The Persistence and Fragility of Bureaucratic Capacity*

Lindsey Gailmard† Sean Gailmard‡

January 21, 2026

Bureaucratic capacity is central to the achievement of public policy objectives. Yet building and sustaining capacity poses challenges that are not well understood. To analyze these dynamics, we develop a formal model of bureaucratic capacity as a team production process, with self-selection into bureaucracy by overlapping generations of agents. The model reveals four fundamental insights. First, bureaucratic capacity is an emergent property of public agencies: it requires shared expectations by skilled agents that other skilled agents will pursue bureaucratic careers. Second, capacity can be fragile: transitory political manipulation can change selection into an agency and, in turn, degrade its long-term capacity. Third, high-capacity bureaucracies are especially vulnerable to long-term undermining through short-term political manipulation, whereas medium-capacity bureaucracies are more resistant. Fourth, effects of short-term political manipulation can be mitigated by increasing transferability of skills between agencies and other career options, though this will typically increase "revolving door" career paths.

*We are grateful to Benjamin Blumenthal, Dan Carpenter, Dan Gibbs, George Krause, John Patty, and Mike Ting for helpful feedback on an earlier draft.

†Postdoctoral Scholar, Regulation, Evaluation, and Governance Lab, Stanford University. E-mail: gailmard@stanford.edu

‡Herman Royer Professor of Political Economy, Travers Department of Political Science, University of California, Berkeley. E-mail: gailmard@berkeley.edu.

State capacity is the bedrock of effective governance. While much focus has been placed on conflict over what the government should do, equally important but more often overlooked is the government's ability to do it. Even where policy objectives are widely shared, governments may fail to deliver because they lack the capacity to implement those objectives effectively. When the state is unable to maintain public infrastructure, ensure adequate housing supply, or provide public order, political conflict centers not only on policy choice but on the limits of governance itself. In other words, state capacity becomes as important as state policy.

Bureaucratic agencies are the institutional machinery through which state capacity is realized, making their functioning central to understanding why governments succeed or fail. Existing work highlights two fundamental challenges to bureaucratic capacity. The first is building it. Developing high-capacity bureaucracies requires sustained investment and supportive leadership (Carpenter 2002; McDonnell 2020; Huber and Ting 2021; Goldstein 2024), as well as clear objectives, flexible (not onerous) procedures, and a competent workforce (Bagley 2020; Pahlka and Greenway 2024; Moynihan 2025; Klein and Thompson 2025). Even under favorable conditions, building capacity may be difficult or unsuccessful.

The second challenge to bureaucratic capacity is sustaining it over time. If capacity is difficult to create, it is often remarkably easy to erode. Political-administrative strategies of agency management can substantially degrade bureaucratic performance (Golden 1992; Brehm and Gates 1999; Krause, Lewis and Douglas 2006; Miller and Whitford 2016; Wood and Lewis 2017; Richardson, Piper and Lewis 2025). These strategies directly affect employee retention, which mediates agency capacity: politicization increases attrition (Doherty, Lewis and Limbocker 2019; Bolton, De Figueiredo and Lewis 2021) and diminishes bureaucrats' perceived influence over policy (Bertelli and Lewis 2012). Observers have warned repeatedly that these effects are playing out in real-time in the Trump administration. For example, FDA has lost nearly 20% of its workforce since President

Trump took office, including policy and information technology staff.[1] Reflecting on administrative turmoil within the FDA, one health policy researcher conceded, "[i]t's understandable why individuals may decide to move on rather than see the agency diminished in its works, and its resources, and its ability to do its job."[2]

This paper argues that the twin problems of bureaucratic capacity—that it is hard to get and easy to lose—are not distinct. Instead, they both stem from the same underlying process. To make this argument, we develop a novel theoretical model of bureaucratic capacity. In this model, we characterize bureaucratic capacity at the agency level in terms of micro-level incentives of idealized, individual bureaucrats.[3] In our model, bureaucratic capacity is not simply a *designed* property of an organization that depends on its procedures, mandates, and infrastructure. Rather, capacity is an *emergent* property of organizations that depends on the behavior of individuals within them. Crucially, in turn, both bureaucratic capacity and damage to it exhibit endogenous dynamic effects. The reason is that agents' beliefs about the behavior of other agents in a bureaucracy creates self-reinforcing levels of capacity. Therefore, building capacity can be difficult, because organizational attributes controlled by a designer do not necessarily create the shared expectations necessary for sustained capacity. Undermining capacity can be easy, because even a transitory disruption of agency workflow can damage shared expectations for high capacity.

The model rests on three key components. The first is *team production* within a bureaucratic agency (Gailmard 2024*a*). Formal models of bureaucratic capacity based on action of individual agents in the bureaucracy almost always assume there is just one strategic actor within the agency, who chooses whether to acquire information about some

[1] Nyah Phengsitthy, "FDA Cuts Threaten New Drugs as Reviewers Saddled With Extra Jobs," *Bloomberg Law* (April 15, 2024).

[2] Gabe Whisnant, "Five Key CDC Leaders Abruptly Retire Amid Agency Shakeup: What to Know," *Newsweek* (March 25, 2025).

[3] Bednar (2024) presents evidence of meaningful capacity variation at the agency level.

task (e.g., Gailmard and Patty 2007).[4] In truth, accomplishing anything in a bureaucracy typically requires action by multiple competent actors, including a corps of careerists and a political appointee. Team production captures this aspect of bureaucratic output. Further, agencies are more effective when managed by a competent, supportive political appointee (McDonnell 2020; Gailmard 2024*b*).

The second core component is *self-selection into bureaucracy* (Wilson 1989; Gailmard and Patty 2007; Gailmard 2010; Gailmard and Patty 2012; Gibbs 2020; Forand, Ujhelyi and Ting 2023). Individuals have multiple career options, and they pursue careers in public service because they care about the results they can produce.[5] Self-selection in our model captures the idea that when an agency is ineffective, skilled and competent individuals will tend not to select into it because their other options are more attractive.

The third core component is *overlapping generations* of bureaucrats. While bureaucratic agencies have long lives (but finite: see Carpenter and Lewis 2004), the individuals within them do not. Bureaucracies are built by individuals building successive but overlapping careers (Bils and Judd 2024). Senior bureaucrats transmit the values, expectations, and culture of their agency to junior members, who in turn become senior members and transmit agency culture to their junior colleagues (Wilson 1989; McDonnell 2020). Our model of overlapping generations of individual actors captures this aspect of bureaucracies.

The principal message of our model is that bureaucratic capacity is not simply a matter of establishing clear goals, solving the "everything bagel" problem, or curing the "procedure fetish" that afflicts agency design (Bagley 2020; Pahlka and Greenway 2024; Moynihan 2025; Klein and Thompson 2025). Instead, sustaining a high capacity

[4]Or, if there are multiple bureaucrats, they do not interact in a meaningful way to implement policy.

[5]We specifically consider how public service motivation affects self-selection into the bureaucracy. However, we acknowledge the role of agency mission in affecting the value of policy outcomes in public service (see e.g., Rourke 1984; Carpenter 2002; Akerlof and Kranton 2010). In our model, bureaucrats derive a payoff equal to the probability of policy success—implicitly valuing agency mission at 1—though it is possible to envision varying the coefficient (e.g., between 0 and 1) on agency policy success to capture variation in the value of agency mission.

bureaucracy requires shared expectations for capacity by each component of the bureaucracy. Specifically, senior bureaucrats must expect that skilled juniors will enter behind them; junior bureaucrats must expect that skilled seniors will tend to remain in their positions as seniors; and all bureaucrats must expect that management will be competent and generally supportive of the agency's work. Our analysis shows that these components are mutually reinforcing: neither seniors nor juniors nor management are the "most important," and each component is "good" only if the others are good. Shared expectations for high capacity is precisely what makes bureaucratic capacity persistent: when skilled bureaucrats expect management and other bureaucrats also to be good, they enter the bureaucracy and stay there.

Yet the centrality of shared expectations also makes bureaucratic capacity fragile. This is because shared expectations for high capacity can be broken by short periods of political manipulation or inept management. While sustaining bureaucratic capacity requires coordinated action by multiple agents in the team production process, undermining bureaucratic capacity requires only decentralized action by any one component of the team. The key results of our model illustrate this logic, by demonstrating that the impact of poor management may persist even after competent leadership of an agency is restored.

1 A Model

Agents and Time. The model describes the interaction of agents, and their effect on bureaucratic capacity, in each period of a discrete-time, infinite horizon game. Each agent lives for two periods in an overlapping generations structure. In each period t, a new cohort of agents is born, named the "junior cohort"; the junior cohort from $t-1$ becomes the "senior" cohort in t; and agents of the senior cohort from $t-1$ exit the game forever.

Each agent i is born with a fixed "skill level" $\sigma^i \in \{0, \overline{\sigma}\}$, where $\overline{\sigma} \in (0,1)$ is an exogenous, time-invariant parameter described further below. Thus each agent's skill level is either 0 or $\overline{\sigma}$. All agents' skill levels are common knowledge. In each cohort of agents there are multiple agents with skill level $\overline{\sigma}$, and multiple agents with skill level 0.

Bureaucrats and bureaucratic capacity. In each period t, a bureaucratic agency produces a discrete policy output using three actors: a "junior" bureaucrat j, a "senior" bureaucrat s, and a political manager m.[6]

Each actor i in the bureaucracy has a commonly known *quality* $q_t^i \in [0, 1]$ that is determined by their skill and experience. The political manager's quality in period t is simply the skill level, rescaled:

$$q_t^m = \frac{\sigma_t^m}{\overline{\sigma}}. \tag{1}$$

That is, $q_t^m = 1$ when $\sigma_t^m = \overline{\sigma}$, and $q_t^m = 0$ otherwise. The quality level $q_t^m = 0$ may indicate either that the manager is incompetent or actively obstructionist; $q_t^m = 1$ may indicate that the manager is competent or not actively obstructionist. The manager's skill and hence quality level are determined exogenously by political authorities as described below.

The junior bureaucrat's quality in period t is also their skill level, rescaled:

$$q_t^j = \frac{\sigma_t^j}{\overline{\sigma}}. \tag{2}$$

That is, $q_t^j = 1$ when $\sigma_t^j = \overline{\sigma}$, and $q_t^j = 0$ otherwise. The junior bureaucrat's skill and hence quality are determined endogenously in the game described below.

The senior bureaucrat's quality is a combination of skill and experience. Experience may come from government service, or non-government service that is transferrable to

[6] In the game structure, the "junior" and "senior" roles can be filled by any bureaucrat; they are not structurally restricted to the junior and senior cohorts respectively. The bureaucracy in our model does not practice age discrimination.

government. Let $x_g^s \in \{0,1\}$ be an indicator to capture whether agent s served in government in period $t-1$ (denoted $x_g^s = 1$) or not ($x_g^s = 0$). Let $x_n^s \in \{0,1\}$ be an indicator to capture whether agent s served in a role not in government in period $t-1$ (denoted $x_n^s = 1$) or not ($x_n^s = 0$). Let $\tau \in (0,1)$ be a time-invariant parameter that captures the transferability of experience between government and non-government service. Overall, agent s's quality in period t is

$$q_t^s = \sigma_t^s + (x_g^s + x_n^s \tau)(1 - \overline{\sigma}). \tag{3}$$

This equation embeds multiple possible quality levels, depending on s's skill and experience, in a compact form. It means that $q_t^s = 1$ if s is high skilled and experienced in government; $q_t^s = \overline{\sigma} + \tau(1-\overline{\sigma})$ if s is high skilled and experienced outside of government; $q_t^s = 1-\overline{\sigma}$ if s is low skilled and experienced in government; $q_t^s = \tau(1-\overline{\sigma})$ if s is low skilled and experienced outside of government; $q_t^s = \overline{\sigma}$ if s is high skilled but inexperienced; and $q_t^s = 0$ if s is low skilled and inexperienced.[7] Equation 3 also clarifies the precise meaning of the skill parameter $\overline{\sigma}$: it is the extent to which high skill can make up for inexperience to determine a senior agent's quality.

Next we define bureaucratic capacity. Our definition builds on two attributes of Weber's idealized bureaucracy: hierarchy and division of labor (Weber 1947).[8] Division of labor means that the work of the agency as a whole is divided across multiple agents, and each must each work effectively in order for the agency to do its job. Hierarchy means that the work of career officials is under control of higher-level officials—in our model, political managers. In view of these concepts, we define *bureaucratic capacity* in period t,

[7]Observe that equation 3 is agnostic about the relative quality of a skilled bureaucrat with non-government experience, and an unskilled bureaucrat with government experience. For small values of $\overline{\sigma}$, government experience contributes more to quality; for large values of $\overline{\sigma}$, skill contributes more to quality.

[8]A third attribute, career orientation, is built into the overlapping generations framework.

denoted y_t, as the product of the quality of each agent in the bureaucracy:

$$y_t = q_t^m q_t^j q_t^s. \tag{4}$$

Observe that $y_t \in [0, 1]$ may be interpreted as the probability[9] that the bureaucracy successfully implements a discrete task in period t. Equation 4 reflects division of labor as a form of *team production* in the bureaucracy: success in policy implementation requires multiple high-quality actors. A single agent cannot successfully implement a policy on their own. On the other hand, one ineffective, low-quality actor can undermine the efficacy of the entire process (Bendor 1985; Heimann 1997; Ting 2003).

We close this subsection with two remarks about bureaucratic capacity as defined by equation 4. First, it characterizes bureaucratic capacity in terms of fixed attributes of the agency's workforce (competence). Empirical research has found this to be a crucial attribute of capacity (Bednar 2024), and our theoretical analysis shows that this characterization yields rich and interesting dynamics. At the same time, this characterization is a simplification because endogenous actions of agents ("effort") may also improve agency performance. The present model is therefore a baseline for theorizing capacity but is flexible enough to include agent effort in future extensions. Second, $y_t = 1$ is possible under equation 4, in which case the agency definitely does successfully implement its task. One could expand the model so that $y_t = \kappa q_t^m q_t^j q_t^s$, where $\kappa \in (0, 1]$ is an exogenous upper limit on capacity due to, for example, onerous procedures or unclear tasks (Pahlka and Greenway 2024, Klein and Thompson 2025). This would straightforwardly imply that lower capacity limits κ make it harder to staff agencies with competent workers, and if κ is low enough, creates a "vicious cycle" for capacity.

[9]Specifically $y = 0$ can be interpreted as a "baseline" probability that an ineffective agency accomplishes a task, and $y > 0$ as improvements relative to that baseline. This is explicit if we generalize to $y_t = \tilde{y} + q_t^m q_t^j q_t^s (1 - \tilde{y})$, where $\tilde{y}$ is an exogenous "baseline" capacity for an agency with unskilled, inexperienced staff. We opt not to use this formulation because it introduces a new parameter, $\tilde{y}$, without changing any basic insights.

Implicitly we assume $\kappa = 1$, not to negate the importance of procedural problems, but rather to show that solving all procedural problems still may not create high capacity.

Agent Utilities and Outside Options. Agents who work as junior or senior bureaucrats in period t benefit from agency success in that period, the probability of which is y_t. They also obtain a time-invariant payoff $\mu \in [0, 1]$ for every period they serve in government. This term captures *public service motivation* or PSM as an exogenous factor (Perry and Wise 1990; Perry 1996; cf. Forand, Ujhelyi and Ting 2023). The total payoff to agent i from serving in government in period t is

$$u_t^i = y_t + \mu. \tag{5}$$

Note that there is no explicit spatial or ideological component of agents' utility. However, an ideological commitment may be inferred from the agent's value of bureaucratic capacity: agents must share the bureaucracy's mission to value bureaucratic capacity.[10]

In each period t, agents who do not work in the bureaucracy instead take an exogenous, non-government employment option. For an agent in the senior cohort in period t, utility from their non-government option is

$$v_t^s = \pi(\sigma^s + (\tau x_g^s + x_n^s)(1 - \overline{\sigma})) \tag{6}$$

where π is a fixed, exogenous private sector skill factor. We assume $\pi > 1$, which means that a given skill level obtains greater compensation outside the bureaucracy than in it (cf.

[10]A bureaucrat's utility for y_t and μ can both be interpreted as distinct forms of public service motivation. The utility for capacity y_t is PSM that agents obtain from working for an *effective* agency whose mission they value. The term μ is PSM that agents obtain from working for *any* government agency. It seems plausible that both intrinsic and efficacy-contingent motivations affect PSM, and PSM measurement scales can be said to incorporate both. For example, Perry (1996) associates PSM with interest in "the give and take of policy making" and a sense that "public service is [a] duty," which are not efficacy-contigent; but also associates PSM with "meaningful public service," which arguably is efficacy-contingent.

Gibbs 2020). As with the senior bureaucrat's quality q_t^s (equation 3), the senior agent's outside option depends on their skill and experience. However, in equation 6, government experience x_g^s is weighted by the transferability factor τ: here this captures how easily an agent can apply government experience in non-government roles.

For an agent in the junior cohort in period t, utility from their non-government option is

$$v_t^j = \pi\sigma^j. \tag{7}$$

Notice that $\pi > 1$ implies that high skilled agents ($\sigma = 1$) obtain strictly greater utility from the outside option than low skilled agents ($\sigma = 0$), whether junior or senior.

Strategies, Timing, and Bureaucrat Selection Protocol. The strategic actors we analyze are the young and old agents in any given period. While there are many role-age combinations, each has a very simple choice set. Specifically, in period t a senior actor who worked in government in $t-1$ can attempt to stay in government work or exit for their non-government option. A senior who worked out of government in $t-1$ can attempt to enter government work or remain out of government. A junior actor can attempt to enter government work or take work out of government.

Given that there are always more agents than roles in the bureaucracy, it is necessary to specify how candidates for the bureaucracy are selected. Our model reflects two features of contemporary civil service: bureaucrats who enter in junior roles can typically progress through the ranks if they wish; and bureaucracies select for skill and, when possible, experience. Specifically, the bureaucracy in any period t uses the following selection protocol to select candidates for each role.

- The political manager is exogenously filled by a non-strategic actor.
- The senior bureaucrat position in time t is filled in the following order of priority:

(1) by the junior agent from time $t-1$; (2) by the agent with the highest quality level q_i^s who will take the role.

- The junior bureaucrat position in time t is filled in the following order of priority: (1) by a skilled agent; (2) by an unskilled agent.
- The selection protocol for a position stops at the first priority tier with an agent willing to accept the position, and that agent takes the position. If multiple agents at a given priority step are willing to take the position, it is randomly allocated among them. If a position p cannot be filled by this protocol in period t, then $q_t^p = 0$.

Given the constraint of civil service protection and willingness of agents to public service, this selection protocol maximizes bureaucratic capacity y_t as defined in equation 4.

The game within period t proceeds as follows:

1. The manager m is selected and their quality q_t^m is revealed to all players.
2. The senior and junior bureaucrat positions, s and j, are filled as described above, to determine the quality of bureaucrats q_t^s, q_t^j.
3. Agency output is produced with probability y_t.

The infinite-horizon game proceeds with complete observability of all agents' round t play in round $t+1$. The game has common knowledge of all parameters and actions so the natural equilibrium concept is subgame perfect Nash equilibrium (SPNE). Formal proofs of propositions are in the appendix.

2 Paths of Agency Capacity

The model enables a precise characterization of agencies exhibiting positive capacity at any point in time. It is clear from equations 2 and 4 that an agency with positive capacity in period t, $y_t > 0$, must attract skilled juniors and possess competent political management in that period.

Capacity is not only positive but maximal for any agency with three components, which we call the *skill-experience cycle*.

1. Competent political management that supports the agency's actions, $q_t^m = 1$.

2. Entry by skilled junior bureaucrats, $q_t^j = 1$.

3. Retention of skilled senior bureaucrats, who obtained experience in the agency over their careers, $q_t^s = 1$.

An agency in the skill-experience cycle operates as effectively as possible—that is, $y_t = 1$—regardless of the technical-economic environment characterized by $\pi, \tau, \overline{\sigma}$. The skill-experience cycle is so named because it combines the two elements that are jointly sufficient for high agency capacity (skill and experience), even though neither element is generally sufficient alone. It describes agencies where success depends on "institutional memory" and first-hand knowledge of programs the agency implements, as well as the analytical skill that agents bring to the table. There are many agencies that have successfully completed the skill-experience cycle. One example is the US Foreign Service, where skilled junior agents enter; work alongside skilled, experienced senior agents; then progress to the senior ranks with new, skilled junior agents entering behind them. Another example is the Ghanaian Ministry of Planning as characterized by McDonnell (2020).

While the skill-experience cycle ensures maximum capacity in every period, it is not the only model of an agency with positive capacity. One possibility is the *skilled juniors* cycle.

1. Competent political management that supports the agency's actions.

2. A cadre of skilled junior bureaucrats that enter and exit the agency together.

3. No bureaucrats from the senior cohort.

In the skilled juniors model, agency capacity is $y_t = \overline{\sigma}$. The "senior" role is held by an agent from the junior cohort, who lacks expertise inside the agency. This accounts for the "missing" $1 - \overline{\sigma}$ from agency capacity. However, when agency success depends greatly on the analytical or technical skill of its staff, and less on their experience, the skilled juniors model yields a high-capacity agency. This scenario is captured by $\overline{\sigma} \approx 1$. An approximate example of the skilled juniors model with high capacity is the Office of Management and Budget (OMB) in the US: staff turnover is fairly high, but OMB is consistently regarded as an effective agency. These traits go together when the agency's work relies heavily on analytical skill of its staff and is supported by top management—both of which seem characteristic of OMB.

There are two other stationary cycles of positive-capacity agencies:

(*i*) In every period, a skilled junior enters; the rising, skilled senior departs; and a skilled, inexperienced senior enters from outside the bureaucracy. In this case capacity is $y_t = \overline{\sigma} + \tau(1 - \overline{\sigma})$.

(*ii*) In every period, a skilled junior enters; the rising, skilled senior departs; and an unskilled, inexperienced senior enters from outside the bureaucracy. In this case capacity is $y_t = \tau(1 - \overline{\sigma})$.

We will not consider these cycles further. The first is impossible in any equilibrium.[11] The second occurs in equilibrium only if the skill-experience cycle also occurs in equilibrium, so the bureaucrat selection protocol specified above rules it out.

Characterizing high-capacity agencies sharpens the questions we are trying to answer with this analysis. We want to know: (1) What capacity can be sustained in equilibrium, given strategic behavior by bureaucratic agents? (2) How much capacity can an agency

[11]If the rising skilled senior will not stay in the bureaucracy, a skilled, inexperienced senior will not enter.

recover, and how quickly, when it experiences a transitory "shock" of bad or hostile management?

3 The Persistence of Bureaucratic Capacity

One of our primary questions is how bureaucratic capacity can be sustained over time. The question is subtle in our model because bureaucratic capacity is an emergent property of an organization, not a designed one. It depends on the quality of individual agents who make up the bureaucracy. Those agents make decentralized but interdependent career decisions. An objective of our model is to analyze how these decentralized decisions endogenously construct bureaucratic capacity.

The definition of bureaucratic capacity in equation 4 stipulates that "high quality" management ($q_t^m = 1$) is required for high bureaucratic capacity. In this section, we analyze the equilibrium, "steady state" level of bureaucratic capacity under the assumption of sustained, high quality management. That is, all political authorities from all viable political parties share a commitment to an effective bureaucracy. Formally, this shared commitment means $q_t^m = 1$ for all periods t.

We focus on SPNE in stationary strategies of all agents of a given cohort and skill level.[12] We first assess the incentives of the senior cohort, identifying conditions under which senior government employees will remain in government service or exit; and conditions under which senior non-government employees will choose to enter government service when possible. Then, we assess the incentives of junior employees to enter government or opt for private sector employment.

Senior cohort. Consider a senior agent i in the senior cohort in period t who worked in the bureaucracy in $t-1$ and has skill level σ^s. This bureaucrat should stay in the

[12] Stationarity entails that an agent's actions in a given time period t may depend on their position in their life cycle, their attributes, and the attributes of other components of the bureaucracy in t, but not on the time index t.

bureaucracy in t if and only if $u_t^i \geqslant v_t^i \Leftrightarrow q_t^m q_t^j(1+\sigma^s-\overline{\sigma})+\mu \geqslant \pi(\sigma^s+\tau(1-\overline{\sigma}))$, or

$$\mu \geqslant \begin{cases} \pi\tau(1-\overline{\sigma}) - q^m q^j + \pi\overline{\sigma} & \text{if } i \text{ is skilled} \\ \pi\tau(1-\overline{\sigma}) - q^m q^j(1-\overline{\sigma}) & \text{if } i \text{ is unskilled.} \end{cases} \tag{8}$$

Observe that in either case, i is more inclined to remain in the bureaucracy in period t if both other actors, m and j, are high quality than if either is low quality.

Junior cohort. Now consider the calculus of an agent k in the junior cohort deciding whether or not to enter government employment. His decision depends not only on his own skill and the current political leadership in an agency, but also on his expectations of future government capacity.

Agent k entering the bureaucracy at time t obtains lifetime utility

$$U^t = q_t^m q^k q_t^s + \mu + \max\{q_{t+1}^m q_{t+1}^j(1+\sigma^k-\overline{\sigma})+\mu, \pi(\sigma^k+\tau(1-\overline{\sigma}))\}. \tag{9}$$

Agent k entering non-government service at time t obtains lifetime utility

$$U^t = \pi\sigma^k + \max\{q_{t+1}^m q_{t+1}^j(\sigma^k+\tau(1-\overline{\sigma}))+\mu, \pi(1+\sigma^k-\overline{\sigma})\} \tag{10}$$

if a position is available in the bureaucracy in period $t+1$, and

$$U^t = \pi\sigma^k + \pi(1+\sigma^k-\overline{\sigma}) \tag{11}$$

if a position is not available in the bureaucracy in $t+1$.

Capacity Persistence in Equilibrium. Suppose $q^m = 1$ in all periods t. Define $\overline{\pi}_g \equiv \pi(\overline{\sigma}+\tau(1-\overline{\sigma}))$ as the utility of a skilled senior agent who leaves government.

Proposition 1 *The skill-experience cycle is a stationary SPNE, and capacity persists at* $y = 1$ *every period, provided*

$$\mu \geqslant \frac{\pi(1+\overline{\sigma})}{2} - 1 \tag{12}$$

$$\mu \geqslant \pi(\overline{\sigma} + \tau(1-\overline{\sigma})) - 1. \tag{13}$$

Equations 12 and 13 are, respectively, the entry constraint for a skilled junior agent, given that the skilled senior stays in t and a skilled junior enters again in $t+1$; and the retention constraint for a skilled senior agent, given that skilled juniors enter. When they are satisfied, skilled juniors enter and plan a bureaucratic career, because they serve under skilled and experienced senior bureaucrats, and expect skilled juniors to follow them when they rise in seniority. Further, skilled senior agents with agency experience actually prefer to complete their planned career, rather than leave government.

Observe that the senior constraint (equation 13) becomes harder to satisfy as τ increases. The reason is that as experience transferability grows, exit is more tempting for the rising senior bureaucrat. Therefore, when high-quality political management is assured each period, increasing τ decreases the scope for persistent capacity.

If the skill-experience cycle is incentive compatible, it will be implemented by the selection protocol described above because this protocol always maximizes agency capacity. If the skill-experience cycle is not incentive compatible, the skilled-juniors cycle might be.

Proposition 2 *The skilled-juniors cycle is a stationary SPNE, and capacity persists at* $y = \overline{\sigma}$ *every period, provided*

$$\mu \geqslant \pi(1 - \tau(1-\overline{\sigma})) - \overline{\sigma} \tag{14}$$

$$\mu < \pi(\overline{\sigma} + \tau(1-\overline{\sigma})) - 1. \tag{15}$$

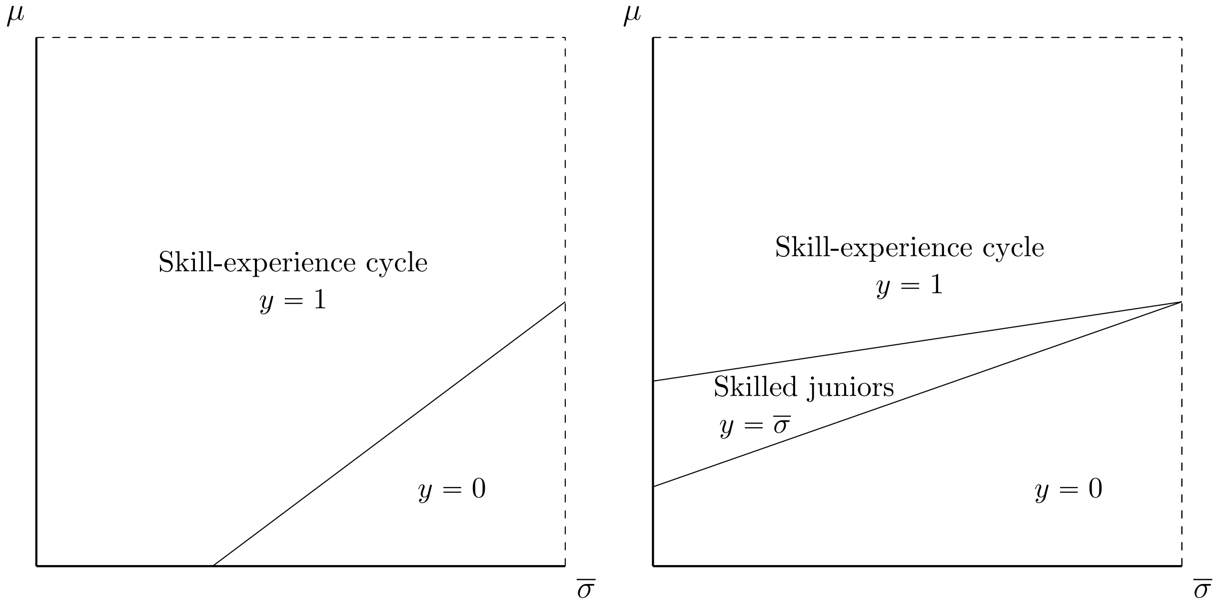
The first is the incentive constraint for two skilled juniors to enter the agency and plan to depart the agency after a single period. The second is for experienced senior agents to follow through on that plan. Observe that equation 15 is the negation of equation 13, and its assumes entry by a skilled junior if the skilled senior should stay.

In combination, equations 14 and 15 require relatively large experience transferability τ. In particular, the skilled-juniors cycle occurs in equilibrium only if $\tau > 1/2$. This is necessary for a skilled junior to enter the agency and plan to leave, rather than "cash in" on their skill in a private sector career starting as a junior. When τ is small, a skilled junior knows they will sacrifice a lot by leaving the agency as a senior, so avoids agency work entirely rather than incur that future cost.

If neither the skill-persistence nor skilled-juniors cycle is supportable in equilibrium, then the agency has capacity $y_t = 0$ in every period. As noted in the previous section, any path to $y_t > 0$ requires skilled juniors. But skilled seniors with no government experience will not enter whenever skilled, experienced seniors prefer not to stay in government. Unskilled, inexperienced seniors might enter, but the entry constraint for skilled juniors coupled with such a senior agent is strictly tighter than that for skilled juniors coupled with skilled, experienced seniors. Therefore, an equilibrium with unskilled, inexperienced seniors exists only when the skill-experience equilibrium also exists.

The results of this section are depicted in figure 1. For $\tau > 1/2$, the skilled-juniors cycle may occur in equilibrium, but not if $\tau \leqslant 1/2$. Notably, for given values of $\overline{\sigma}, \pi$, and τ, increasing PSM μ is always weakly beneficial for capacity persistence. Further, the range of μ for which the skill-experience cycle is an equilibrium is strictly decreasing in $\overline{\sigma}$.

One way to think of experience transferability τ is as the scope for "revolving door" relationships between agencies and the private sector. When τ is large, the revolving door is wide open, but it is narrow when τ is small. Construed in this way, revolving door relationships have countervailing effects on capacity persistence. On one hand, an open revolving door makes the skill-experience cycle harder to consummate. Larger τ makes



(a) $\pi = 1.5$, $\tau = 0.5$. (b) $\pi = 1.5$, $\tau = 0.9$.

Figure 1: Capacity persistence. Each subfigure depicts a unit square.

exit more tempting for skilled senior agents with government experience. Closing the door means that the skill-experience cycle is incentive compatible for a larger range of PSM levels μ. On the other hand, if the skill-experience cycle is not incentive compatible, an open revolving door expands the scope for the skilled-juniors cycle of capacity. Specifically, it expands the range of PSM levels μ such that skilled juniors plan to enter government service and stay for one period.

4 The Fragility of Bureaucratic Capacity

Recent events in U.S. bureaucratic politics raise the question of not only how bureaucratic capacity can be sustained over time, but how capacity can recover from "management shocks" intended to undermine it, such as the installation of agency management that is incompetent or hostile to the agency's mission. We address that question in this section.

Broadly, there are two reasons why a management shock in one administration could affect bureaucratic capacity in future administrations. One is a *signaling effect* of bad political management. The period-t shock can signal a decaying commitment to bureaucratic capacity by future administrations of the same party. When that party vandalizes agencies once, current and potential bureaucrats might infer it is likely to do so again in the future, and this inference could affect their behavior. The second reason is a *dynamic effect* of bad management: that a management shock in period t in itself degrades future agency capacity, even if there is never another episode of bad management. To analyze the dynamic effect, we wish to remove the signaling effect from consideration: to isolate the effect of political undermining in period t, and only period t, on capacity in future administrations. Thus our question is, what if political authorities undermined capacity in period t, but never undermined it again? This question taps into the dynamic effects of political intervention in bureaucratic capacity.[13]

In the real world, political undermining of bureaucratic capacity is unlikely to happen only once. It happens because a political party no longer shares a commitment to high capacity, and when that state occurs it is likely to occur again. At the same time, if even a single period of undermining can durably affect capacity, then the prospects for sustaining capacity are even more tenuous when future administrations of a given party are also likely to undermine it.

Formally, consider an agency with competent management $q^m = 1$ in every period except a single "surprise" of $q^m = 0$ in period t. Good management was installed in all periods before t, and $q^m = 1$ is guaranteed in all subsequent periods. How much capacity can the agency recover, and how quickly, after this single shock of bad management? We analyze this question assuming agents use stationary strategies.[14]

[13]The signaling effect is also interesting. It suggests that management quality is stochastic in each period, and asks how capacity responds. We defer analysis of this to future work.

[14]We interpret the negative shock to the bureaucracy $q^m = 0$ as "bad management," but the model allows a broader interpretation. The negative shock could be anything that temporarily damages agency performance or output, such as a major budget cut (Wood 1988), reductions-in-force, or a vacant leadership position (Richardson, Piper and Lewis 2025). We focus on "management shocks" partly as shorthand and partly because this is a focal tactic for anti-administration presidents.

Fragile Capacity in the Skill-Experience Cycle. Consider an agency in the skill-experience cycle: equations 12 and 13 hold, or $\mu \geqslant \max\left\{\frac{\pi(1+\overline{\sigma})}{2} - 1, \overline{\pi}_g - 1\right\}$. Assume that the agency has defined positions so that one must be filled by an experienced (senior cohort) agent, and one by an inexperienced (junior cohort) agent.

First, immediate capacity recovery is possible, if public service motivation μ is sufficiently high, and the high-skill level $\overline{\sigma}$ and private skill premium π are not too great.

Proposition 3 *If $\mu \geqslant \frac{\pi(1+\overline{\sigma})-1}{2}$, then capacity recovers to $y = 1$ in period $t+1$ and all subsequent periods.*

In this case the skilled junior incumbent in t remains in their post, rises to senior ranks in $t+1$, and is followed by a skilled junior in $t+1$. Capacity is durable: the skill-experience cycle is reestablished in one period.

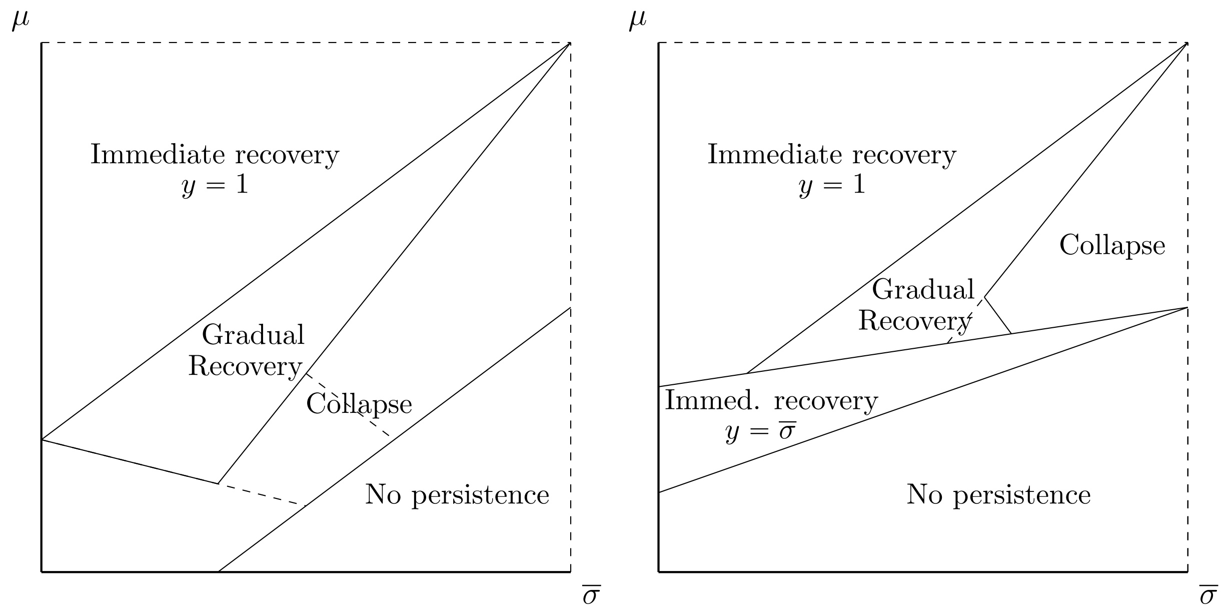
Observe that the required μ is increasing in $\overline{\sigma}$, the skill level of the high-skill agent. Immediate recovery is harder in agencies that rely on highly skilled agents to complete the skill-experience cycle. The reason is that these agents have more attractive non-government options. If $\overline{\sigma} > \frac{3}{\pi} - 1$, then immediate recovery is impossible. For instance, if $\pi > 1.5$ then there is a threshold for $\overline{\sigma}$ above which immediate recovery is impossible.

Figure 2 displays the paths of capacity recovery. Proposition 3 is reflected in the upper-left region, "immediate recovery."

Second, if immediate capacity recovery is not possible, a gradual recovery may be.

Proposition 4 *If $\mu < \frac{\pi(1+\overline{\sigma})-1}{2}$, but $\mu \geqslant \max\left\{\frac{(\pi-1)(1-\overline{\sigma})}{2}, \frac{\pi(1+\overline{\sigma})-(1-\overline{\sigma})-1}{2}\right\}$, then capacity recovers to $y = 1 - \overline{\sigma}$ in $t+1$, and $y = 1$ in $t+2$.*

In this case the skilled junior incumbent from t departs. An unskilled junior enters in t, who remains as an experienced, unskilled senior in $t+1$. A skilled junior enters in $t+1$ and remains to $t+2$ as a skilled, experienced senior. A skilled junior enters in $t+2$. The



(a) $\pi = 1.5$, $\tau = 0.5$. (b) $\pi = 1.5$, $\tau = 0.9$.

Figure 2: Capacity recovery. Each subfigure depicts a unit square.

skill-experience cycle is fully reestablished after two periods.[15]

For relatively low levels of $\overline{\sigma}$, the binding constraint for gradual recovery is $\mu \geqslant \frac{(\pi-1)(1-\overline{\sigma})}{2}$. This constraint means that the unskilled junior is willing to enter under the management shock, given that they expect to be followed by a skilled junior in $t+1$. This constraint is decreasing in $\overline{\sigma}$. For relatively high levels of $\overline{\sigma}$, the binding constraint is $\mu \geqslant \frac{\pi(1+\overline{\sigma})-(1-\overline{\sigma})-1}{2}$, which ensures the skilled junior is willing to enter under an unskilled, experienced senior, provided they expect to be followed by a skilled junior in the next period. As with the constraint for immediate recovery, this requires an increasing μ as $\overline{\sigma}$ increases; and for π large enough, it cannot be met for the largest $\overline{\sigma}$ levels.

There is another path of gradual capacity recovery: if no agents enter in period t under the management shock, the agency has an empty pipeline in period $t+1$. It is possible that a skilled, inexperienced senior, and a skilled junior, enter simultaneously in $t+1$—each doing so because they expect the other to do so. Then in $t+2$, the skilled junior rises

[15] We reiterate that this result, like others in this subsection, takes as given equations 12 and 13. In particular, equation 13 may be binding among all conditions in proposition 4.

to the senior ranks, and another skilled junior enters. At this point the skill-experience cycle is reestablished.

Proposition 5 *If* $\mu < \max\left\{\frac{(\pi-1)(1-\overline{\sigma})}{2}, \frac{\pi(1+\overline{\sigma})-(1-\overline{\sigma})-1}{2}\right\}$ *and* $\mu < \max\left\{\frac{\pi(1-\overline{\sigma})}{2}, \pi\tau(1-\overline{\sigma})\right\}$, *but* $\mu \geqslant \pi - \overline{\sigma} - \tau(1-\overline{\sigma})$, *then capacity recovers to* $y = \overline{\sigma} + \tau(1-\overline{\sigma})$ *in* t, *and* $y = 1$ *in* $t+2$.

This recovery path exists if and only if experience transferability τ is fairly large. This is necessary to ensure that a skilled, inexperienced senior is willing to enter in $t+1$, but an unskilled, experienced senior is unwilling to remain in their position with an unskilled junior.[16]

Third, if capacity recovery (immediate or gradual) is impossible, then agency capacity permanently collapses. In this case, agency capacity is fragile: while the skill-experience cycle holds under permanent good management, a single period of bad management disrupts it completely.

There are two variants of fragile capacity. The first occurs when a perverse cycle of low-skilled entry and retention takes hold under the management shock in period t, and repeats in each period.

Proposition 6 *If* $\mu < \max\left\{\frac{(\pi-1)(1-\overline{\sigma})}{2}, \frac{\pi(1+\overline{\sigma})-(1-\overline{\sigma})-1}{2}\right\}$, *but* $\mu \geqslant \max\left\{\frac{\pi(1-\overline{\sigma})}{2}, \pi\tau(1-\overline{\sigma})\right\}$, *then capacity never recovers:* $y = 0$ *for all* t *after management shock.*

In this scenario, the skilled junior incumbent departs in period t. An unskilled junior enters in t, and remains in $t+1$. A skilled junior will not enter in $t+1$ but an unskilled junior will. Period $t+2$ then repeats $t+1$: an unskilled, experienced senior remains in office; and a skilled junior will not enter but an unskilled junior will. All subsequent periods perpetuate this cycle, with capacity $y = 0$ in each period beginning in t.

[16] Another path of gradual recovery occurs when no agents enter in t, and in $t+1$, an unskilled, inexperienced senior agent enters along with a skilled junior. However, the incentive constraints necessary for this path are tighter than those in proposition 5.

This variant of capacity collapse may actually be perpetuated by civil service rules protecting the right of the junior employee to progress to senior ranks if they choose. Absent civil service protections, the agency could, in a given period, terminate the rising, unskilled senior. Then the agency has two open positions, and if τ is large enough, could fill the senior position with a skilled, inexperienced agent, and the junior position with a skilled agent. This is the recovery path described in proposition 5. Civil service protections make this path unavailable whenever an unskilled, experienced agent seeks advancement in the bureaucracy. Thus, while civil service rules are sometimes heralded as protectors of capacity (e.g., Gailmard and Patty 2007, Gailmard and Patty 2012), this depends on a skilled and capable workforce in place. However, low-capacity agencies can also be locked into their state by civil service rules. In this sense, our analysis dovetails with arguments of Pahlka and Greenway (2024) that, in some cases, flexibility on civil service protections may be needed to raise capacity or restore it after management disruptions.

Another variant of fragile capacity occurs when the agency cannot recruit a complete team of agents to fill its ranks. This happens if, for instance, a skilled, inexperienced senior will not enter government, even alongside a skilled junior under good management. When these agents lack incentive to enter, the agency cannot re-start a skill-experience cycle.

Proposition 7 *If* $\mu < \max\left\{\frac{(\pi-1)(1-\overline{\sigma})}{2}, \frac{\pi(1+\overline{\sigma})-(1-\overline{\sigma})-1}{2}\right\}$, *and* $\mu \geqslant \pi - \overline{\sigma} - \tau(1-\overline{\sigma})$, *then capacity never recovers:* $y = 0$ *for all* t *after management shock.*

Observe that an important reason for fragile capacity is precisely the division of labor built into the bureaucracy's work process, represented as a multiplicative interaction in $y_t = q_t^m q_t^s q_t^j$ (equation 4). This interaction means that low quality in one role has a particularly pronounced effect on the value of quality in other roles. Good agents do not enter when their quality would be wasted in teams of low quality agents; even quality agents who value public service are better off pursuing non-government options.

Unfortunately, selection out by high-quality agents keeps agency capacity low, which reinforces selection out by high-quality agents. The agency gets stuck in a low-capacity "trap" due to division of labor across integrated roles.[17]

The upshot fragile capacity is that short-run shocks to agency performance can have long-run effects on agency performance. Whereas Richardson, Piper and Lewis (2025) show that management disruptions (appointee vacancies, in their case) during a presidential administration can undermine agency performance *in that same administration*, our results imply that major disruptions can undermine agency performance *well into future administrations*. The reason is that agency capacity depends on shared expectations by high-quality agents that an agency will be effective, and major disruptions can break that shared expectation. In other words, scholars have noted the *static* or *contemporaneous* effects of management shocks on capacity, but should also consider the *dynamic* effects highlighted in our model.

Capacity Recovery with Flexible Experience Requirements. Propositions 6 and 7 describe capacity collapse when an agency requires junior and senior agents to fill out its ranks. On one hand, this is a reasonable reflection of constraints on agencies when positions are defined in terms of experience levels that de facto restrict the cohorts to which entrants can belong. On the other hand, agencies may wish to revisit these definitions in the event of a crisis of capacity. For example, it would seem desirable for an agency facing a collapse of the skill-experience cycle to transition to a skilled-juniors cycle.

Specifically, a possible transition is for an agency with no entrants in period t, to two skilled junior entrants in $t+1$. This implies $y = \overline{\sigma}$ in period $t+1$. Equation 13, one of the

[17] An interesting question is how an agency can build substitutability between agents into its work flow, and the possible tradeoffs between maximal capacity and capacity resilience. This could be studied with different formalizations of agency capacity y_t, involving additive as well as multiplicative components. In these cases the marginal effect of one agent's quality is less dependent on other agents, but the level of capacity (hence incentive constraints for selection) still depends on all agents. We leave these issues for future research.

baseline conditions of the skill-experience cycle, implies that both of these $t+1$ entrants would prefer to stay in $t+2$ than depart the agency. Let us suppose that the agency defines its experience requirements so that in every period, at least one position must be filled by an inexperienced agent. Then the $t+1$ entrants essentially flip a coin to determine progression to $t+2$. In $t+2$, the advancing agent will be skilled and experienced; by equation 12, a skilled junior is willing to enter. At this point, the skill-experience cycle is reestablished and capacity recovers completely. Altogether, agency capacity is $y_t = 0$, $y_{t+1} = \overline{\sigma}$, $y_{t+2} = 1$, and $y = 1$ in all subsequent periods.

Proposition 8 *If* $\mu < \max\left\{\frac{(\pi-1)(1-\overline{\sigma})}{2}, \frac{\pi(1+\overline{\sigma})-(1-\overline{\sigma})-1}{2}\right\}$ *and* $\mu < \max\left\{\frac{\pi(1-\overline{\sigma})}{2}, \pi\tau(1-\overline{\sigma})\right\}$*, but* $\mu \geqslant \frac{2}{3}\left(\pi(1+\overline{\sigma}) - \frac{\pi(\overline{\sigma}+\tau(1-\overline{\sigma})+1}{2} - \overline{\sigma}\right)$*, then capacity recovers to* $y = \overline{\sigma}$ *in* t*, and* $y = 1$ *in* $t+2$*.*

The key constraint for this path of recovery is $\mu \geqslant \frac{2}{3}\left(\pi(1+\overline{\sigma}) - \frac{\pi(\overline{\sigma}+\tau(1-\overline{\sigma})+1}{2} - \overline{\sigma}\right)$. This constraint means that a skilled junior is willing to enter an "empty" agency alongside another skilled junior; and then, as a senior agent, remain in the agency with probability $\frac{1}{2}$ with a skilled junior entrant, and depart from government employment with probability $\frac{1}{2}$.

Like proposition 5, proposition 8 requires a relatively large value of τ. This raises the value of a career path that starts in the bureaucracy and ends in the private sector, which is part of both recovery paths.

Interestingly, when τ is large enough that 5 or 8 hold, there are increases in PSM μ that *inhibit* capacity recovery. With lower PSM, unskilled juniors will not enter in t, so both positions are clear in $t+1$, and the gradual recovery path is possible. With greater PSM, unskilled juniors will enter in t, and rise to the senior ranks even if an unskilled junior enters again behind them. Essentially, higher μ raises the value of public sector employment to unskilled juniors, so they can enter under a management shock and "clog up" the agency career ranks—making it unappealing for skilled juniors to enter.

Fragile Capacity in the Skilled-Juniors Cycle. Next consider an agency where the skill-experience cycle does not hold, but the skilled-juniors cycle does: that is, equations 14 and 15 are satisfied. This agency is completely immune to shocks in political management. Capacity does not depend on linking decisions of agents across successive cohorts; it depends on coordinated actions by agents in a single cohort. Therefore, $y = 0$ in the period of $q^m = 0$, but $y = \overline{\sigma}$ in all subsequent periods after the shock passes.

Proposition 9 *If* $\pi(1 - \tau(1 - \overline{\sigma})) - \overline{\sigma} \leqslant \mu < \pi(\overline{\sigma} + \tau(1 - \overline{\sigma})) - 1$*, then capacity recovers to* $y = \overline{\sigma}$ *in period* $t + 1$ *and all subsequent periods.*

Our view is that agencies which thrive on generalist, analytical skill of an energetic workforce—such as the Office of Management and Budget (OMB)—best fit the skilled-juniors template. An executive may decline to utilize these agencies fully, and this will temporarily "clear the decks" in the agency. But the replacement executive can generate coordinated entry by a new staff of skilled juniors at any time. So a transitory decline in capacity for such an agency does not produce a long-term "hollowing out," as it does for agencies built on the skill-experience cycle.

Overall, the results of this section reveal several important insights. First, capacity may be partially or completely fragile in high-capacity bureaucracies characterized by the skill-experience cycle. Agencies can partially mitigate fragility by redefining experience requirements of bureaucrats in case of a crisis, but cannot fully mitigate fragility. Second, when capacity is fragile, its recovery is more likely for agencies with high experience transferability to the private sector τ, and high skill requirements for its junior agents (high $\overline{\sigma}$). On the other hand, high levels of τ will usually be associated with "revolving door" issues, and in that sense the revolving door partly mitigates fragility. Third, capacity in bureaucracies characterized by the skilled-juniors cycle is not fragile, it is completely immune to short-term management shocks.

Despite the prevalence of fragility under a variety of scenarios in our model, our fundamental point is not that bureaucratic capacity will be lost forever after a transitory disruption. Rather, our results mean that capacity cannot be restored to fragile agencies simply by returning to "business as usual." Such agencies require leadership to infuse talent and reinvigorate shared expectations of capacity. Like academic departments seeking to raise their profile in a scholarly area with "cluster hires" of multiple top scholars at once, agencies with disrupted capacity need a coordinated infusion of talent to establish expectations that in turn attract talent. But the cluster hiring analogy also raises concern that the infusion is easier planned than accomplished.

5 Conclusion

Bureaucratic capacity is essential for the government to accomplish its objectives. Yet despite a substantial body of insightful research, building and maintaining bureaucratic capacity has proved challenging. Cultures of capacity may certainly persist when successfully built, but capacity seems hard to build and easy to lose.

In this paper we explain these dynamics through a formal model of bureaucratic output in which an agency's capacity emerges endogenously from the actions of individual agents, such that capacity is self-sustaining or "sticky" in equilibrium. The model depends on three important features: team production of bureaucratic output; self-selection into bureaucracy that is correlated with skill; and overlapping generations of careerists. The key effect of this structure is that sustaining bureaucratic capacity requires coordinated decisions by multiple agents to enter and remain in the bureaucracy; but undermining bureaucratic capacity requires only uncoordinated and decentralized decisions of any of those agents to exit. That exit can be engineered by even a single incompetent administration, which damages the career prospects of agents who remain. Moreover, once capacity is undermined, rebuilding it requires that new entrants into government service reestablish experience that sustains a skilled and capable work force. This can take time, and it may be impossible. In short, team production builds in complementarity that can enhance bureaucratic output under optimal conditions, but also make bureaucratic capacity fragile.

The results take a step toward explaining the stickiness of bureaucratic capacity or incapacity. This stickiness is normatively important but is assumed in previous models of capacity development without providing microfoundations.

Finally, our framework explains why the partisan impulse to "break the bureaucracy" can impose long-run costs. While short-run shocks to agency activity may sometimes be democratically appropriate reactions to changing political principals, the long-run costs that these shocks impose on the polity are normatively trickier.

The results suggest several directions for future research. First is to enrich the model of agency capacity. We consider only agents and their intrinsic capability. The dynamics are already very rich, but nevertheless obscure how the "procedural thicket" layered on agencies may hamper their efficacy—even with high-quality staff. A second direction is to consider richer agency structures to accommodate substitutability as well as complementarity between teams of agents. A third direction would involve endogenous agency effort. Fourth is a model with stochastic negative shocks, rather than a single one-time shock.

References

Akerlof, George A. and Rachel E. Kranton. 2010. *Identity Economics: How Our Identities Shape Our Work, Wages, and Well-Being*. Princeton University Press.
URL: *http://www.jstor.org/stable/j.ctt7rqsp*

Bagley, Nicholas. 2020. "The Procedure Fetish." *Michigan Law Review* 118(3):345–401.

Bednar, Nicholas. 2024. "Bureaucratic autonomy and the policymaking capacity of United States agencies, 1998–2021." *Political Science Research and Methods* 12(3):662–665.

Bendor, Jonathan B. 1985. *Parallel systems: Redundancy in government*. Berkeley, CA: University of California Press.

Bertelli, Anthony M and David E Lewis. 2012. "Policy influence, agency-specific expertise, and exit in the federal service." *Journal of Public Administration Research and Theory* 23(2):223–245.

Bils, Peter and Gleason Judd. 2024. "Working for the Revolving Door." *Working paper, Vanderbilt University and Princeton University* .

Bolton, Alexander, John M De Figueiredo and David E Lewis. 2021. "Elections, ideology, and turnover in the US federal government." *Journal of Public Administration Research and Theory* 31(2):451–466.

Brehm, John O and Scott Gates. 1999. *Working, shirking, and sabotage: Bureaucratic response to a democratic public*. Ann Arbor, MI: University of Michigan Press.

Carpenter, Daniel. 2002. *The forging of bureaucratic autonomy: Reputations, networks, and policy innovation in executive agencies, 1862-1928*. Princeton, NJ: Princeton University Press.

Carpenter, Daniel P and David E Lewis. 2004. "Political learning from rare events: Poisson inference, fiscal constraints, and the lifetime of bureaus." *Political Analysis* 12(3):201–232.

Doherty, Kathleen M, David E Lewis and Scott Limbocker. 2019. "Executive control and turnover in the senior executive service." *Journal of Public Administration Research and Theory* 29(2):159–174.

Forand, Jean Guillaume, Gergely Ujhelyi and Michael M Ting. 2023. "Bureaucrats and policies in equilibrium administrations." *Journal of the European Economic Association* 21(3):815–863.

Gailmard, Lindsey. 2024*a*. "The politics of presidential removals." *The Journal of Law, Economics, and Organization* .

Gailmard, Lindsey. 2024*b*. "Reputation and Capture." *Working paper, Caltech* .

Gailmard, Sean. 2010. "Politics, principal–agent problems, and public service motivation." *International Public Management Journal* 13(1):35–45.

Gailmard, Sean and John W Patty. 2007. "Slackers and zealots: Civil service, policy discretion, and bureaucratic expertise." *American Journal of Political Science* 51(4):873–889.

Gailmard, Sean and John W Patty. 2012. *Learning while governing: Expertise and accountability in the executive branch.* Chicago: University of Chicago Press.

Gibbs, Daniel. 2020. "Civil service reform, self-selection, and bureaucratic performance." *Economics & Politics* 32(2):279–304.

Golden, Marissa Martino. 1992. "Exit, voice, loyalty, and neglect: Bureaucratic responses to presidential control during the Reagan administration." *Journal of Public Administration Research and Theory* 2(1):29–62.

Goldstein, Daniel. 2024. "Reversals of Capacity: Norms, Culture, and Institutional Disruption." *Journal of Politics* 86(2):749–765.

Heimann, C.F. Larry. 1997. *Acceptable Risks: Politics, Policy, and Risky Technologies*. Ann Arbor, MI: University of Michigan Press.

Huber, John D and Michael M Ting. 2021. "Civil service and patronage in bureaucracies." *The Journal of Politics* 83(3):902–916.

Klein, Ezra and Derek Thompson. 2025. *Abundance*. New York: Avid Reader Press/Simon & Schuster.

Krause, George A, David E Lewis and James W Douglas. 2006. "Political appointments, civil service systems, and bureaucratic competence: Organizational balancing and executive branch revenue forecasts in the American states." *American Journal of Political Science* 50(3):770–787.

McDonnell, Erin Metz. 2020. *Patchwork Leviathan: Pockets of Bureaucratic Effectiveness in Developing States*. Princeton, NJ: Princeton University press.

Miller, Gary J and Andrew B Whitford. 2016. *Above politics: Bureaucratic Discretion and Credible Commitment*. New York: Cambridge University Press.

Moynihan, Donald P. 2025. "Rescuing state capacity: Proceduralism, the new politicization, and public policy." *Journal of Policy Analysis and Management* 44(2):364–378.

Pahlka, Jennifer and Andrew Greenway. 2024. "The How We Need Now: A Capacity Agenda for 2025 and Beyond." *Technical Report, The Niskanen Center* .

Perry, James L. 1996. "Measuring public service motivation: An assessment of construct reliability and validity." *Journal of Public Administration Research and Theory* 6(1):5–22.

Perry, James L. and Lois R. Wise. 1990. "The motivational bases of public service." *Public Administration Review* 50(2):367–373.

Richardson, Mark D., Christopher Piper and David E. Lewis. 2025. "Measuring the Impact of Appointee Vacancies on US Federal Agency Performance." *Journal of Politics* 87(2):680–695.

Rourke, Francis E. 1984. *Bureaucracy, Politics and Public Policy.* Boston: Little Brown.

Ting, Michael M. 2003. "A strategic theory of bureaucratic redundancy." *American Journal of Political Science* 47(2):274–292.

Weber, Max (Talcott Parsons, translator). 1947. *The Theory of Social and Economic Organization.* New York: Oxford University Press.

Wilson, James Q. 1989. *Bureaucracy: What Government Agencies Do And Why They Do It.* New York: Basic Books.

Wood, Abby K and David E Lewis. 2017. "Agency performance challenges and agency politicization." *Journal of Public Administration Research and Theory* 27(4):581–595.

Wood, B. Dan. 1988. "Bureaucrats, Principals, and Responsiveness in Clean Air Enforcement." *American Political Science Review* 82(2):215–234.

Contents

A Appendix: Formal Proofs

Proposition 1 *The skill-experience cycle is a stationary SPNE, and capacity persists at* $y = 1$ *every period, provided*

$$\mu \geqslant \frac{\pi(1+\overline{\sigma})}{2} - 1$$
$$\mu \geqslant \pi(\overline{\sigma} + \tau(1-\overline{\sigma})) - 1.$$

Proof: In period t, suppose a experienced rising senior remains in the bureaucracy, and a skilled junior enters, so $y_t = 1$. Then the senior obtains $u_t = \mu + 1$ from entry and $v_t = \pi(\overline{\sigma}+\tau(1-\overline{\sigma}))$ from exit. Solving for μ produces equation 13. In stationary strategies, if the skilled junior enters under a skilled, experienced senior in t, then they will enter in $t+1$. Then the skilled junior's expected lifetime utility is $U_t = 2(\mu+1)$ from entering the bureaucracy, and $V_t = \pi(\overline{\sigma}+1)$ from taking the private sector option in both periods. Solving for μ produces equation 12. ∎

Proposition 2 *The skilled-juniors cycle is a stationary SPNE, and capacity persists at* $y = \overline{\sigma}$ *every period, provided*

$$\mu \geqslant \pi(1 - \tau(1-\overline{\sigma})) - \overline{\sigma}$$
$$\mu < \pi(\overline{\sigma} + \tau(1-\overline{\sigma})) - 1.$$

Proof: In period t, suppose two skilled juniors enter and both plan to leave government in $t+1$. Then agency roles s and j are both held by junior agents, such that $q_t^j = 1$ and $q_t^s = \overline{\sigma}$, so $y_t = \overline{\sigma}$. These agents obtain $U_t = \mu + \overline{\sigma} + \pi(\overline{\sigma}+\tau(1-\overline{\sigma}))$ from entry as juniors, and $V_t = \pi(1+\overline{\sigma})$ from taking the private sector option in both periods. Solving for μ produces equation 14. Further, given that a skilled junior will enter alongside another skilled junior, they would also enter under a skilled senior. Therefore, as seniors the period-t entrants obtain $u_t = \mu + 1$ from remaining in the agency, and $v_t = \overline{\pi}_g$ from departing the agency. Solving for μ produces equation 15. ∎

Proposition 3 *If* $\mu \geqslant \frac{\pi(1+\overline{\sigma})-1}{2}$*, then capacity recovers to* $y = 1$ *in period* $t+1$ *and all subsequent periods.*

Proof: Provided that a skilled junior enters under a skilled, experienced senior, a skilled junior in period t obtains $U_t = 2\mu + 1$ from entering government and remaining in $t+1$, and obtains $V_t = \pi(1+\overline{\sigma})$ from entering the private sector. Solving for μ produces $\mu \geqslant \frac{\pi(1+\overline{\sigma})-1}{2}$, so a skilled junior indeed enters in t when this holds. ∎

Proposition 4 *If* $\mu < \frac{\pi(1+\overline{\sigma})-1}{2}$*, but* $\mu \geqslant \max\left\{\frac{(\pi-1)(1-\overline{\sigma})}{2}, \frac{\pi(1+\overline{\sigma})-(1-\overline{\sigma})-1}{2}\right\}$*, then capacity recovers to* $y = 1 - \overline{\sigma}$ *in* $t+1$*, and* $y = 1$ *in* $t+2$*.*

Proof: Suppose that a skilled junior does not enter when $y = 0$, but would enter for $y \geqslant 1 - \overline{\sigma}$. Then an unskilled junior in t obtains $U_t = 2\mu + (1 - \overline{\sigma})$ from entering the agency, and $V_t = \pi(1-\overline{\sigma})$ from the private sector option. A skilled junior entering in $t+1$ obtains $U_{t+1} = 2(\mu+1) - \overline{\sigma}$, and obtains $V_{t+1} = \pi(1+\overline{\sigma})$ from their private sector option. If $u_t \geqslant v_t$ and $U_{t+1} \geqslant V_{t+1}$, then an unskilled junior enters in t, and a skilled junior enters in $t+1$. Solving for μ produces $\mu \geqslant \max\left\{\frac{(\pi-1)(1-\overline{\sigma})}{2}, \frac{\pi(1+\overline{\sigma})-(1-\overline{\sigma})-1}{2}\right\}$. ∎

Proposition 5 *If* $\mu < \max\left\{\frac{(\pi-1)(1-\overline{\sigma})}{2}, \frac{\pi(1+\overline{\sigma})-(1-\overline{\sigma})-1}{2}\right\}$ *and* $\mu < \max\left\{\frac{\pi(1-\overline{\sigma})}{2}, \pi\tau(1-\overline{\sigma})\right\}$, *but* $\mu \geqslant \pi - \overline{\sigma} - \tau(1-\overline{\sigma})$, *then capacity recovers to* $y = \overline{\sigma} + \tau(1-\overline{\sigma})$ *in* t, *and* $y = 1$ *in* $t+2$.

Proof: Suppose that no junior enters in t, so there is no experienced senior bureaucrat in $t+1$. Suppose further that a skilled junior will enter for $y \geqslant \overline{\sigma} + \tau(1-\overline{\sigma})$. Then in $t+1$, a skilled, inexperienced senior obtains $u_{t+1} = \mu + \overline{\sigma} + \tau(1-\overline{\sigma})$ from entering government, and $v_{t+1} = \pi$ from their private option. In $t+1$, the skilled junior obtains $U_{t+1} = 2\mu + 1 + \overline{\sigma} + \tau(1-\overline{\sigma})$ from entering the bureaucracy, and $V_{t+1} = \pi(1+\overline{\sigma})$ from their private option. Solving for μ produces $\mu \geqslant \pi - \overline{\sigma} - \tau(1-\overline{\sigma})$ as a sufficient condition for both incentives constraints. ∎

Proposition 6 *If* $\mu < \max\left\{\frac{(\pi-1)(1-\overline{\sigma})}{2}, \frac{\pi(1+\overline{\sigma})-(1-\overline{\sigma})-1}{2}\right\}$, *but* $\mu \geqslant \max\left\{\frac{\pi(1-\overline{\sigma})}{2}, \pi\tau(1-\overline{\sigma})\right\}$, *then capacity never recovers:* $y = 0$ *for all* t *after management shock.*

Proof: Suppose that a skilled junior will not enter under $y \leqslant 1-\overline{\sigma}$. In t, an unskilled junior obtains $U_t = 2\mu$ from entering bureaucracy and $V_t = \pi(1-\overline{\sigma})$ from their private option. Further, a senior agent facing entry by an unskilled junior obtains $u_{t+1} = \mu$ from remaining in government, and $v_{t+1} = \pi\tau(1-\overline{\sigma})$ from exiting. The unskilled junior enters in t, remains in $t+1$, and is followed by an unskilled junior again provided $\mu \geqslant \max\left\{\frac{\pi(1-\overline{\sigma})}{2}, \pi\tau(1-\overline{\sigma})\right\}$. ∎

Proposition 7 *If* $\mu < \max\left\{\frac{(\pi-1)(1-\overline{\sigma})}{2}, \frac{\pi(1+\overline{\sigma})-(1-\overline{\sigma})-1}{2}\right\}$*, and* $\mu < \pi - \overline{\sigma} - \tau(1-\overline{\sigma})$*, then capacity never recovers:* $y = 0$ *for all* t *after management shock.*

Proof: The conditions on μ state that a skilled junior will not enter under an unskilled senior, which implies a skilled junior will not enter in t; and either a skilled junior will not enter under a skilled, inexperienced senior, or a skilled, inexperienced senior will not enter alongside a skilled junior. ∎

Proposition 8 *If* $\mu < \max\left\{\frac{(\pi-1)(1-\overline{\sigma})}{2}, \frac{\pi(1+\overline{\sigma})-(1-\overline{\sigma})-1}{2}\right\}$ *and* $\mu < \max\left\{\frac{\pi(1-\overline{\sigma})}{2}, \pi\tau(1-\overline{\sigma})\right\}$*, but* $\mu \geqslant \frac{2}{3}\left(\pi(1+\overline{\sigma}) - \frac{\pi(\overline{\sigma}+\tau(1-\overline{\sigma})+1}{2} - \overline{\sigma}\right)$*, then capacity recovers to* $y = \overline{\sigma}$ *in* t*, and* $y = 1$ *in* $t+2$*.*

Proof: Given $\mu < \max\left\{\frac{(\pi-1)(1-\overline{\sigma})}{2}, \frac{\pi(1+\overline{\sigma})-(1-\overline{\sigma})-1}{2}\right\}$ and $\mu < \max\left\{\frac{\pi(1-\overline{\sigma})}{2}, \pi\tau(1-\overline{\sigma})\right\}$, no juniors enter in period t, and either a skilled junior will not enter alongside a skilled, inexperienced senior, or vice versa. Then there are two open positions in $t+1$. If equation 13 holds, then it is not incentive compatible for two juniors to enter and both plan to depart, given that a skilled junior would enter if either stayed. However, in $t+1$ a skilled junior obtains $U_{t+1} = \mu + \overline{\sigma} + \frac{1}{2}(\mu+1) + \frac{1}{2}(\overline{\pi}_g)$ from entering bureaucracy and taking a 50-50 lottery on remaining in $t+2$ with a skilled junior entering, and departing government in $t+2$. The same junior obtains $V_{t+1} = \pi(1+\overline{\sigma})$ from their private option. Solving for μ gives $\mu \geqslant \frac{2}{3}\left(\pi(1+\overline{\sigma}) - \frac{\pi(\overline{\sigma}+\tau(1-\overline{\sigma})+1}{2} - \overline{\sigma}\right)$. Then equation 12 ensures a skilled junior enters in $t+2$ under the rising senior. ∎

Proposition 9 *If* $\pi(1-\tau(1-\overline{\sigma})) - \overline{\sigma} \leqslant \mu < \pi(\overline{\sigma} + \tau(1-\overline{\sigma})) - 1$*, then capacity recovers to* $y = \overline{\sigma}$ *in period* $t+1$ *and all subsequent periods.*

Proof: Given that rising, skilled senior agents depart and no juniors enter under $y = 0$, every period begins with two open positions, including $t+1$. Given $\mu \geqslant \pi(1-\tau(1-\overline{\sigma}))-\overline{\sigma}$, proposition 2 implies two skilled juniors enter in period $t+1$ and depart after one period. ∎