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 entrepreneurs with different preferences. We apply our model to a diverse set of contexts, including bureaucratic policymaking in Japan, 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 of handling the crisis and, as noted by Allison (1969), there were many mistakes 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 the President 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 Kennedy 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

[1] JCSM-844-62, "Recommendation for Execution of CINCLANT OPLANS 312 and 316."

[2] Memo CM-85-62, 2 November 1962.

missiles rather than taking the risks associated with an assault? Or 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. These policy developers include not just military leaders, but also civilian bureaucrats who design economic policies, and even business interests that play a major role in the creation of complicated regulatory policies. When policies are not neatly decomposable, but rather consist of complicated interactive components, a decisionmaker can't simply 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 formal 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, bombing, invasion, or a nuclear first strike. The quality component represents how well-crafted the strategy is–a matter that surely was salient to President Kennedy 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 2014), 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' 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 that is 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 crafts 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. While such strong commitments are theoretically possible for managers in firms, they are surely impossible for politicians in government, who have limited means of control, urgency to address specific policy issues, and short time horizons in office. Instead, the solution in political environments is to create *institutions* that effectively, if crudely, achieve the same end.

Our first main contribution is to show how the problem of problem of policy-development monopoly can be mitigated via 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 entrepreneur who disagrees with the original monopolist. 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 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), or delegating to the expert herself (Bendor and Meirowitz 2004).

Our second main contribution is to apply our series of models to a wide variety of different empirical contexts. In doing this, our goal is not to provide a full test of our model, as is typical in the applied formal theory literature, which has focused on derivation of 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 (Clarke and Primo 2012). As an example of policy-development monopoly, we analyze bureaucratic dominance of Japanese policymaking during the mid-20th century. When analyzing internal capacity, we show how term limits encourage U.S. 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

and financial services, 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 agency rulemaking processes.

Our analysis also demonstrates how complete-information spatial models with endogenous quality provide a tractable framework for analyzing a wide variety of institutional arrangements in the presence of informal agenda power. Our model's foundation is similar to several previous models of endogenous quality or valence 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; and Hitt, Volden, and Wiseman 2014). Here we show that this framework can be used to analyze several institutional features like internal capacity, delegation, and competition in a unified fashion. As we discuss later in this paper, variants of some of our results about institutional design do arise in a scattering of other models with very different foundations. However, in contrast to those models, our framework has a common set of assumptions and structures, is technically simple, and is therefore very accessible to applied researchers.

Baseline Model: Policy-Development Monopoly

We begin by introducing 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 entrepreneur, with ideological ideal points $x_D = 0$ and $x_E > 0$ respectively. Each actor $i \in \{D, E\}$ incurs strictly convex losses $\lambda_i(|x_i - y|)$ that depend on the distance $|x_i - y|$ between the policy y and her ideal policy x_i. We assume that the loss function satisfies $\lambda_i(0) = 0$ and $\lambda_i'(0) = 0$; thus, quadratic spatial preferences $\lambda_i(|x_i - y|) = (x_i - y)^2$ are a special case of our model. In addition, we assume that 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

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

We assume that only the entrepreneur can produce quality, and to do so she pays a cost $c_E(q)$, where $c_E(0) = 0$, $c'_E > 0$, and $c''_E \geq 0$. As in several previous models (Londregan 2000; Lax and Cameron 2007; Ting 2011; Hirsch and Shotts 2012, 2015; Hitt, Volden, and Wiseman 2014), we assume that quality is policy-specific, in the sense that if the entrepreneur crafts a policy (y_E, q_E) with $q_E > 0$, then any other ideological policy 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 a minimal amount of skill or effort.

Before analyzing the game, we briefly discuss a few characteristics of quality in our model. First, our model does not require that *every* feature of a policy that the entrepreneur considers to be high-quality is also high-quality from the perspective of the decisionmaker. Rather, all we need is that there are *some* types of quality that are valued by both actors, and can be improved via the monopolist's efforts. Examples include cost savings, efficient implementation, making a policy more appealing to voters, or reduction of variance of outcomes in a model with quadratic spatial preferences. Second, it is worth commenting on our assumption that quality is policy-specific. This assumption may be strong, but it is no stronger than the polar opposite assumption, i.e., information that is fully transferable across policies, which has been used in countless models building on Crawford and Sobel (1982) and Gilligan and Krehbiel (1987). Also, our results continue to hold if quality is partially-transferrable across policies, as long as it is not too transferable.[3]

The baseline model is quite simple, and proceeds as follows. **[1]** The entrepreneur crafts a policy $b_E = (y_E, q_E)$. **[2]** The decisionmaker enacts b_E or any zero-quality policy $(y, 0)$.

To solve the model, we first note that if the decisionmaker doesn't enact the entrepreneur's policy, he will enact his own ideal point with zero quality, $(0, 0)$, because this is his most-preferred zero-quality policy. Thus, the entrepreneur, when choosing which policy to develop, maximizes her utility

[3]Our analysis is completely unchanged if the rate at which quality is lost as a result of shifts away from y_E is greater than $\lambda'_D(x_E)$, because in this case the decisionmaker won't alter b_E.

subject to the constraint of producing enough quality to induce the decisionmaker to prefer b_E over $(0,0)$. Because the decisionmaker's utility from his own ideal point with zero quality is zero, this constraint implies that $q_E \geq \lambda_D(y_E)$. If the entrepreneur is close to the decisionmaker and faces a low marginal cost of producing quality, this constraint is not binding when she crafts a policy at her own ideal point. However, if the entrepreneur is farther away from the decisionmaker and her cost function for producing quality is sufficiently steep so that $c_E'(\lambda_D(x_E)) > 1$, the entrepreneur optimally satisfies the constraint with equality, and pays cost $c_E(\lambda_D(y_E))$. She also values quality for its own sake, so the net cost of developing the lowest-quality enactable policy at y_E is $c_E(\lambda_D(y_E)) - \lambda_D(y_E)$. The entrepreneur's ideological utility is $-\lambda_E(|x_E - y_E|)$, so her optimal proposal satisfies the following first order condition trading off costs against ideological benefits:

$$c_E'(\lambda_D(y_E)) - 1 = \frac{\lambda_E'(x_E - y_E)}{\lambda_D'(y_E)}. \tag{1}$$

Due to convexity of actors' cost and loss functions, a unique $y^* \in (0, x_E]$ is optimal. We summarize the above argument in our first proposition. Formal proofs are in the Supplemental Appendix.

Proposition 1 ***(Baseline)*** *If the entrepreneur is closely-aligned with the decisionmaker ($c_E'(\lambda_D(x_E)) < 1$) she crafts a policy at ideological location $y^* = x_E$ and the decisionmaker's utility is strictly positive. If the entrepreneur is not closely-aligned with the decisionmaker, she crafts a policy at ideological location y^* from Equation 1 with quality $q^* = \lambda_D(y^*)$, and the decisionmaker's utility is* 0.

The key intuition is that even though the entrepreneur doesn't have any *formal* agenda-setting power (as in the canonical Romer and Rosenthal (1979) model), she has *informal* agenda-setting power, due to her ability to craft higher-quality policies. Figure 1 illustrates the equilibrium when the entrepreneur is not closely-aligned with the decisionmaker. The decisionmaker's indifference curves in ideology-quality space slope upwards, because it takes more quality to compensate him for an outcome farther from his ideal point. The shaded region above the decisionmaker's 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 entrepreneur's indifference curves for policies she creates are shown by dashed lines. Because quality is costly, her indifference curves slope downwards and she prefers to develop a policy on a lower curve rather than a higher one. The optimal one 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.

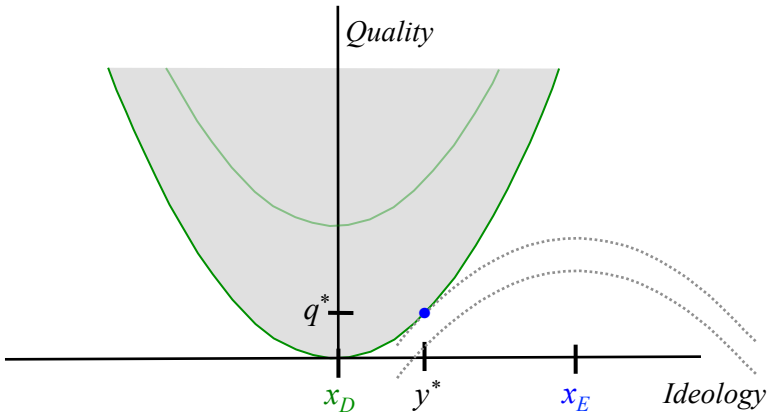

Figure 1: Baseline model. *In the figure, the actors have quadratic preferences, with ideal points* $x_D = 0$ *and* $x_E = 1$. *The entrepreneur's cost of developing quality is* $c_E(q) = 4q$. *The shaded area represents policies that the decisionmaker would accept, and the dashed lines represent the entrepreneur's indifference curves. The equilibrium policy is* ($y^* = 0.25$, $q^* = 0.63$).

The baseline model can be used to generate many different empirical implications. For example, Hitt, Volden, and Wiseman (2014) use a similar model to derive comparative statics about the effects of variation in legislators' skill at designing proposals for consideration by their colleagues. In a different vein, Triossi, Valdivieso, and Villena-Roldan (2013) use a model with endogenous quality production to study voting in the Chilean Senate.

For our purposes, the key implication of the baseline model is the simplest one: unless the entrepreneur and decisionmaker have closely-aligned preferences, the decisionmaker receives no benefit

from the entrepreneur's efforts to craft high-quality proposals. Indeed, he is no better off than he would be if the entrepreneur didn't exist. This adverse consequence is a direct effect of the entrepreneur's monopoly on policy development–although she lacks formal agenda power she can exercise informal agenda power and extract all of the benefits of quality in the form of ideological rents.

Bureaucratic Dominance in Japan We now apply our model to revisit debates in the literature about the degree of bureaucratic dominance in Japanese policymaking in the 1950s-1970s. Bureaucrats in postwar Japan were high-status, well-educated, and technically sophisticated, with impressive resources for policymaking. Members of the Diet, in contrast, had small staffs and few resources despite their formal policymaking authority. Consequently, the bureaucracy dominated the production of well-crafted policies; as noted by Pempel (1974), in the late 1960s around 75% of laws were written by the bureaucracy. Moreover, although the Diet could amend bills, it seldom used this power. In his classic book on the Ministry of International Trade and Industry (MITI), Johnson (1982) argues that the Diet's primary roles were only to "ratify" the bureaucracy's policies, and to mediate the relationship between bureaucrats and society. However, it was "the elite bureaucracy of Japan" (MITI) that made "most major decisions, draft[ed] virtually all legislation, control[led] the national budget, and [was] the source of all major policy innovations in the system." Thus, the longstanding scholarly consensus was that the bureaucracy held much more policymaking power than the LDP or the Diet (Pempel 1987).

In a provocative break from the bureaucratic dominance paradigm, Ramseyer and Rosenbluth (1993) build on principal-agent theories to argue that the bureaucracy was actually subordinate to the Diet. The foundation of their argument is that the Diet held the ultimate power to accept or reject the bureaucracy's policies, meaning "any discretion bureaucrats have in drafting bills is discretion they must exercise in ways legislators will not oppose." Their implication is that the bureaucracy's apparent control over policymaking was actually an artifact of its need to design policies perfectly in line with its political masters' wishes. A linchpin of their argument is that the LDP, via connections

and fire alarm monitoring, had excellent access to information, which it could use to assess whether the bureaucracy's policies promoted its interests. Ramseyer and Rosenbluth develop these ideas in a formal model in which a parliamentary majority party achieves perfect bureaucratic compliance, due to its ability to identify and alter policies that diverge from the party's ideal point.

Ramseyer and Rosenbluth's model is actually based on foundations similar to our own: the decisionmaker has the ultimate authority to choose policies, and perfect information about the effects of different proposals. However, there is a key distinction: in their model, the set of available policies is *static*. In other words, bureaucrats can select policies, but don't develop them. Augmenting the model with the ability to invest in quality leads to more nuanced conclusions. Viewed through the lens of our model, the need to gain the Diet's approval meant that MITI could not simply do whatever it wanted–the policies it developed had to at least minimally accommodate the Diet's preferences. In other words, bureaucratic dominance was not complete. However, MITI could nevertheless exercise a substantial degree of dominance by virtue of its monopoly on expertise. Namely, bureaucrats could saddle the Diet with policies that promoted their own objectives, but were also sufficiently well-crafted to be at least as acceptable as what the Diet could unilaterally produce with its inferior resources. Our model thus generates conclusions that strike a middle ground between the traditional paradigm of bureaucratic dominance, and the more recent perspective of bureaucratic compliance.

Institutional Responses to Policy-Development Monopoly

In our baseline model, a policy-development monopolist can exploit informal agenda power to capture all the benefits of her efforts in the form of ideological rents. We now analyze how the decisionmaker can rein in the monopolist, and thereby benefit from the high-quality policies she produces.

Internal Capacity

Our first extension considers a model in which the decisionmaker or his staff can produce high-quality policies. This process has two stages. First, the decisionmaker can invest up front, at a fixed cost

$C_D \geq 0$, to establish foundational organizational capacity. Next, the decisionmaker can use this capacity to develop a policy if he is dissatisfied with the monopolist's proposal. We let $\alpha_D > 0$ index the cost $c_D(q; \alpha_D)$ of using capacity, and we assume that a higher α_D implies both a higher cost and a higher marginal cost $\frac{\partial c_D(q;\alpha_D)}{\partial q}$ of using capacity.[4]

As in our baseline model, quality is policy-specific, so if the decisionmaker develops $y_D \neq y_E$ he doesn't benefit from the entrepreneur's efforts. We also assume that investments are non-cumulative if the entrepreneur and decisionmaker develop the same policy ($y_D = y_E$). The game proceeds as follows. **[1]** The decisionmaker decides whether to establish capacity. **[2]** The entrepreneur crafts a policy $b_E = (y_E, q_E)$. **[3]** If he established capacity, the decisionmaker decides whether to craft an alternative $b_D = (y_D, q_D)$. **[4]** The decisionmaker enacts b_E, b_D, 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 entrepreneur, 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, he will do so at his own ideal point, $x_D = 0$, with quality $q_D^*(\alpha_D)$ that equates his marginal benefit and marginal cost of quality. This determines the level of utility, which we denote as $s_D^*(\alpha_D)$, that the entrepreneur's policy must give the decisionmaker if she wishes to preempt.

If the decisionmaker's costs α_D are low (less than a threshold $\overline{\alpha}_D$) he will create a high-quality policy in stage 3, and the entrepreneur will be unwilling to preempt for two reasons: the entrepreneur benefits directly from quality, and preempting a high-quality policy requires a lot of costly effort. However, if the decisionmaker's costs α_D are sufficiently high (greater than $\overline{\alpha}_D$), then using his capacity will yield a relatively low-quality policy, and the entrepreneur will consequently choose to preempt it. The entrepreneur's proposal will give the decisionmaker utility exactly equal to $s_D^*(\alpha_D)$,

[4] In the Appendix, we state additional regularity conditions on $c_D(q; \alpha_D)$. For simplicity, we focus on cases in which the entrepreneur is not closely-aligned with the decisionmaker ($c_E'(\lambda_D(x_E)) > 1$), so the decisionmaker doesn't benefit from policy development in the baseline model.

as depicted in the left panel of Figure 2. Finally, as in the baseline model the entrepreneur's optimal policy $y^*_{preempt}(s^*_D)$ will balance ideological benefits against the costs of producing enough quality to convince the decisionmaker to adopt her proposal.[5]

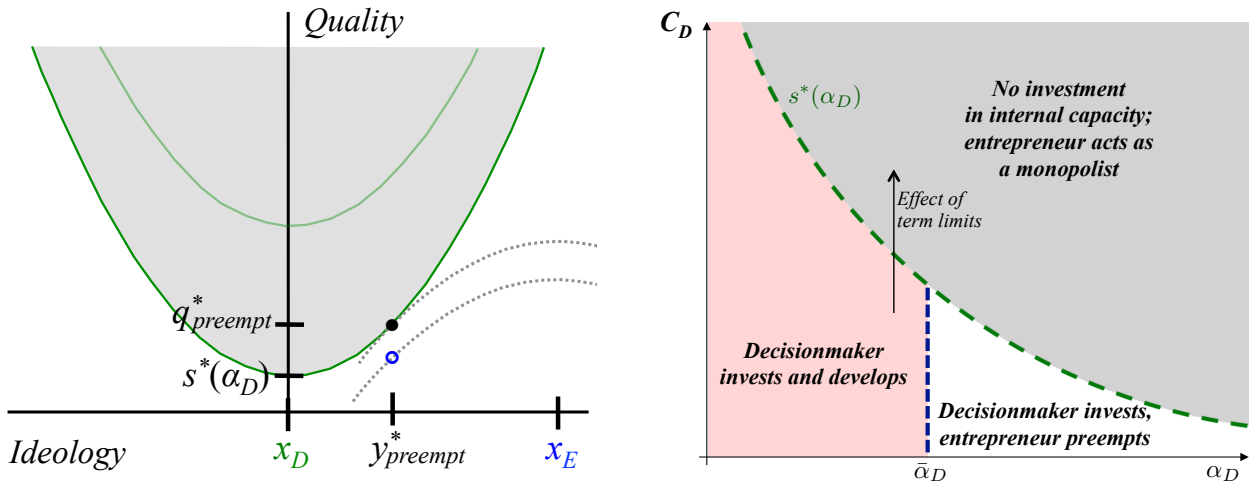

Figure 2: Model with internal capacity. *The left panel depicts an equilibrium where the decisionmaker invests in capacity and the entrepreneur preempts. Parameters are identical to Figure* 1*, and* $s^*(\alpha_D) = 0.08$*. The shaded area represents policies that the decisionmaker would accept in lieu of developing his own policy. The equilibrium policy is* ($y^*_{preempt} = 0.25$, $q^*_{preempt} = 0.143$)*. For comparison the equilibrium policy absent internal capacity is depicted with a* $\circ$*. The right panel depicts equilibrium outcomes as a function of* α_D *and* C_D*.*

We next analyze the decisionmaker's initial choice about whether to establish capacity. A decisionmaker who has established capacity will always receive the same utility $s^*_D(\alpha_D)$ that he could achieve absent the entrepreneur–either the prospect of the decisionmaker's policy development deters the entrepreneur, or she preempts by crafting a policy that offers the same utility. The decisionmaker thus pays the up-front fixed cost C_D to establish capacity if and only if $s^*_D(\alpha_D) \geq C_D$. Also, higher costs reduce the decisionmaker's benefit $s^*_D(\alpha_D)$, yielding behavior described in the following

[5]The first order condition is $c'_E(\lambda_D(y_E) + s^*_D) - 1 = \frac{\lambda'_E(x_E - y_E)}{\lambda'_D(y_E)}$.

proposition and illustrated in the right panel of Figure 2.

Proposition 2 ***(Internal capacity)*** *The equilibrium depends on the decisionmaker's costs of establishing and using capacity (C_D and α_D):*

1. ***(No capacity)*** *If $C_D > s_D^*(\alpha_D)$, the decisionmaker does not establish capacity, and outcomes are the same as in the baseline model.*
2. ***(Capacity and development)*** *If $C_D \leq s_D^*(\alpha_D)$ and $\alpha_D < \overline{\alpha}_D$, then the decisionmaker establishes capacity, and uses it to develop policy. The utilities of both the decisionmaker and entrepreneur are locally decreasing in α_D.*
3. ***(Capacity and preemption)*** *If $C_D \leq s_D^*(\alpha_D)$ and $\alpha_D \geq \overline{\alpha}_D$, then the decisionmaker establishes capacity, but the entrepreneur preempts with policy $y_{preempt}^*(s_D^*)$. The decisionmaker's utility is locally decreasing in α_D, but the entrepreneur's utility is locally increasing in α_D.*

In all cases, the decisionmaker's utility is equal to what he could achieve in the entrepreneur's absence.

Proposition 2 illustrates that while internal capacity can benefit the decisionmaker, it has several limitations. First, the cost of establishing capacity C_D may be sufficiently high to deter the decisionmaker from doing so, leaving the entrepreneur as the only policy developer. Second, even when capacity is free to establish, if the cost α_D of using it is high, the decisionmaker receives very little benefit because the entrepreneur doesn't have to work very hard to preempt ($s_D^*(\alpha_D) \approx 0$ for high α_D). Finally and most importantly, internal capacity does not help the decisionmaker limit the entrepreneur's informal agenda-setting power; he still fails to benefit from her investments in quality. The decisionmaker gets the same utility whether or not the entrepreneur develops a policy, and even if she is absent entirely. The underlying limitation of internal capacity as an institutional response to policy-development monopoly is that the decisionmaker remains unable to credibly commit to reject policies that are superior to what he could develop on his own.

We can also use our model to analyze how the decisionmaker's internal capacity affects the entrepreneur's utility. When the decisionmaker is efficient at policy development (i.e., a low α_D),

he uses internal capacity to develop a high quality policy that benefits both players. Because the decisionmaker is effectively in charge of policy development, the entrepreneur would be even better off if the decisionmaker's efficiency were further improved. However, when the decisionmaker is inefficient at policy development ($\alpha_D \geq \bar{\alpha}_D$ but $C_D \leq s_D^*(\alpha_D)$), the entrepreneur chooses to preempt policy development by the decisionmaker. In this case, improvements in the decisionmaker's internal capacity would actually harm the entrepreneur. The reason is intuitive: if the decisionmaker becomes more skilled, he will either become more difficult to preempt and exploit through informal agenda power, or he will take over policy development entirely.

We now illustrate how reductions in the internal capacity of a decisionmaking institution can benefit 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 legislative capacity is weakened by term limits. 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, also describes how extra-legislative policy entrepreneurs will 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 entrepreneur 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 indeed predicts that, as feared by Polsby, an external policy entrepreneur will step in and fill the gap–this effect is illustrated in the right panel of Figure 2. Moreover, the empirical literature broadly supports the proposition 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.

Existing work (Hall and Deardorff 2006) paints a relatively sanguine picture of such *subsidy lobbying* by groups like ALEC. Despite some distortions in policy that may result, 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

[6] www.alec.org/about-alec/history/, accessed May 27, 2015.

preferred ideological outcome is the foundation of informal agenda power. Thus, our interpretation of the consequences of subsidy lobbying in states where institutional rules like term limits have reduced legislatures' internal capacity is much less optimistic. In particular, Proposition 2 predicts that term limits will make legislators worse off if it becomes prohibitively costly to invest in establishing legislative expertise. Moreover, groups like ALEC will reap large rewards by stepping into the gap with policies that promote their own ideological agendas.

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 entrepreneurs 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 entrepreneur's cost function is linear, $c_E(q) = \alpha_E q$, with $\alpha_E > 2$.[7] 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 $(x_A = x_D = 0)$. The game proceeds as follows. **[1]** The decisionmaker chooses the agent's ideal point x_A. **[2]** The entrepreneur crafts a policy $b_E = (y_E, q_E)$. **[3]** The agent enacts b_E or any zero-quality policy $(y, 0)$.

[7] The assumption $\alpha_E > 2$ is made for technical convenience; it means that investment in quality can't yield infinite joint utility for the entrepreneur and decisionmaker. Note that although investment is inefficient for the players, it may be a public good for society as a whole.

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

$$-(y_E - x_E)^2 - (\alpha_E - 1)(y_E - x_A)^2 .$$

The first order condition yields the optimal ideology and quality for the entrepreneur to develop:

$$y_E^*(x_A) = \frac{1}{\alpha_E} x_E + \left(1 - \frac{1}{\alpha_E}\right) x_A \text{ and } q_E^*(x_A) = \left(\frac{x_E - x_A}{\alpha_E}\right)^2 . \tag{2}$$

The ideological location of the entrepreneur's proposal is thus a convex combination of the entrepreneur and agent's ideal points, weighted by $\frac{1}{\alpha_E}$.

We now consider the decisionmaker's choice of an agent. The decisionmaker expects that an agent at x_A will induce the entrepreneur to develop a policy that gives him utility equal to:

$$s^*(x_A) \equiv q_E^*(x_A) - (y_E^*(x_A) - 0)^2 = \left(\frac{2}{\alpha_E} - 1\right) x_A^2 - \frac{2 x_A x_E}{\alpha_E}. \tag{3}$$

The decisionmaker will therefore choose an agent who maximizes Equation 3. It is straightforward to see that he will never choose an agent who shares the entrepreneur'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 entrepreneur's ideological preferences.[8] Taking the first order condition yields the ideal point of the optimal agent $x_A^* = -\frac{x_E}{\alpha_E - 2}$. The tradeoffs underlying this choice can be seen in Equation 2: a more-extreme agent forces the entrepreneur to develop 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.

[8] Optimality of counterbalancing also holds for more general utility and cost functions.

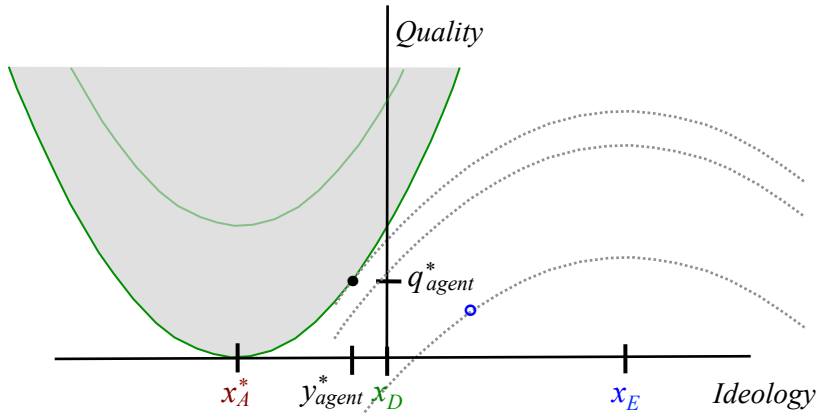

Figure 3: Model with delegation. *Parameters are identical to previous figures, and the optimal agent is* $x^*_A = -0.5$. *The shaded area represents policies that the agent would accept, and the equilibrium policy is* $(y^*_{agent} = -0.125, q^*_{agent} = 0.141)$. *For comparison the equilibrium policy in the baseline model is depicted with a* $\circ$.

Figure 3 depicts an example of the optimal agent x^*_A and resulting policy outcome $\left(y^*_{agent}, q^*_{agent}\right)$. Using Equations 2 and 3, we now characterize the equilibrium.

Proposition 3 ***(Delegation)***

1. *The decisionmaker's optimal agent is* $x^*_A = -\frac{x_E}{\alpha_E - 2}$.
2. *The policy outcome is* $y^*_{agent} = -\frac{x_E}{\alpha_E(\alpha_E-2)}$ *with quality* $q^*_{agent} = \frac{x_E^2}{\alpha_E^2}\left(\frac{\alpha_E-1}{\alpha_E-2}\right)^2$.
3. *The decisionmaker's expected utility is* $\frac{x_E^2}{\alpha_E(\alpha_E-2)} > 0$.

Proposition 3 yields several natural results. Part 1 implies that the optimal agent becomes more centrist as the entrepreneur becomes less skilled at developing high-quality policies $\left(\frac{\partial x^*_A}{\partial \alpha_E} > 0\right)$. When the entrepreneur is less skilled, a commitment to implement the agent's ideal policy $(x_A, 0)$ if the entrepreneur fails to develop something better is ineffective at spurring investment. Correspondingly, as the entrepreneur becomes more capable $(\alpha_E \to 2)$ the optimal counterbalancing agent becomes more extreme. Intuitively, when the entrepreneur is highly capable the decisionmaker chooses a highly demanding agent.

The proposition also allows us to analyze how delegation affects ideology and quality of enacted policies, relative the baseline model in which $y^* = \frac{x_E}{\alpha_E}$ and $q^* = \left(\frac{x_E}{\alpha_E}\right)^2$. Delegation typically results in a more-moderate ideological outcome $\left(\left|y^*_{agent}\right| < |y^*| \text{ i.f.f. } \alpha_E > 3\right)$, because the optimal counterbalancing agent pulls policy away from the entrepreneur and closer to the decisionmaker.[9] 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.

Finally, part 3 of the proposition implies that the decisionmaker benefits more from delegation when the entrepreneur is more extreme (i.e., a higher x_E). Intuitively, a more extreme entrepreneur is more willing to "trade" quality investments for ideological concessions. When she is a policy-development monopolist, she extracts all of the gains from trade for herself. Delegation allows the decisionmaker to get ahold of some of the gains.

The most important of our results is actually the simplest one: the optimal agent is a counterbalancing one, on the opposite side of the decisionmaker from the entrepreneur. This result 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 model goes further, showing that the optimal appointee is not simply a clone of the decisionmaker, but rather someone who counterbalances powerful groups that have the ability to develop policies.[10]

[9] The decisionmaker could appoint a less-extreme agent $x_A \in (x^*_A, x_D)$ to get an ideological outcome exactly at his ideal point, but doesn't do so because the resulting policy would be lower-quality.

[10] In simultaneously-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) and Jo and Rothenberg (2014) analyze 3-level bureaucratic hierarchies, and show that a principal will appoint a supervisor to counterbalance a subordinate whose decisions can be influenced or overridden. Our model uses a very different setup than these models and also differs because: (i)

Financial Regulation The most common criticism levied against financial regulation in the United States is that it 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."[11]

Counterintuitively, however, the extant theoretical work on delegation to regulators suggests that this state of affairs is 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, that can help less-informed regulators choose better policies. By favoring banks, biased regulators encourage them to truthfully reveal that 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.[12] Gailmard and Patty (2013) make a similar theoretical argument, and also 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.

Our model of delegation may also be applied to the choice of financial regulators. Congress and the President are the decisionmaker, who design an agency and appoint its head (the agent). The entrepreneur is the regulated industry, which has expertise that can be used to craft higher-quality

the entrepreneur may not be a subordinate but rather may be an actor outside the government, and (ii) the entrepreneur obtains informal authority via effort on policy development.

[11] http://thehill.com/policy/finance/219051-warren-we-need-hearings-on-goldman-sachs-tapes, accessed May 21, 2015.

[12] Delegation to someone whose preferences are somewhat-aligned with the actor who generates policies also occurs in Bubb and Warren's (2014) model of a 3-level bureaucratic hierarchy.

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 the extant theoretical literature? The answer lies in differing assumptions about the nature of the industry's expertise. In the extant models, the industry's effort is *transferable* across policies, in the sense that once exerted for one particular policy it can be applied to design alternative policies dealing with the same issue area.[13] Industry thus worries that effort on its preferred policy will be expropriated by anti-industry regulators to implement something else it strongly dislikes, which attenuates its willingness to invest or share information. In contrast, in our model quality is policy-specific, so industry's effort on a proposal cannot be readily applied to policies elsewhere in the ideological spectrum. Industry tries to exploit this to exert informal agenda power, and a regulator who is an anti-industry skeptic improves public welfare by demanding greater quality investments and making fewer ideological concessions.

Our analysis shows that a theory-guided interpretation 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-level self-regulation that also makes it easier for

[13] McCarty's model is based on quality rather than information, but has the comparable property that the industry's effort on a proposal improves the quality of other policies available to the agency.

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 approach and are not especially helpful for an agency that decides to implement a different policy.

Interestingly, conflicting evidence is also present in Gailmard and Patty's (2013, 251-254) case study about the early years of the SEC. While the SEC's operation provided evidence to support the argument that biased regulators facilitated communication, the politics surrounding the agency's creation were actually more consistent with our model. President Roosevelt and most members of Congress initially wanted financial regulation to be handled by the progressive FTC, precisely in order 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 a model in which there is a second policy-developer, the *competitor.* Like the original entrepreneur and decisionmaker, the competitor values quality and has quadratic preferences. Her ideal point is the mirror-image of the original entrepreneur's, $x_C = -x_E$. She faces a linear cost of producing quality, but her cost is higher than the entrepreneur's, $\alpha_C \geq \alpha_E$.[14] The game proceeds as follows. **[1]** The entrepreneur and competitor simultaneously craft policies $b_E = (y_E, q_E)$ and $b_C = (y_C, q_C)$. **[2]** The decisionmaker enacts b_E, b_C, or any zero-quality policy $(y, 0)$.

[14] Although we assume that policy developers can work on policies anywhere in the ideological spectrum, we could also restrict each of them to only develop policies in her preferred ideological direction ($y_C < 0$ and $y_E > 0$). All results and analysis would be unchanged.

The effect of competition in policymaking is not ex ante obvious, and previous theories offer differing predictions.[15] Similarly, in our model intuition suggests competing effects. If the competitor produces a high-quality policy, this could de-motivate the entrepreneur, who gets spillover benefits from quality and also worries about wasting her effort on a proposal that won't be enacted. However, we might also expect competition to benefit the decisionmaker if it forces the entrepreneur to develop a more moderate proposal or spurs her to 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 the 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, an entrepreneur who knows her policy won't be enacted has a strict incentive either to develop something just 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 build on results from Hirsch and Shotts (2015) and Hirsch (2015). The equilibrium is depicted in Figure 4. The policy developers mix over ideology and quality of proposals, as well as the utility they offer to the decisionmaker. The policies developed by the entrepreneur and the competitor are along the blue and purple curves, respectively. The entrepreneur always develops a policy that is strictly better for the decisionmaker than $(0, 0)$. The competitor's mixed strategy involves sitting out some of the time, but any policy she develops is one that the decisionmaker strictly prefers over $(0, 0)$.

[15] Bendor, Taylor, and Van Gaalen (1987) show that an exogenous, stochastic outside option can be either beneficial or harmful. Ting (2003) shows that bureaucratic redundancy can be either beneficial or harmful when all actors value policy success. 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.

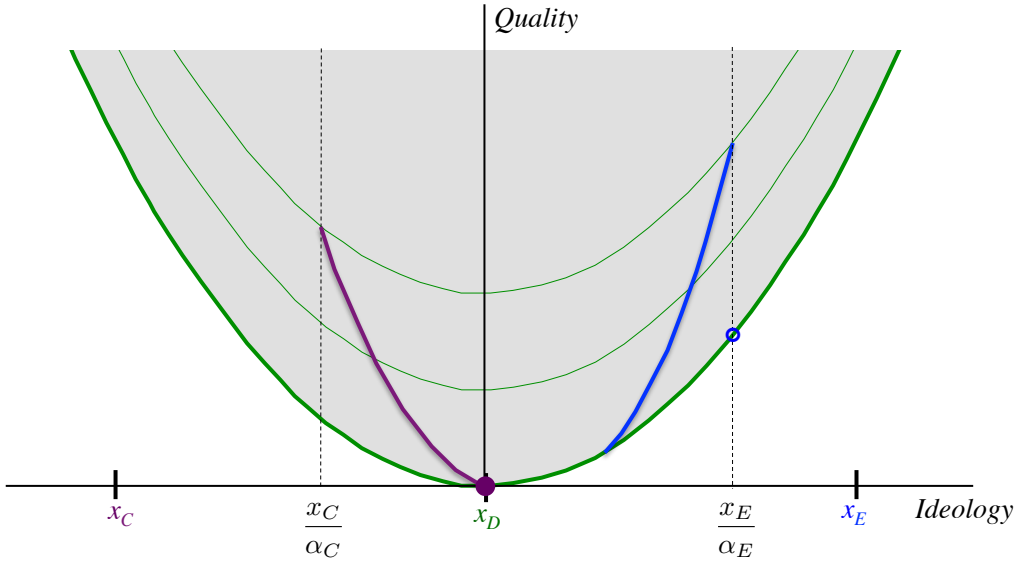

Figure 4: Model with competition. *The competitor is at $x_C = -x_E$, and faces higher costs than the entrepreneur, $\alpha_C > \alpha_E$. The entrepreneur always develops a policy, and mixes over the policies on the blue curve. The competitor sometimes is inactive (depicted by the purple dot at the origin), and otherwise mixes over policies on the purple curve. For comparison the equilibrium policy in the baseline model is depicted with a $\circ$.*

We now describe the effects of competition in our model.

Proposition 4 ***(Competition)*** *The model with competition has a unique equilibrium, in which:*

1. *The entrepreneur always develops a proposal. Her proposals are more ideologically-moderate than in the absence of competition.*
2. *If the competitor's costs are the same as the entrepreneur's $(\alpha_C = \alpha_E)$, they both always develop proposals 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 entrepreneur $(\alpha_C > \alpha_E)$ mixes between developing a proposal and sitting out. Her proposals are (first order stochastically) more moderate than the entrepreneur's proposals. The decisionmaker enacts the entrepreneur's proposal*

more than half of the time, but sometimes enacts the competitor's proposal.

4. *Competition increases the decisionmaker's utility and decreases the entrepreneur's utility.*

The key takeaway is that competition always benefits the decisionmaker–this can be seen in the figure by observing that the entrepreneur'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 the policy developers are ideologically motivated to invest in quality. Specifically, the competitor tries to exploit quality to push through policies that serve her ideological interests. She designs her policies to have enough quality to be acceptable to the decisionmaker, so he will be willing to implement them if he doesn't like the entrepreneur's proposal. But to the entrepreneur, the competitor's policies are ideologically-repellant, so she works to produce something even more appealing to 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 entrepreneur–for the decisionmaker to benefit from competition.[16] Second, the decisionmaker is better off with a competitor whose ideal point is $x_C = -x_E$ than with a competitor at his own ideal point. In fact, a competitor at $x_C = x_D = 0$ is unwilling to pay the cost of developing a policy, so the decisionmaker doesn't benefit from her presence. A competitor at $x_C = -x_E$, 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.

[16]The basic pattern of results also doesn't require ideological symmetry ($x_C = -x_E$), just that the entrepreneur and competitor are on opposite sides of the decisionmaker.

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 a bureaucratic agency follows those procedures when engaging in rulemaking. 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. Deck-stacking can be accomplished by making it easier for a favored group to participate, creating advisory panels or other institutions to advocate for them, or by making it more difficult for their opponents to participate in rulemaking. 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. These theories predict that a decisionmaker will be better-informed when receiving information from competing interest groups.

We now discuss how deck-stacking and information-acquisition theories, as well as our own model, make predictions about two key empirical patterns in the politics of regulatory rulemaking.

The first pattern 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 pattern is that when interest groups try to influence the design of rulemaking procedures, they typically don't seek to facilitate participation by their opponents. Rather, they try to ensure that opposing voices are not heard. This is straightforward to explain via deck-stacking theories, but it is difficult to explain via standard informational models. In models building on the

classic work of Crawford and Sobel (1982), lobbying by opposing experts is good not only for the decisionmaker, but also for the experts, because it reduces the variance of policy outcomes. Thus, these models (e.g., Gilligan and Krehbiel 1989, Krishna and Morgan 2001) predict that an interest group actually wants decisionmakers to be lobbied by groups on the opposite side of the policy spectrum.[17]

Our model simultaneously fits both of these patterns. Proposition 4 shows that a decisionmaker 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, because sometimes the competitor's policy is enacted, and even when her own policy is enacted the monopolist has to settle for a more moderate policy. The monopolist thus prefers to shut her opponents out of the rulemaking process.

An important new insight that emerges from our model is that the decisionmaker benefits from competition even when it is highly asymmetric. Asymmetric competition is common in regulatory politics, in which concentrated business interests square 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 to achieve benefits of competition it is not necessary that rulemaking procedures fully level the playing field between business and advocacy groups (something that is unlikely to be feasible). Rather, our

[17] 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 not only from our model but also from Crawford and Sobel (1982). The result that opposing lobbyists hurt each others' interests is essentially hard-wired into that model–it has two exogenously fixed alternatives and lobbyists' preferences are independent of the state of the world, so there is no possibility of shared interests in good policymaking. Our model includes shared interests (an important feature of of real-world policymaking) but still yields the result that lobbyists dislike competition.

model shows that centrists benefit from competition even if it is asymmetric, in the sense that one side has substantially more resources for policy development.

Conclusion

In this paper, we have developed a theory of policymaking processes 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 higher-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 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 in-house capacity, in the form of personal expertise or specialized staff. This can make the decisionmaker better off, but it doesn't directly counteract the monopolist's informal agenda-setting power. To restrain a monopolist requires 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 series of models in this paper is that investments made by policy developers are policy-specific. Recent work by Hirsch and Shotts (2012) showed that if Congressional committees are modeled as investing in policy-specific information then open rather than closed rules are optimal for encouraging them 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). Our results, alongside those two recent papers, 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 her 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 informal agenda power of elites who hold a near-monopoly on resources for policy development.

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Supplemental Appendix

All formal proofs are in this appendix. We begin by establishing a general result on optimal policy development in our baseline model and our model of internal capacity.

Lemma 1 *The optimal policy for a monopolist to develop if she must give at least utility $s \geq 0$ to the decisionmaker is (y_E^*, q_E^*), characterized as follows.*

1. *If $c_E'(s + \lambda_D(y_E)) < 1$, then $y_E^* = x_E$ and q_E^* is the unique solution to the first order condition $c_E'(q_E) = 1$.*
2. *If $c_E'(s + \lambda_D(y_E)) > 1$, then y_E^* is the unique, interior, value that solves*

$$\max_{y_E \in [0, x_E]} s + \lambda_D(y_E) - \lambda_E(x_E - y_E) - c_E(s + \lambda_D(y_E)),$$

and $q_E^* = s + \lambda_D(y_E^*)$.

Proof. The set of bills that can be enacted is $\{(y_E, q_E) : q_E \geq s + \lambda_D(|y_E|)\}$. First, we show that an optimal proposal must have either (i) $y_E \in [0, x_E)$ and $q_E = s + \lambda_D(y_E)$, or (ii) $y_E = x_E$ and $q_E \geq s + \lambda_D(y_E)$. An enactable bill (y_E, q_E) with $y_E < 0$ cannot be optimal because the entrepreneur would be strictly better off proposing $(0, q_E)$ and likewise $y_E > x_E$ cannot be optimal because it would be better to propose (x_E, q_E). For $y_E \in [0, x_E)$, only bills with $q_E = s + \lambda_D(y_E)$ can be optimal because if $q_E > s + \lambda_D(y_E)$ the entrepreneur would be better off proposing $(y_E + \epsilon, q_E)$, which is enactable for sufficiently small ϵ.

For part 1 of the lemma, $c_E'(s + \lambda_D(y_E)) < 1$ and straightforward optimization implies that the optimal bill for the entrepreneur to offer at any $y_E \in [0, x_E]$ has quality q_E^* that solves $c_E'(q_E) = 1$. Note that this implies that rather than proposing a bill at $y_E \in [0, x_E)$, the entrepreneur can do better by proposing the bill (x_E, q_E^*) and having it accepted.

For part 2 of the lemma, $c_E'(\lambda_D(x_E)) > 1$ implies that the best bill for the entrepreneur to offer at x_E has $q_E = s + \lambda_D(y_E)$. Thus the optimal bill solves the maximization problem stated

in part 2 of the lemma; the first two terms represent the quality of the proposal, the third is the entrepreneur's ideological loss, and the final one is her cost of developing quality. The fact that y_E^* is unique follows from the fact that $c_E' > 0$ and $c_E'' \geq 0$. It is interior, i.e., in $(0, x_E)$, because $\lambda_D'(0) = 0$ and $c_E'(\lambda_D(x_E)) > 1$.■

Proof of Proposition 1 If the decisionmaker does not enact the entrepreneur's policy, the optimal policy for him to enact is $(0, 0)$, which gives him utility 0. This is the minimum level of utility, $s = 0$, that the entrepreneur must offer to the decisionmaker for a policy to be enactable.

If $c_E'(\lambda_D(y_E)) < 1$, the constraint of getting the decisionmaker's approval is not binding. The entrepreneur's ideal bill is (x_E, q_E^*) from Lemma 1.1. Because $c_E'(q_E^*) = 1$ and $c_E'(\lambda_D(y_E)) < 1$, the entrepreneur's bill has enough quality so that the decisionmaker strictly prefers it over $(0, 0)$.

If $c_E'(\lambda_D(y_E)) > 1$, the constraint of getting the decisionmaker's approval is binding. By Lemma 1.2, the entrepreneur's optimal policy y^* solves

$$\max_{y_E \in [0, x_E]} \lambda_D(y_E) - \lambda_E(x_E - y_E) - c_E(\lambda_D(y_E)).$$

The optimum satisfies the first order condition

$$c_E'(\lambda_D(y_E)) - 1 = \frac{\lambda_E'(x_E - y_E)}{\lambda_D'(y_E)}.$$

Equilibrium quality and actors' utilities follow directly from the setup of the model.■

Before proving Proposition 2, we state our assumptions and regularity conditions for the cost of using capacity $c_D(q; \alpha_D)$.

Assumption 1 ***(Cost of using capacity)***

- *$\forall \alpha_D$, c_D' is strictly increasing in q, with $c_D'(0; \alpha_D) < 1$ and $\lim_{q \to \infty} c_D'(q, \alpha_D) = \infty$.*
- *$\frac{\partial c_D}{\partial \alpha_D} > 0$ and $\frac{\partial^2 c_D}{\partial q \partial \alpha_D} > 0$, so a higher α_D means a higher cost and a higher marginal cost of using capacity to develop quality.*

- *as* $\alpha_D \to +\infty$, $\frac{\partial c_D}{\partial q}$ *(above* $q = 0$*) converges pointwise to* $+\infty$*, i.e., the decisionmaker has no internal capacity.*
- *as* $\alpha_D \to 0$, $\frac{\partial c_D}{\partial q}$ *converges pointwise to* 0*, i.e., the decisionmaker can create quality for free.*

Proof of Proposition 2 We construct the equilibrium as follows. We first analyze how α_D affects quality $q_D^*(\alpha_D)$ and decisionmaker utility $s_D^*(\alpha_D)$ if the decisionmaker develops a policy in stage 3 of the model. We then analyze the entrepreneur's decision about whether to preempt in stage 2 of the model, and we also analyze how local changes in α_D affect the actors' utilities. Finally, we analyze the decisionmaker's decision about establishing capacity in stage 1 of the model.

Stage 3. Given that the decisionmaker has established capacity, he can obtain utility 0 by choosing $(0,0)$, or utility $q_D - c_D(q_D;\alpha_D)$ by developing a proposal with quality q_D at his own ideal point (setting aside sunk costs of establishing capacity). Under Assumption 1, c_D' is strictly increasing in q, with $c_D'(0;\alpha_D) < 1$ and $\lim_{q\to\infty} c_D'(q;\alpha_D) = \infty$, so there is a unique optimal $q_D^*(\alpha_D)$ that solves the first order condition

$$c_D'(q_D^*(\alpha_D);\alpha_D) = 1. \tag{1}$$

Let $s_D^*(\alpha_D) \equiv q_D^*(\alpha_D) - c_D(q_D^*(\alpha_D);\alpha_D) > 0$ be the decisionmaker's net utility when he develops policy $(0, q_D^*(\alpha_D))$. Assumption 1 implies the following result.

Lemma 2 $q_D^*(\alpha_D)$ *and* $s_D^*(\alpha_D)$ *are strictly decreasing in* α_D*, with the following limits:* $\lim_{\alpha_D\to 0} q_D^*(\alpha_D) = \lim_{\alpha_D\to 0} s_D^*(\alpha_D) = +\infty$ *and* $\lim_{\alpha_D\to\infty} q_D^*(\alpha_D) = \lim_{\alpha_D\to\infty} s_D^*(\alpha_D) = 0$.

Stage 2. An optimal proposal must give the decisionmaker utility $s_D^*(\alpha_D)$. Because, as noted in the main text, our analysis of capacity focuses on an entrepreneur who is not closely-aligned with the decisionmaker (i.e., $c_E'(\lambda_D(y_E)) > 1$), Lemma 1.2 implies that the entrepreneur's optimal bill to develop if she develops an enactable bill solves

$$\max_{y_E\in[0,x_E]} s_D^*(\alpha_D) + \lambda_D(y_E) - \lambda_E(x_E - y_E) - c_E(s_D^*(\alpha_D) + \lambda_D(y_E)).$$

The maximum is characterized by the first order condition

$$c_E'\left(s_D^*\left(\alpha_D\right)+\lambda_D\left(y_E\right)\right)-1=\frac{\lambda_E'\left(x_E-y_E\right)}{\lambda_D'\left(y_E\right)},$$

which, by Lemma 1.2, has a unique optimal solution $y_{preempt}^*\left(s_D^*\right)\in\left(0,x_E\right)$ with quality $q_{preempt}^*\left(s_D^*\right)\equiv s_D^*\left(\alpha_D\right)+\lambda_D\left(y_{preempt}^*\left(s_D^*\right)\right)$.

By the envelope theorem, the derivative of the entrepreneur's utility $U_E\left(y_E,s_D^*\right)$ with respect to s_D^* evaluated at the optimum is $1-c_E'\left(s_D^*+\lambda_D\left(y_{preempt}^*\left(s_D^*\right)\right)\right)$, which is strictly less than 0 from the definition of $y_{preempt}^*\left(s_D^*\right)$. Thus, conditional on developing a policy, the entrepreneur's utility $U_E\left(y_{preempt}^*\left(s_D^*\right),s_D^*\right)$ is strictly decreasing in the decisionmaker's utility s_D^*. It is also straightforward to confirm that it is equal to her monopoly utility for $s_D^*=0$, and approaches $-\infty$ as $s_D^*\to\infty$. Combined with Lemma 2 this implies that the entrepreneur's utility from preempting is strictly increasing in α_D, from $-\infty$ as $\alpha_D\to 0$ to her monopoly utility as $\alpha_D\to\infty$.

The entrepreneur can also decline to develop a policy in stage 2. In this case, her utility is $q_D^*-\lambda_E\left(0\right)$, which is strictly increasing from $-\lambda_E\left(0\right)$ to $+\infty$ as q_D^* goes from 0 to $+\infty$. Combined with Lemma 2, this implies that the entrepreneur's utility from sitting out is strictly decreasing in α_D, from $+\infty$ to $-\lambda_E\left(0\right)$ as α_D goes from 0 to $+\infty$. This fact, along with our analysis above of the entrepreneur's utility from preempting implies that there is a cutpoint $\bar{\alpha}_D$ such that the entrepreneur relies on the decisionmaker to develop policy if $\alpha_D<\bar{\alpha}_D$ and preempts if $\alpha_D\geq\bar{\alpha}_D$.

The effect of local changes in α_D (above or below $\bar{\alpha}_D$) on the entrepreneur's utility follows immediately from the preceding discussion. The decisionmaker's utility in either region is $s_D^*\left(\alpha_D\right)$, which, from Lemma 2 is strictly decreasing in α_D.

Stage 1. If the decisionmaker establishes capacity, he always receives utility $s_D^*\left(\alpha_D\right)$. So it is optimal for him to pay the up-front fixed cost C_D to establish capacity iff $C_D\leq s_D^*\left(\alpha_D\right)$. ■

Proof of Proposition 3 The main text provides most of the argument, which we retrace here, adding a few details. Given an agent with ideal point $x_A<x_E$, by the same reasoning as in

Lemma 1 the entrepreneur doesn't want to make an enactable proposal $y_E < x_A$ or $y_E > x_E$, and for $y_E \in [x_A, x_E]$ quality must be $q_E = (y_E - x_A)^2$ for an optimal enactable proposal.[1] The entrepreneur's optimal bill solves

$$\max_{y_E \in [x_A, x_E]} (y_E - x_A)^2 - (x_E - y_E)^2 - \alpha_E (y_E - x_A)^2 .$$

The first order condition for y_E is

$$2y_E - 2x_A - 2y_E + 2x_E - 2\alpha_E y_E + 2\alpha_E x_A = 0$$

so

$$y_E^* (x_A) = \frac{1}{\alpha_E} x_E + \left(1 - \frac{1}{\alpha_E}\right) x_A \text{ and } q_E^* (x_A) = (y_E - x_A)^2 = \left(\frac{x_E - x_A}{\alpha_E}\right)^2 . \tag{2}$$

The decisionmaker's utility is

$$s^* (x_A) \equiv q_E^* (x_A) - (y_E^* (x_A) - 0)^2 = \left(\frac{2}{\alpha_E} - 1\right) x_A^2 - \frac{2x_A x_E}{\alpha_E}.$$

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

$$\begin{aligned} 2\left(\frac{2}{\alpha_E} - 1\right) x_A - \frac{2x_E}{\alpha_E} &= 0 \\ x_A^* &= -\frac{x_E}{\alpha_E - 2}. \end{aligned}$$

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

$$y_{agent}^* = y_E^* (x_A^*) = \frac{1}{\alpha_E} x_E + \left(1 - \frac{1}{\alpha_E}\right) x_A^* = -\frac{x_E}{\alpha_E (\alpha_E - 2)}$$

and

$$q_{agent}^* = q_E^* (x_A^*) = \left(\frac{x_E - x_A^*}{\alpha_E}\right)^2 = \frac{x_E^2}{\alpha_E^2} \left(\frac{\alpha_E - 1}{\alpha_E - 2}\right)^2 .$$

For Part 3 of the Proposition, decisionmaker utility is

$$\begin{aligned} -(y_E^* (x_A^*))^2 + q_E^* (x_A^*) &= -\frac{x_E^2}{\alpha_E^2} \left(\frac{1}{\alpha_E - 2}\right)^2 + \frac{x_E^2}{\alpha_E^2} \left(\frac{\alpha_E - 1}{\alpha_E - 2}\right)^2 \\ &= \frac{x_E^2}{\alpha_E (\alpha_E - 2)} > 0. \blacksquare \end{aligned}$$

[1] For $x_A > x_E$ the analysis is similar. The decisionmaker would never delegate to such an agent.

Proof of Proposition 4 The results follow from results in Hirsch (2015), henceforth referred to as H. The terminology used by H is slightly different from our terminology here: H's "more-engaged entrepreneur" is our "entrepreneur", and H's "less-engaged entrepreneur" is our "competitor."

Part 1. H Corollary 3.1 proves that the entrepreneur always develops a proposal. The fact that her proposals are more moderate with competition follows from the structure of the equilibrium; the competitor's strategy has no atoms (except for sitting out) so H Lemma 1 implies that the entrepreneur's proposal with competition is more moderate than her monopoly proposal $y^* = \frac{x_E}{\alpha_E}$.

Part 2. Hirsch and Shotts (2015) Proposition 1 establishes that if $\alpha_C = \alpha_E$, the two actors use identical (symmetric) mixed strategies. The fact that they each win with probability 1/2 is an immediate implication of this symmetry

Part 3. The fact that the competitor mixes between making a proposal and sitting out follows from H Corollary 3.2, which (using the definition of engagement in H Proposition 2), establishes that she is active with probability $(\alpha_E - 1)\left(\left(\frac{\alpha_C}{\alpha_C - 1}\right)^{|x_C|^{\frac{1}{x_E}}} - 1\right)$. Because $-x_C = x_E$, this equals $(\alpha_E - 1)\left(\left(\frac{\alpha_C}{\alpha_C - 1}\right) - 1\right)$, which is $\in (0, 1)$ for $\alpha_C \in (\alpha_E, \infty)$.

To see that the competitor's proposals are more moderate than the entrepreneur's for $\alpha_C > \alpha_E$, let G_E be the c.d.f. of the absolute value of the ideology of the monopolist's proposals and let G_C be the c.d.f. of the absolute value of the ideology of the competitor's proposals. Also, let G be the c.d.f. of the absolute value of both of their proposals in the equilibrium of the symmetric case $\alpha_C = \alpha_E$. H Corollary 5 establishes that the ideological extremism of an agent's proposals is FOSD decreasing in her own cost parameter α_i and FOSD increasing in her opponent's cost parameter α_{-i}, so G FOSD G_C and G_E FOSD G, which implies G_E FOSD G_C.

For probabilities of winning, note that from Part 2, if $\alpha_C = \alpha_E$, the entrepreneur wins with probability 1/2. H Corollary 4 thus implies that for $\alpha_C > \alpha_E$, the entrepreneur's probability of

winning is $> 1/2$. It must be < 1, however, because the competitor enters (and pays costs) with strictly positive probability, something she wouldn't do if the entrepreneur always won.

Part 4. The decisionmaker's utility under monopoly is 0. With competition, it is > 0 because the entrepreneur offers the decisionmaker utility > 0 with probability 1 (This follows from H Lemma 3). The precise expression for the decisionmaker's utility is H Proposition 4.3.

To show that the entrepreneur's utility is lower with a competitor, we consider the entrepreneur's highest-score proposal in the unique equilibrium that H characterizes for the competitive game. Call this proposal $(\hat{y}, \hat{q})$, and note that it wins with probability 1. Because $(\hat{y}, \hat{q})$ gives the decisionmaker utility > 0 it cannot be the same as the entrepreneur's optimal monopoly proposal (y^*, q^*). In fact $(\hat{y}, \hat{q})$ gives the entrepreneur strictly lower utility than (y^*, q^*), because Proposition 1 from the main text shows that (y^*, q^*) is unique and $(\hat{y}, \hat{q})$ is an enactable proposal in the monopoly model. Because the entrepreneur's utility must be the same for every proposal in the support of her equilibrium mixed strategy in the competitive model, the entrepreneur's utility is strictly lower with competition than in the monopoly model.■