopolist, she extracts all of the gains for herself. Delegation allows the decisionmaker to get ahold of some of the gains and benefit from the developer’s greater motivation.
The most important takeaway is actually the simplest one: the optimal agent is a counterbalancing one, on the opposite side of the decisionmaker from the developer. This result also holds for more general utility and cost functions. It resonates with Moe’s (1985) argument that presidents politicize the bureaucracy with appointees who share their views, as well as Bawn’s (1995) argument that the optimal agency is typically at the ideal point of the political coalition that created it. However, our result actually goes further. If bureaucratic appointees are not simply creating policy but also selecting among policies proposed by powerful interest groups, the best appointees are not clones of the decisionmaker; rather, they are people who can counterbalance those powerful groups.\(^8\)

**Financial Regulation** Many critics argue that financial regulation in the U.S. is handled by captured regulators who are biased in favor of the banking industry. For example, in the aftermath of the 2008 financial crisis, Massachusetts Senator Elizabeth Warren criticized the New York Federal Reserve, asserting that “regulators care more about protecting big banks from accountability than they do about protecting the American people from risky and illegal behavior on Wall Street.”\(^9\)

Counterintuitively, however, the extant theoretical work suggests that this state of affairs is

\(^8\)Several scholars uncover similar findings in related and concurrently developed work. Tai (2013) analyzes a hard-information model in which a principal delegates to an agent who holds a biased researcher to a high standard of proof. Warren (2012), Jo and Rothenberg (2014), and Turner (2017) analyze 3-level bureaucratic hierarchies in which a principal has or can appoint a supervisor who can counterbalance a biased subordinate. Our model is closest to Turner (2017), although his developer is effectively constrained to propose a policy at her ideal, and his supervisor acts as a veto player rather than a true delegee. More broadly, our model differs from the aforementioned works in that the developer (i) may not be a subordinate but rather an actor outside of government, and (ii) obtains informal authority via effort on policy development.

actually in the public’s interest. The essence of the argument is that banks possesses policy-relevant information, e.g., about consequences of regulatory rules, and can help less-informed regulators choose better policies. By favoring banks, biased regulators encourage them to truthfully reveal their information, thereby benefitting all parties. Dessein (2002) shows that a decisionmaker can improve information transmission by delegating to an agent who is biased in the direction of an informed party. McCarty (2013) develops a quality-based model in which the principal delegates to a pro-industry agency to encourage industry effort on self-regulation. Boehmke, Gailmard, and Patty (2005) make a related argument using a hard information model, and Gailmard and Patty (2013a) apply this model and provide rich case-study evidence that in the 1930s communication with the banking industry was facilitated by the fact the newly created Securities and Exchange Commission (SEC) was headed by a wealthy financier, Joseph P. Kennedy.\footnote{Although the substantive application differs, Bubb and Warren’s (2014) model of a 3-level bureaucratic hierarchy is also revelant. Applied to the present setting, their agent is the interest group, their reviewer is the regulator, and they too find that pro-industry regulators are optimal.}

Our model of delegation may also be applied to the choice of financial regulators. Congress and the President are the decisionmaker, and design an agency and appoint its head (the agent). The developer is the regulated industry, which has expertise that can be used to craft higher-quality policies. All actors prefer competently designed regulations over low-quality ones, but disagree on how strict the regulations should be. With this setup, the conclusion of our model is exactly the opposite of the extant theoretical literature, and concordant with the conventional wisdom: the optimal regulator is not a pro-industry insider but rather an anti-industry skeptic, who counterbalances banks and forces them to produce proposals that are better for the public. Because there is no public policy justification for creating a pro-industry agency in our model, the only possible explanation would have to be something outside it, such as political influence by the industry.

What accounts for the starkly differing conclusions between our model and previous models? The
answer lies in differing assumptions about the nature of the industry’s expertise. In many extant models, the industry’s information is transferable across policies\textsuperscript{11}; the industry thus worries that if it tries to push for its preferred policy, anti-industry regulators will instead implement something else that it strongly dislikes, which attenuates its willingness to acquire or share information. In contrast, in our model quality is policy-specific, so the industry’s effort on a proposal cannot be applied to policies elsewhere in the ideological spectrum. The industry tries to exploit this fact to exert informal agenda power, and an anti-industry regulator improves public welfare by demanding greater quality investments and making fewer ideological concessions.

Our analysis shows that a theory-guided assessment of the consequences of pro-industry regulators ultimately depends on the underlying nature of the industry’s expertise and investments in policy. Adjudicating this question requires careful quantitative and qualitative investigation beyond the scope of this paper. However, examples of both transferable and policy-specific investments are easy to identify. As noted by McCarty, one form of effort that is consistent with his model is adoption of transparent business practices; this is a component of industry self-regulation that also makes it easier for an agency to develop regulatory policies. However, other types of effort are more similar to our model. For example, firms may build an industry association and stock it with people who share their preferences. This association may craft detailed technical rules to implement the industry’s preferred level of regulation, and the industry can reach out to other groups to assemble a coalition in support of its approach. All of these types of effort are primarily useful for the industry’s preferred

\textsuperscript{11}Although their setup differs from the canonical informational framework, Bubb and Warren (2014) shares a key property: once produced, an agent’s information about a regulatory opportunity is expropriable by the decisionmaker, who can then choose any level of regulation. Somewhat differently, in Boehmke, Gailmard, and Patty’s model information may not be transferable, but a group that engages in activational lobbying cannot restrict the policies subsequently chosen. The group is thus similarly reluctant to share information with an anti-industry regulator.
approach, and not especially helpful for an agency that decides to implement a different policy.

Interestingly, conflicting evidence is present in Gailmard and Patty’s (2013a, 251-254) case study about the early years of the SEC. While the actual operation of the SEC provided evidence to support the argument that pro-industry regulators facilitated communication, the politics of the agency’s creation were more consistent with our model. President Roosevelt and most members of Congress initially wanted regulation to be handled by the progressive FTC to counterbalance the power of the financial industry. However, bankers vehemently opposed this idea, and ultimately the pro-industry SEC was established in a political compromise. Whether the politicians were initially right about the best regulators to protect the public remains an open question.

**Competition**

Our final extension is to add a second policy-developer, the *competitor*. Like the original developer and decisionmaker, the competitor values quality and has quadratic preferences. Her ideal point is the mirror-image of the original developer’s, $x_C = -x_D$. She faces a linear cost of producing quality, but her cost is higher than the developer’s, $\alpha_C \geq \alpha_D$, i.e., she lacks some of the developer’s resources for efficiently crafting high-quality policies.\(^{12}\) The game proceeds as follows. [1] The developer and competitor simultaneously craft policies $b_D = (y_D, q_D)$ and $b_C = (y_C, q_C)$. [2] The decisionmaker enacts $b_D, b_C,$ or any zero-quality policy $(y, 0)$.

The effect of competition is not ex ante obvious, and previous theories offer differing predictions.\(^{13}\) In our model, intuition suggests competing effects. A high-quality competitor policy $b_C$ could demotivate the developer, who values quality on the competitor’s policy and doesn’t want to work on

\(^{12}\)If a competitor is more efficient the model would still apply, just switching their labels.

\(^{13}\)It can be either beneficial or harmful to have an exogenous outside option (Bendor, Taylor, and Van Gaalen 1987) or bureaucratic redundancy (Ting 2003). Dewatripont and Tirole (1999) show that it’s useful to have non-policy-motivated effort-averse information-gatherers act as advocates. However, Moe (1989) forcefully argues that interest group competition leads to ineffective policies.
a policy $b_D$ that won’t be enacted. However, competition might benefit the decisionmaker by forcing
the developer to craft a more moderate proposal or invest more in quality.

At a technical level, the model with competition is an all-pay contest with spillovers (Siegel 2009; Baye, Kovenock, and de Vries 2012). Although our setup is simple and similar to previous sections, equilibrium analysis is much more complicated because there is no pure strategy equilibrium. In the
model, an actor’s quality investments are lost if her opponent’s policy is adopted, and the outcome is predictable once both proposals are known. Thus, a developer who knows her policy won’t be
enacted has a strict incentive either to develop something barely good enough to beat her competitor or to simply drop out of the contest and avoid paying the costs of developing a proposal.

To characterize the unique mixed strategy equilibrium we use results from Hirsch and Shotts (2015) and Hirsch (2015). An example is shown in Figure 4. The players mix over ideology and

![Figure 4: Competition. The competitor is at $x_C = -x_D$, and faces higher costs than the developer, $\alpha_C > \alpha_D$. The developer mixes over the policies on the blue curve. The competitor sometimes is inactive (depicted by a dot at the origin), and otherwise mixes over policies on the purple curve. The equilibrium policy in the baseline model is depicted with a •.](image)

quality of their policies, as well as the utility that their policies generate for the decisionmaker. The policies produced by the developer and the competitor are along the blue and purple curves, respectively. The developer always produces a policy that is better for the decisionmaker than $(0, 0)$. 

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The competitor’s mixed strategy involves sitting out some of the time, but any policy she produces is one that the decisionmaker prefers over \((0,0)\). The effects of competition are as follows.

**Proposition 5 (Competition)** The model with competition has a unique equilibrium.

1. The developer always produces a policy. Her policy is always more ideologically moderate than in the absence of competition.

2. If the competitor’s costs are the same as the developer’s \((\alpha_C = \alpha_D)\), they both always produce a policy and their strategies are symmetric (i.e., using the same distribution over ideological extremity and quality). Each actor’s policy is enacted with probability \(\frac{1}{2}\).

3. A competitor with a cost disadvantage relative to the developer \((\alpha_C > \alpha_D)\) mixes between producing a policy and sitting out. The policies she mixes over are (first order stochastically) more moderate and lower quality than the developer’s policies. The decisionmaker enacts the developer’s policy more than half of the time, but sometimes enacts the competitor’s policy.

4. Competition increases the decisionmaker’s utility and decreases the developer’s utility.

A key takeaway is that competition always benefits the decisionmaker—note that in Figure 4 the developer’s policy always lies above the decisionmaker’s indifference curve through the equilibrium policy in the baseline model. The main reason that competition is beneficial is that policy developers are ideologically motivated to invest in quality, in order to prevent each other’s policies (which they find ideologically-unappealing) from being enacted by the decisionmaker.

Two additional subtle aspects of competition are worth noting. First, the competitor does not have to be on a level playing field—i.e., with the same policy-development costs as the original developer—for the decisionmaker to benefit from competition.\(^{14}\) Second, the decisionmaker is better off with a competitor whose ideal point is \(x_C = -x_D\) than with a competitor at his own ideal point.\(^{15}\)

\(^{14}\)The basic pattern of results also doesn’t require ideological symmetry \((x_C = -x_E)\), just that the developer and competitor are on opposite sides of the decisionmaker (see Hirsch 2015).

\(^{15}\)This is shown in Hirsch and Shotts (2015) Proposition 4.
In fact, a competitor at $x_C = x_{DM} = 0$ is unwilling to pay the cost of developing a policy, so the decisionmaker doesn’t benefit from her presence. A competitor at $x_C = -x_D$, in contrast, is quite dissatisfied with the monopoly policy from the baseline model, and is willing to exert effort to craft a policy that the decisionmaker finds more appealing.

**Rulemaking procedures** We now apply our model to analyze how competing interest groups affect regulatory rulemaking, i.e., the process by which U.S. bureaucratic agencies write administrative law and make crucial decisions about how laws will be implemented. Two major extant theoretical perspectives on this topic are deck-stacking theories and information-acquisition theories.

Deck-stacking theories (McCubbins, Noll, and Weingast 1987, 1989) focus on battles between interest groups on either side of an issue, both at the legislative stage where administrative procedures are designed, and at the subsequent rulemaking stage in which an agency follows those procedures. Procedures are not neutral, but rather can be used to favor one group over another, so legislators may engage in *deck-stacking* to affect the outcomes of the rulemaking process. This can be accomplished by making it easier for a favored group to participate, e.g., by creating advisory panels or other institutions to advocate for them, or by making it more difficult for their opponents to participate. In contrast to deck-stacking theories, information-acquisition theories (Gilligan and Krehbiel 1989, Austen-Smith and Wright 1992, Krishna and Morgan 2001) typically allow for the existence of partially shared interests in policymaking and predict that a decisionmaker will be better-informed when receiving information from competing interest groups.

We now evaluate the extent to which deck-stacking theories, information-acquisition theories, and our model can account for two key empirical regularities in the politics of regulatory rulemaking.

The first regularity is that political decisionmakers often enact rules that facilitate broad participation in a wide range of rulemaking settings, e.g., the Administrative Procedures Act as characterized by McCubbins, Noll, and Weingast, or the Federal Advisory Committee Act as characterized by Balla and Wright (2001). This is straightforward to explain via informational theories, which
emphasize that competition yields more accurate information and thereby benefits decisionmakers. However, it is difficult to explain via deck-stacking theories because, as argued by Balla and Wright, “the deck-stacking hypothesis implies that representation is to be restricted to legislative winners.”

The second regularity is that when interest groups try to influence the design of rulemaking procedures, they do not try to facilitate participation by their opponents. Rather, they try to ensure that their opponents are excluded. This is straightforward to explain via deck-stacking theories, but is difficult to rationalize with standard informational models building on Crawford and Sobel (1982). In such models, lobbying by opposing experts is good for both the decisionmaker and the experts because it reduces the variance of policy outcomes. Thus, these models (e.g., Gilligan and Krehbiel 1989, Krishna and Morgan 2001) actually predict that an interest group wants the decisionmaker to also be lobbied by an ideological opponent.\(^16\)

Our model simultaneously fits both of these regularities. Proposition 5 shows that a decisionmaker always benefits from competition in policy development, i.e., he has an interest in facilitating broad participation. However, it also shows that a policy-development monopolist is hurt by competition—she has to work harder on a more moderate policy to be successful, and when she fails the outcome is something she finds ideologically-unappealing. The monopolist thus prefers to shut her opponents out of the rulemaking process.

Another new insight from our model is that the decisionmaker benefits from competition even when it is highly asymmetric. This result is of particular empirical relevance because asymmetric competition is quite common in regulatory politics, where concentrated business interests square

\(^{16}\)One informational model in which opposing groups don’t benefit from each other’s participation is Austen-Smith and Wright (1992), which uses foundations that differ dramatically from both Crawford and Sobel (1982) and our model. That model assumes away the possibility of shared interests in good policymaking because lobbyists’ preferences are state-independent, while our model includes shared interests but still yields the result that competing groups dislike competition.
off against dispersed interests like consumers or environmentalists. On many issues, firms have a natural advantage because they are more willing to pay fixed costs and more able to overcome collective action problems. Our model shows that competition benefits the decisionmaker even if rulemaking procedures cannot fully level the playing field between business and advocacy groups.

**Alternative Assumptions About Bargaining**

Although the decisionmaker in our model has formal authority to choose policy, the fact that quality is policy-specific implies that a policy-development monopolist has informal agenda power. In our discussion of the baseline model we argued that there are good reasons to model policy development and choice this way. However, it is worthwhile to explore the implications of other assumptions about the decisionmaker’s capabilities that may be more appropriate in some empirical settings.

One natural possibility is that the decisionmaker can demand that the developer craft a certain proposal \((y_D, q_D)\) by committing to *reject* any other policy she may develop; even ones that would be better than the decisionmaker’s best available alternative. In some sense, this assumption about bargaining is the polar opposite of our main model – it allows the decisionmaker to dictate how the benefits from policy development will be split. It does not give the decisionmaker unlimited power over the developer, however, because he cannot commit to implement something other than his best available alternative if he rejects the developer’s proposal.\(^\text{17}\)

We now discuss the intuition for how the model works under this alternative assumption; mathematical details are in the online Appendix. In particular, we analyze whether the institutional responses that enable a decisionmaker to counteract the developer’s informal agenda power in our main model are still useful if the decisionmaker can commit to demands.

In the baseline model, the decisionmaker effectively threatens to adopt \((0, 0)\) if the developer does not allow...\(^\text{17}\)

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\(^\text{17}\)If the decisionmaker could make such commitments, he could extract unbounded quality from the developer by threatening to otherwise implement an arbitrarily extreme policy.
not create a policy of his choosing. With linear policy development costs $c_D(q)$, the decisionmaker will optimally demand a policy with the same ideology $y^*$ as in the original model, but with enough quality to extract all the benefits of policy development for himself. In contrast to the main model, the possibility of policy development strictly benefits the decisionmaker.

Internal capacity is counterproductive for a decisionmaker who makes policy-development demands. If he establishes internal capacity, he cannot credibly threaten not to use it to improve his own policy in the event that he rejects the developer’s policy. This makes the threat of rejecting the developer’s policy less effective at extracting quality.\footnote{The decisionmaker may establish capacity and develop a policy. But because making demands absent capacity yields a higher decisionmaker utility than in Proposition 1, the range of cost parameters for which he establishes and uses capacity is smaller than in Proposition 2.}

In contrast, our results on delegation are largely unchanged by allowing whichever actor holds decisionmaking authority to commit to a demand. Should the decisionmaker delegate authority to an agent, the agent will demand a policy that leaves the developer no better off than with the agent’s ideal point and 0 quality. The resulting policy will be different than in the baseline model, but a counterbalancing agent’s demand will be better for the decisionmaker than the decisionmaker’s own demand, because the agent’s ideal point is worse for the developer than the decisionmaker’s ideal point. In fact, the optimal counterbalancing agent is more extreme than in our original model. The comparative statics for the optimal agent are similar to the ones that follow from Proposition 4.

**Conclusion**

In this paper, we have developed a theory in which a decisionmaker must rely on bureaucratic agencies or interest groups to design policy proposals. In situations where people have partially shared interests, everyone can benefit from the creation of high quality policies. However, if only one actor can develop policies, she can obtain informal agenda power by ensuring that the only
well-designed option is one that also promotes her own objectives.

We explore multiple institutional tools that a decisionmaker can use to mitigate the adverse consequences of policy-development monopoly. One approach is to establish internal capacity, in the form of personal expertise or specialized staff. Another approach is to restrain the monopolist by credibly threatening to implement an outcome that she dislikes unless she develops a high-quality alternative that promotes the decisionmaker’s objectives. This can be accomplished by delegating authority to an agent who counterbalances the monopolist. It can also be accomplished by fostering policy-development competition, e.g., by adopting administrative procedures that facilitate participation by interest groups with different visions for public policy.

A key assumption underpinning our model is that investments made by policy developers are policy-specific. Our model is not intended to supplant classical models in which information is transferable across policies; indeed, in many empirical contexts classical models are a better fit. However, in contexts where the product of an actor’s effort and expertise is tailored to a particular policy option, our model is more appropriate, and yields substantially different implications.

Recent work by Hirsch and Shotts (2012) showed that with policy-specific quality, open rather than closed rules are optimal for encouraging legislative committees to invest in expertise, a result that contrasts sharply with Gilligan and Krehbiel’s (1987) classic results on procedural choice with transferable information. Relatedly, Ting (2011) showed that a principal never wants to delegate to a bureaucrat who can invest in capacity that is targeted to a specific policy, a result that contrasts sharply with traditional spatial models of delegation (Bendor and Meirowitz 2004). Along with our results in this paper, these results suggest that a much more general dynamic is at play: when an expert’s investments are policy-specific rather than transferable, a decisionmaker can benefit from adopting institutions that make the expert’s life more difficult.

Our analysis demonstrates the power and flexibility of simple models of policy-specific investments, and can be extended in several directions. Although we have explored three important
institutional responses to policy-development monopoly, there are others that we have not analyzed, e.g., the use of budgets as a tool for controlling bureaucrats. Another possible extension is to examine tradeoffs or interactions between different institutional responses—for example, if a decisionmaker can either delegate to an agent or facilitate competition among policy developers, which approach or combination of approaches will best serve his interests?

Another topic worthy of further study is the politics of institutional choice. In our model, the policy-development monopolist dislikes all of the institutional responses we have discussed. Thus she and the decisionmaker have divergent preferences, not just over policy, but also over the design of policymaking institutions. A direct implication is that powerful bureaucracies and interest groups will often try to block adoption of these institutional responses.

Finally, we note that although we have applied our theory to modern, developed democracies, it also applies to countries in which decisionmakers lack institutional capacity and must rely on policy development by elites or business interests. For example, in ancient Athens, competing orators with different interests and visions for public policy crafted proposals and advocated them in front of the demos, who benefitted as a result of this competition (Ober 1989). In a very different context, our model sheds light on a key question in the political economy of development: why citizens choose populist leaders. The literature on electoral accountability suggests several explanations for populism: politicians may pander to citizens who misperceive their interests (Canes-Wrone, Herron, and Shotts 2001); voters who worry that politicians will be bought off by lobbyists may elect politicians who oppose the lobbyists (Besley and Coate 2001); and politicians may posture to show that they are not serving elites (Fox 2007; Acemoglu, Egorov, and Sonin 2013). Our model of delegation provides a different explanation: citizens may elect populist leaders to counterbalance the power of elites who hold a near-monopoly on resources for policy development.
References


Appendix

All formal proofs are in this appendix, to be posted online if our paper is published. We begin by establishing a general result on optimal policy development in our baseline model and our model of internal capacity.

Lemma 1 The developer’s optimal policy \((y^*_D, q^*_D)\) conditional on giving utility at least \(s \geq 0\) for the decisionmaker is unique, continuous in \(x_D\) and \(s\), and characterized as follows.

1. If \(c'_D (s + \lambda_{DM} (x_D)) < 1\), then \(y^*_D = x_D\) and \(q^*_D = q_0\), where \(q_0\) is the unique solution to \(c'_D (q_D) = 1\).

2. If \(c'_D (s + \lambda_{DM} (x_D)) \geq 1\), then \(y^*_D\) is the unique ideology in \([0, x_D]\) that solves

\[
\max_{y_D \in [0, x_D]} \left\{ (s + \lambda_{DM} (y_D)) - \lambda_D (x_D - y_D) - c_D (s + \lambda_{DM} (y_D)) \right\},
\]

and \(q^*_D = s + \lambda_{DM} (y^*_D)\).

Proof. A policy yields at least \(s\) for the decisionmaker i.f.f. \(q_D \geq s + \lambda_{DM} (|y_D|)\); call such a policy enactable. An optimal enactable policy \((y^*_D, q^*_D)\) thus satisfies

\[
(y^*_D, q^*_D) \in \arg \max_{(y_D, q_D) : q_D \geq s + \lambda_{DM} (|y_D|)} \{ q_D - \lambda_D (x_D - y_D) - c_D (q_D) \}
\]

We first argue that every enactable policy outside the compact set

\[
C (x_D, s) \equiv \{(y_D, q_D) : y_D \in [0, x_D] \text{ and } q_D = \max \{q_0, s + \lambda_{DM} (y_D)\}\}
\]

is strictly worse than some policy inside it; the developer’s maximization problem may thus be restricted to this set w.l.o.g., and a maximum exists. An enactable policy \((y_D, q_D)\) with \(y_D < 0\) is strictly worse than \((0, q_D)\) for the developer which is also enactable, and likewise \(y_D > x_D\) is strictly worse than \((x_D, q_D)\). Finally, an optimal \(q_D\) at each fixed \(y_D \in [0, x_D]\) maximizes \(q_D - c_D (q_D) - \lambda_D (x_D - y_D)\) s.t. \(q_D \geq s + \lambda_{DM} (y_D)\); this straightforwardly yields \(\max \{q_0, s + \lambda_{DM} (y_D)\}\) as the unique optimum by the strict convexity of \(c_D (\cdot)\).
We now characterize the optimum and show it is unique. First observe that no policy with \( y_D \in [0, x_D) \) and \( q_D > s + \lambda_{DM}(y_D) \) can be optimal because if \( q_D > s + \lambda_{DM}(y_D) \) the developer would be strictly better off proposing \( (y_D + \epsilon, q_D) \), which is enactable for sufficiently small \( \epsilon \). If condition (1) holds \( (c'_D(s + \lambda_{DM}(x_D)) < 1) \) then the unique optimal quality at each ideology \( y_D \in [0, x_D) \) is \( q_D = q_0 > s + \lambda_{DM}(y_D) \), but no such policy can be optimal by the preceding argument, and so the unique optimal policy must be \( (x_D, q_0) \). If condition (2) holds \( (c'_D(s + \lambda_{DM}(x_D)) \geq 1) \) then the unique optimal quality at ideology \( y_D = x_D \) is \( q_D = s + \lambda_{DM}(y_D) \), any optimal policy must satisfy \( q_D = s + \lambda_{DM}(y_D) \), and thus they must solve the restated maximization problem in condition (2).

The first two term represents the quality of the proposal, the second is the developer’s ideological loss, and the final one is her cost of developing quality. Uniqueness of \( y_D \) then follows from the fact that \( c'_D > 0 \) and \( c''_D \geq 0 \). It is interior, i.e., in \( (0, x_D) \), because \( \lambda'_{DM}(0) = 0 \) and \( c'_D(\lambda_{DM}(x_D)) > 1 \).

Last observe that the developer’s problem can be written as
\[
\max_{(y_D, q_D) \in C(x_D, s)} \{ f(y_D, q; x_D, s) \},
\]
where it is easily verified that \( f(\cdot) \) and \( C(\cdot) \) are continuous in \( (x_D, s) \). By the Theorem of the Maximum the maximizer \( (y_D^*, q_D^*) \) (already shown to be unique) is thus continuous in \( (x_D, s) \).

**Proof of Proposition 1** If the decisionmaker does not enact the developer’s policy, then the optimal policy for him to enact is \( (0, 0) \), which gives him utility 0. This yields the minimum level of utility, \( s = 0 \), that the developer must offer to the decisionmaker for a policy to be enactable. The developer must then choose both whether to develop an enactable policy, and which policy to develop if she does so. Lemma 1 characterizes the optimal enactable policy. Moreover, the developer will always find it weakly optimal to develop some enactable policy, since developing the enactable policy \( (0, 0) \) is costless and yields the same utility as developing no policy.

If \( c'_D(\lambda_{DM}(y_D)) < 1 \) (equivalently \( x_D < \hat{x}_D \)), the constraint of getting the decisionmaker’s approval is not binding. The developer’s optimal enactable policy is \( (x_D, q_D^*) \) from Lemma 1.1. Because \( c'_D(q_D^*) = 1 \) and \( c'_D(\lambda_{DM}(y_D)) \), the developer’s policy has enough quality so that the decisionmaker strictly prefers it over \( (0, 0) \).
If \( c_D (\lambda_{DM} (y_D)) \geq 1 \) (equivalently \( x_D \geq \hat{x}_D \)), the constraint of getting the decisionmaker’s approval is binding. By Lemma 1.2, the optimal enactable policy has ideology \( y^* \) that solves
\[
\max_{y_D \in [0,x_D]} \lambda_{DM} (y_D) - \lambda_D (x_D - y_D) - c_D (\lambda_{DM} (y_D)).
\]
The optimum satisfies the first order condition
\[
c'_D (\lambda_{DM} (y_D)) - 1 = \frac{\lambda'_D (x_D - y_D)}{\lambda_{DM} (y_D)}.
\]
Equilibrium quality and actors’ utilities follow directly from the setup of the model. ■

**Proof of Proposition 2** We first characterize the developer’s optimal behavior when the decisionmaker has established capacity. We say that the developer preempts when she develops a policy that the decisionmaker is willing to enact in lieu of using his own capacity, call any such policy enactable, and show that the developer preempts if \( x_D \) is greater than a finite cutpoint \( \tilde{x}_D \geq 0 \).

Declining to preempt results in policy outcome \((0,q_{DM}^*)\) where \( q_{DM}^* \) is the unique solution to \( c'_D (q_{DM}) = 1 \), and yields utility \( q_{DM}^* - \lambda_D (x_D) \) for the developer. Alternatively, a policy \((y_D,q_D)\) is enactable i.f.f. \( q_D - \lambda_{DM} (y_D) \geq s^* \) where \( s^* = q_{DM}^* - c_{DM} (q_{DM}^*) \); preempting yields a gain of
\[
(q_D - q_{DM}^*) - c_D (q_D) + (\lambda_D (x_D) - \lambda_D (|x_D - y_D|)).
\]
Now fix any enactable \((y_D,q_D)\) with \( y_D > 0 \); because \( \lambda_D (\cdot) \) is strictly convex and \( \lim_{z \to -\infty} \lambda_D (z) = \infty \), the gain is strictly increasing over \( x_D \geq y_D \) and approaches \( \infty \). This yields the desired result. First, for any fixed enactable policy \((y_D,q_D)\) some sufficiently extreme developer strictly prefers to preempt with it (but may optimally preempt with something else). Second, if a developer \( x_D \) optimally preempts with \((y_D^*,q_D^*)\) (with \( y_D^* \in (0,x_D] \) by Lemma 1), then any developer \( \hat{x}_D > x_D \) also strictly prefers to preempt with that same policy (but may optimally preempt with something else).

Last we characterize the decisionmaker’s cost cutpoint \( k (x_D) \) for establishing internal capacity and make observations about equilibrium behavior. From Proposition 1 the decisionmaker’s utility absent capacity is \( \max \{ q_0 - \lambda_{DM} (x_D), 0 \} \). Applying the preceding analysis and Lemma 1 the
decisionmaker’s utility after establishing capacity is \( s^* \) if \( x_D \leq \bar{x}_D \) (since the developer will not preempt) and \( \max \{ q_0 - \lambda_{DM} (x_D), s^* \} \) otherwise (since the developer will optimally preempt, and the constraint of gaining the decisionmaker’s approval may or may not be binding). Comparing the decisionmaker’s utility with and without capacity we see that it is optimal to establish capacity iff

\[
k \leq k (x_D) \equiv \begin{cases} 
    s^* - \max \{ q_0 - \lambda_{DM} (x_D), 0 \} & \text{if } x_D < \bar{x}_D \\
    \max \{ q_0 - \lambda_{DM} (x_D), s^* \} - \max \{ q_0 - \lambda_{DM} (x_D), 0 \} & \text{otherwise}
\end{cases}
\]

It is easily verified that a necessary and sufficient condition for establishing capacity to ever be optimal (\( k (x_D) > 0 \)) is that \( s^* > q_0 - \lambda_{DM} (x_D) \), i.e., that the preemption constraint is binding. For such values of \( x_D \) the cutpoint reduces to \( k (x_D) = s^* - \max \{ q_0 - \lambda_{DM} (x_D), 0 \} \), the developer’s optimal preemption policy \( y^*_{\text{preempt}} (x_D) \) leaves the decisionmaker with utility exactly equal to \( s^* \), and it is as characterized in Lemma 1.2.

As an aside, before moving on to our next result we briefly make two additional observations. First, note that \( k (x_D) < 0 \) for any \( x_D \geq \bar{x}_D \) such that \( s^* < q_0 - \lambda_{DM} (x_D) \), reflecting the fact that internal capacity may induce free-riding. Second, for values of \( x_D \) such that \( s^* > q_0 - \lambda_{DM} (x_D) \), the cutpoint \( k (x_D) \) is monotonically increasing, implying that for \( k \in (0, s^*) \) the decisionmaker establishes internal capacity i.f.f. the developer is sufficiently extreme.

**Proof of Proposition 3** The fact that the decisionmaker establishes capacity at cost \( k_2 \) but not at cost \( k_1 \), and strictly benefits from doing so, follows immediately from \( k_1 < k (x_D) < k_2 \).

We now characterize when the developer benefits from the decisionmaker’s capacity. The developer’s utility absent capacity is \( \max_{q_D \geq \lambda_{DM} (|y_D|)} \{ f (y_D, q_D) \} \) where \( f (y_D, q_D) = q_D - \lambda_D (|x_D - y_D|) - c_D (q_D) \). Her utility with capacity is

\[
\max \left\{ \max_{q_D \geq s^* + \lambda_{DM} (|y_D|)} \{ f (y_D, q_D) \}, q^*_D = \lambda_D (x_D) \right\}.
\]

Clearly \( \max_{q_D \geq \lambda_{DM} (|y_D|)} \{ f (y_D, q_D) \} \geq \max_{q_D \geq s^* + \lambda_{DM} (|y_D|)} \{ f (y_D, q_D) \} \) (the latter is the developer’s utility from optimal preemption), since the latter maximizes \( f (y_D, q_D) \) over a strictly smaller set. For the
developer to benefit thus requires that \( x_D < \bar{x}_D \) (the developer does not preempt), and she benefits i.f.f. \( (q_{DM}^* - \lambda_D(x_D)) - \max_{q_D \geq \lambda_D(|y_D|)} \{ f(y_D, q_D) \} \geq 0 \).

We now argue that the set of developers who benefit is described by a cutpoint \( \bar{x}_D \). A developer with \( x_D \) would optimally develop \((y_D^*, q_D^*)\) with \( q_D^* \geq \lambda_D(|y_D|) \) and \( y_D^* \in [0, x_D] \) if the decisionmaker lacks capacity, and is therefore harmed by capacity i.f.f.

\[
(q_D^* - q_{DM}^*) - c_D(q_D^*) + (\lambda_D(x_D) - \lambda_D(x_D - y_D^*)) > 0.
\]

By the convexity of \( \lambda_D(\cdot) \), any developer with \( x_D' > x_D \) strictly prefers the decisionmaker lacking capacity and developing \((y_D^*, q_D^*)\) to the decisionmaker having capacity (but will optimally develop something else absent capacity), and is therefore also harmed by capacity.

As an aside, from the proof of Proposition 2, for the decisionmaker to ever establish capacity requires \( k(x_D) > 0 \iff s^* > q_0 - \lambda_D M(x_D) \). The set of developers who might benefit from a decrease in decisionmaker’s capacity costs is thus nonempty i.f.f. \( \tilde{x}_D^c < \bar{x}_D \), where \( s^* = q_0 - \lambda_D M(\tilde{x}_D^c) \).

**Proof of Proposition 4** The main text provides most of the argument, which we retrace here, adding a few details. Given an agent with ideal point \( x_A < x_D \), by the same reasoning as in Lemma 1 the developer doesn’t want to develop an enactable proposal \( y_D < x_A \) or \( y_D > x_D \), and for \( y_D \in [x_A, x_D] \) quality must be \( q_D = (y_D - x_A)^2 \) for an optimal enactable proposal.\(^{19}\) This holds with equality \( \forall x_D \), due to the linear cost \( c_D(q) = \alpha_D q \). The developer’s optimal bill solves

\[
\max_{y_D \in [x_A, x_D]} (y_D - x_A)^2 - (x_D - y_D)^2 - \alpha_D (y_D - x_A)^2.
\]

The first order condition for \( y_D \) is

\[
2y_D - 2x_A - 2y_D + 2x_D - 2\alpha_D y_D + 2\alpha_D x_A = 0
\]

so

\[
y_D^*(x_A) = \frac{1}{\alpha_D} x_D + \left( 1 - \frac{1}{\alpha_D} \right) x_A \quad \text{and} \quad q_D^*(x_A) = (y_D - x_A)^2 = \left( \frac{x_D - x_A}{\alpha_D} \right)^2.
\]

\(^{19}\)For \( x_A > x_D \) the analysis is similar. The decisionmaker would never delegate to such an agent.
The decisionmaker’s utility is

\[ s^* (x_A) \equiv q_D^* (x_A) - (y_D^* (x_A) - 0)^2 = \left( \frac{2}{\alpha_D} - 1 \right) x_A^2 - \frac{2x_A x_D}{\alpha_D}. \]

For Part 1 of the proposition, note that the first order condition for \( x_A \) is

\[ 2 \left( \frac{2}{\alpha_D} - 1 \right) x_A - \frac{2x_D}{\alpha_D} = 0 \]
\[ x_A^* = \frac{x_D}{\alpha_D - 2}. \]

For Part 2 of the proposition, we substitute into Equation 4 to get the equilibrium ideology and quality:

\[ y_{agent}^* = y_D^* (x_A^*) = \frac{x_D}{\alpha_D} + \left( 1 - \frac{1}{\alpha_D} \right) x_A^* = -\frac{x_D}{\alpha_D (\alpha_D - 2)} \]

and

\[ q_{agent}^* = q_D^* (x_A^*) = \left( \frac{x_D - x_A^*}{\alpha_D} \right)^2 = \frac{x_D^2}{\alpha_D^2} \left( \frac{\alpha_D - 1}{\alpha_D (\alpha_D - 2)} \right)^2. \]

For Part 3 of the Proposition, decisionmaker utility is

\[ - (y_D^* (x_A^*))^2 + q_D^* (x_A^*) = -\frac{x_D^2}{\alpha_D^2} \left( \frac{1}{\alpha_D - 2} \right)^2 + \frac{x_D^2}{\alpha_D^2} \left( \frac{\alpha_D - 1}{\alpha_D (\alpha_D - 2)} \right)^2 \]
\[ = \frac{x_D^2}{\alpha_D (\alpha_D - 2)} > 0. \]

**Proof of Proposition 5**  The competitive model is a special case of Hirsch (2015), henceforth referred to as H. In that paper several results are stated in terms of the players’ “engagement” in the contest, defined in H Proposition 2 for a player \( i \) to be \( \epsilon_i = \left( \frac{\alpha_i}{\alpha_{i-1}} \right)^{|x_i|} \). Section 6 also considers the special case of a “dominant” player \( k \), defined as \( |x_k| \geq |x_{-k}| \) and \( \alpha_k \leq \alpha_{-k} \) with at least one strict.

In the present paper it is clear that the developer is always weakly more engaged in the contest, and when \( \alpha_D < \alpha_C \) she is dominant in the aforementioned sense.

**Part 1.** H Corollary 3.1 implies that the developer always develops a proposal. That her proposals are more moderate with competition follows from properties of equilibrium restated here; the
developer produces a policy with score $s < s$ with probability 1, the optimal ideology at each such score is $F_C(s) \cdot \frac{\alpha_D}{\alpha_D}$ by H Lemma 1, and at each such score there is strictly positive probability the competitor produces a higher-score policy ($F_C(s) < 1$).

**Part 2.** Hirsch and Shotts (2015) Proposition 1 establishes that if $\alpha_C = \alpha_D$, the two actors use identical (symmetric) mixed strategies. Each wins with probability 1/2 due to symmetry.

**Part 3.** Results follow from H Corollary 6 describing the special case when one player (here the developer) is dominant. The corollary states that the dominant player is “score dominant,” meaning that $F_D(s) < F_C(s) \forall s \in [0, s]$. This implies both that $F_C(0) > 0$ (i.e. the competitor sometimes sits out), and that the developer wins the contest (i.e. develops a higher score policy) with probability $> \frac{1}{2}$. The corollary also states that the dominant player develops first-order stochastically more extreme policies. It is not directly stated that she also develops first-order stochastically higher quality policies, but this follows from a nearly identical argument as made therein about her greater extremism; a dominant player develops higher-quality policies at every score $s$, i.e., $q_{-k}(s) = s + (|y_{-k}^s(s)|)^2 = s + \left(\frac{x_{-k}}{\alpha_{-k}} F_k(s)\right)^2 > s + \left(\frac{x_k}{\alpha_k} F_{-k}(s)\right)^2 = s + (|y_k^s(s)|)^2 = q_k(s) \forall s$, which yields the desired result when combined with her score dominance.

**Part 4.** The decisionmaker’s utility under monopoly is 0; with competition the developer always develops a strictly positive score (i.e. utility) proposal (see Part 1). The expression for the decisionmaker’s utility is in H Proposition 4.3. The developer’s utility is $-\left(1 - \frac{1}{\alpha_D}\right)x_D^2 - (\alpha_D - 1)\bar{s}$ (see H Proposition 4.2); it is easily verified that first term is just the developer’s utility under monopoly, and the second term is strictly negative since $\bar{s} > 0$.

**Extension With Alternative Assumptions About Bargaining**

Here we consider a version of the model in which the decisionmaker has more bargaining power. Specifically, we assume that the decisionmaker can commit ex-ante to the set of policies he will accept (denoted $A$) and those he will reject (everything outside $A$). Importantly, in the event of rejection we assume that the decisionmaker must then make an optimal choice from the remaining
policies – he cannot commit *ex-ante* to implement something other than his best outside option. (This prevents the decisionmaker from being able to extract unbounded amounts of quality by threatening to otherwise enact a policy that is unboundedly extreme).

It is straightforward to see that strategies in which the decisionmaker commits to only accept policies that yield utility at least $s \geq 0$ will include an optimal one. Suppose some arbitrary acceptance set $A$ results in the developer producing $(\hat{y}_D, \hat{q}_D)$ yielding utility $\hat{s}$ – should the decisionmaker instead simply demand utility at least $\hat{s}$ the developer will optimally develop something at least this good since $(\hat{y}_D, \hat{q}_D)$ remains in the decisionmaker’s acceptance set. We shall henceforth refer to such a strategy by the decisionmaker as “demanding (at least) $s$” and say that a demand is acceptable if it is weakly optimal for the developer to produce a policy meeting the demand in response. In order to leverage our existing analysis we consider strategies of this form.\footnote{Functionally the game resembles a Romer-Rosenthal agenda setting game in which the decisionmaker makes offers of what the developer will produce, and the “status quo” is the best policy the decisionmaker can achieve on his own.}

Note that for the purposes of exposition in the main text, we discuss strategies of the form $A = \{ (y_D, q_D) \}$; that is, of demanding a specific policy. Naturally, demanding the exact policy that the developer would optimally produce in response to a utility demand of at least $s$ will yield the same outcome as demanding the utility level.

**General Analysis for All Model Variants**

To keep the analysis simple and unified across model variants, we henceforth assume that all actors have quadratic preferences, and the developer’s cost function is linear: $c_D(q) = \alpha_D q$. Applying Lemma 1, the developer’s optimal policy $(y_D^*, q_D^*)$ conditional on meeting a demand $s$ satisfies

$$ \arg \max_{y_D \in [0,x_D]} \left\{ - (x_D - y_D)^2 - (\alpha_D - 1) \left( s + (y_D - x_{DM})^2 \right) \right\}, $$
It is straightforward to show that $y_D' = \left(1 - \frac{1}{\alpha_D}\right)x_{DM} + \left(\frac{1}{\alpha_D}\right)x_D$ for any $s$ and $q_D'(s) = s + (y_D' - x_{DM})^2$. In words, given linear costs and preferences, the best way for the developer to meet any positive demand is to meet it with equality, using the same ideology regardless of the demand, and producing just enough quality to meet the demand.\textsuperscript{21} Substituting the optimum into the objective function, the developer’s utility from optimally meeting a demand of $s$ is:

$$- (x_D - x_{DM})^2 \left(1 - \frac{1}{\alpha_D}\right) - (\alpha_D - 1) s$$

(5)

Now let $u_{DM}^D$ denote the developer’s utility from what the decisionmaker will implement if she rejects the decisionmaker’s demand. The developer will optimally accept the demand by producing the optimal policy to meet it i.f.f. her utility from doing so (in equation 5) is at least as high as her utility from “declining” ($u_{DM}^D$). Since equation 5 is strictly (linearly) decreasing in $s$, the optimal acceptable demand $s^{\text{max}}$ for the decisionmaker to make is therefore the unique value satisfying this constraint with equality, i.e.,

$$s^{\text{max}} = -\frac{u_{DM}^D}{\alpha_D - 1} - \frac{(x_D - x_{DM})^2}{\alpha_D}$$

(6)

**Baseline**

In the baseline model, the decisionmaker must implement $(x_{DM}, 0)$ if he rejects the developer’s policy, so $u_{DM}^D = -(x_D - x_{DM})^2$. The optimal acceptable demand is then

$$s^{\text{max}} = \frac{(x_D - x_{DM})^2}{\alpha_D (\alpha_D - 1)} > 0.$$  

(7)

This is clearly better than making an unacceptable demand which yields 0; therefore $s^{\text{max}}$ is the optimal demand. Note that in contrast to Proposition 1 in the main text, a more extreme or skilled developer is good for the decisionmaker, because he can extract benefits using his commitment power.\textsuperscript{21}If cost were quadratic, the optimal ideology to meet the demand would move closer to the DM with higher demands.
**Internal Capacity**

We argue that in this variant of the model the decisionmaker will only invest in and use internal capacity if he intends not to make an acceptable demand. Intuitively, the argument is that establishing internal capacity weakens his bargaining power vis a vis the developer by effectively improving the “status quo” for both of them. The decisionmaker will thus establish (and use) internal capacity i.f.f. \( s^* - k \geq \frac{(x_D - x_{DM})^2}{a_D(a_D - 1)} \), where the values on the l.h.s. are as characterized in the main paper, and the r.h.s. is the decisionmaker’s utility in Equation 7 from making an optimal demand without internal capacity. When he establishes internal capacity, an optimal strategy for the decisionmaker is to commit to reject everything and use his capacity.

This argument depends on the particulars of the game sequence, which is assumed to be as follows.

[1] The decisionmaker decides whether to establish capacity. [2] The decisionmaker announces and commits to an acceptance set \( A \). [3] If the developer produces something in \( A \) it is automatically implemented; if she doesn’t, the decisionmaker moves again. [4] The decisionmaker chooses the best policy for himself (including one he now develops) other than the developer’s policy, which he has committed to reject.

Consider a strategy profile in which the decisionmaker establishes internal capacity at cost \( k \). Should the gameplay proceed with the decisionmaker making no demand or the developer rejecting his demand, the decisionmaker will create and implement a policy at ideological location 0 with quality \( q_{DM}^* \) such that \( c_{DM}'(q_{DM}^*) = 1 \), as in Proposition 2.2 in the main paper. This yields utility \( s^* \) for the decisionmaker and \( u_{DM}^D = -(x_D - x_{DM})^2 + q_{DM}^* \) for the developer.

It is now straightforward to see that the decisionmaker is strictly better off having no internal capacity and making the optimal acceptable demand rather than establishing capacity and making the optimal acceptable demand; establishing capacity only affects \( s_{\text{max}} \) by increasing \( u_{DM}^D \), and increasing \( u_{DM}^D \) decreases \( s_{\text{max}} \) (see equation 6). We may thus restrict attention to the strategy of either establishing internal capacity and making no demand, or not establishing internal capacity and
making the optimal acceptable demand. This yields the desired result, i.e., that the decisionmaker never establishes capacity with the goal of inducing the developer to develop a better policy.

**Delegation**

The delegation game closely parallels the baseline model. In the delegation game, a decisionmaker with ideal point at $x_{DM} = 0$ chooses an agent with ideal point $x_A \in \mathbb{R}$ to act as the decisionmaker in his place. Since the agent $A$ plays the same role as the decisionmaker in the baseline model, the agent will optimally demand utility for himself equal to $s^\text{max}_A = \frac{(x_D - x_A)^2}{\alpha_D (\alpha_D - 1)}$, and the resulting policy will be $y^*_D = \left(1 - \frac{1}{\alpha_D}\right)x_A + \left(\frac{1}{\alpha_D}\right)x_D$. The original decisionmaker’s utility from this outcome is then:

$$
- (x_{DM} - y^*_D)^2 + \left(s^\text{max}_A + (x_A - y^*_D)^2\right)
= - \left(1 - \frac{1}{\alpha_D}\right)x_A^2 - \frac{2x_Ax_D}{\alpha_D} + \frac{(x_D - x_A)^2}{\alpha_D (\alpha_D - 1)}.
$$

This is therefore his objective function when choosing $x_A$. Compared to our main delegation game (main text equation 3), the first two terms are identical while the third term is the extra benefit from fact that the agent uses his partial commitment power to extract more quality from the developer.

Now observe that the optimal agent is $< 0$, i.e., counterbalancing is optimal. To see this consider $x_A > 0$; then an agent at $-x_A$ yields an identical first term, a strictly positive second term, and a strictly larger third term (since he is further from $x_D > 0$). Next observe that the decisionmaker always prefers an agent strictly to the left of the one in Proposition 4.1, since the derivative of the new third term w.r.t. $x_A$ is $< 0$ when $x_A < 0 < x_D$. To characterize the optimum we now take the derivative w.r.t. $x_A$, which yields:

$$
- \left(1 - \frac{2}{\alpha_D}\right)x_A - \frac{x_D}{\alpha_D} - \frac{x_D - x_A}{\alpha_D (\alpha_D - 1)}.
$$

Note that this is linear in $x_A$. Setting equal to 0 and solving for $x_A$ yields the (sometimes well defined) optimum:

$$
x^*_A = -x_D \left(\frac{\alpha_D}{(\alpha_D - 2)(\alpha_D - 1) - 1}\right). \tag{8}
$$
When \((\alpha_D - 2)(\alpha_D - 1) \leq 1 \quad (\alpha_D \leq 2.62)\) and the denominator is not strictly positive, it is straightforward to verify that the derivative is strictly decreasing \(\forall x < 0\), implying that the optimal agent is unboundedly negative. Otherwise the optimal agent is as written in Equation 8. In either case it is easy to verify that the decisionmaker prefers an agent strictly to the left of \(-\frac{x_D}{\alpha_D - 2}\) (the optimal agent from Proposition 4.1 for our main model), and when finite the optimal agent ideal point satisfies the same comparative statics.