

Do Vacancies Hurt Federal Agency Performance?[↑]

The combination of the high workload associated with keeping top executive branch positions filled and political dysfunction has led to longer and more frequent periods of vacancies in the U.S. executive branch. While scholars commonly claim that such vacancies are harmful for performance, this claim has been difficult to evaluate because of theoretical disagreement, conceptual confusion, and measurement challenges. In this paper we evaluate the relationship between vacancies and performance, describing primary mechanisms by which vacancies (as opposed to turnover) influence performance. We conduct a cross-sectional study using new data on appointee vacancies during the Trump Administration and original performance data from a 2020 survey of federal executives. The survey includes questions designed to measure comparative self-reported agency performance and questions targeting the mechanisms hypothesized to link vacancies and performance. The paper includes efforts to define and validate the measure of performance, assess the directionality of the relationship between vacancies and performance, control for potential confounders that may explain both vacancies and performance, and evaluate the mechanisms by which vacancies negatively affect performance. The results suggest that persistent vacancies are correlated with lower performance. In particular, we find that agencies with persistent vacancies (e.g., 3-4 years) are estimated to have performance ratings of about one standard deviation lower than those agencies with consistent confirmed leadership. The most likely mechanisms leading to these results are the effect of vacancies on leader time horizons, agency morale, and a lack of investment by key stakeholders. We conclude with implications for appointment politics and administrative politicization.

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On April 12, 2021, President Joe Biden nominated Anne Milgram, a former New Jersey State Attorney General, to be the head of the Drug Enforcement Administration (DEA).¹ The agency presents a formidable management challenge. It employs over 7,000 people and spends more than \$2 billion annually, with most of the expenses related to the activities of its 222 domestic offices.² Milgram would be the first Senate-confirmed leader to run the troubled agency since 2015. During the period when the agency's top job has been vacant, critics have scrutinized the agency for its role in the opioid crisis and its policies toward marijuana. It has suffered high profile scandals, including a multi-million dollar money laundering scheme and an effort by one of its supervisors to sell munitions to affiliates of the Sinaloa drug cartel.³ Despite significant policy and performance challenges, the agency has continued to operate without a permanent Senate-confirmed leader.

The example of the DEA raises the more general question of the effect of leadership vacancies on federal agency performance. Article II of the U.S. Constitution requires that the principal offices of government be filled by presidential nomination and Senate confirmation (PAS). There are more than 1,300 positions designated as PAS positions (Lewis and Richardson 2021). At the end of each administration, the president asks for the resignation of appointees not serving fixed terms, creating a vast number of vacant leadership positions.

The combination of the high workload associated with keeping these positions filled and political dysfunction has led to longer and more frequent periods of vacancies in the U.S. executive

¹ Diamond, Dan, and Devlin Barrett. 2021. "Biden Picks Former New Jersey Attorney General to Lead DEA," *Washington Post*, April 12, 2021 (<https://www.washingtonpost.com/health/2021/04/12/biden-dea-milgram/>).

² Department of Justice, *Drug Enforcement Administration (DEA)* [FY 2019 Budget Request At a Glance] (<https://www.justice.gov/jmd/page/file/1033151/download#:~:text=DEA%20operates%20222%20Domestic%20Offices,FY%202019%20total%207%2C063%20positions>).

³ Goodman, Joshua, and Jim Mustian. 2019. "Feds say 'star' DEA Agent Abroad Stole Millions," *AP News*, January 15, 2019 (<https://apnews.com/article/miami-us-news-ap-top-news-south-america-international-news-7bbc49156a7e47e6a1f6b3a37946ee12>); Lynch, Sarah N. 2017. "U.S. Justice Department Faults DEA over Agent's Dangerous Liaison," *Reuters*, September 7, 2017 (<https://www.reuters.com/article/us-usa-dea/u-s-justice-department-faults-dea-over-agents-dangerous-liaison-idUSKCN1BI2DC>); Warren, Beth. 2021. "DEA Supervisor Turned 'Pariah' Sold Assault Rifles to Sinaloa Cartel Associates," *Louisville Courier Journal*, February 24, 2021 (<https://www.courier-journal.com/story/news/crime/2021/02/24/ex-dea-supervisor-sold-assault-rifles-to-sinaloa-cartel-associates/4360551001/>)

branch (O’Connell 2008; 2017; Dull and Roberts 2009; Resh et al. 2021). Twenty-five percent of key Senate confirmed (PAS) positions were vacant on average between 1977 and 2005 (O’Connell 2008). This trend has only grown through the most recent presidential administrations (Kinane 2021; Pager, Marimow, and McGinley 2021). Observers noted that President Trump struggled more than any recent president to fill key political appointments.⁴ Similarly, by the fall of President Biden’s first year in office, the Senate had confirmed leaders for only 127 of the 800 most important policymaking positions, leaving the remaining positions in the hands of temporary officials, waiting for their first confirmed leader.⁵

It has been difficult to evaluate the overall impact of vacancies because of theoretical disagreement, conceptual confusion, and measurement challenges (O’Connell 2020). As Dull et al. (2009, 445) note, “evidence linking appointee continuity and agency performance remains largely anecdotal.” While scholars commonly claim that such vacancies are harmful for performance (see, e.g., Hecló 1977; Lewis 2008; Light 2008, 2014), significant scholarship also suggests that career professionals, who often serve as temporary leaders in the absence of Senate-confirmed officials, have natural advantages in managing federal agencies (Hecló 1975, Kaufman 1965; Mendelson 2014; Suleiman 2003). To add to the difficulty, scholars often conflate appointee *turnover* with vacancy *length*. The two concepts are related but distinct. There can be frequent turnover and short vacancies or no turnover and long vacancies and each phenomenon has distinct effects on management. For example, during the Trump administration, the Department of Veterans Affairs had four individuals serve in the Secretary position, either confirmed or acting, but the position was only vacant for about four months over the course of four years. In contrast, the Occupational Safety and Health

⁴ Nancy Cook, “Trump’s Staffing Struggle: After 3 Years, Unfilled Jobs Across the Administration,” *Politico*, January 20, 2020 (<https://www.politico.com/news/2020/01/20/trumps-staffing-struggle-unfilled-jobs-100991>).

⁵ Data from the Partnership for Public Service’s, Political Appointee Tracker (<https://ourpublicservice.org/political-appointee-tracker/>). This web-based database tracks nominations and confirmations to 800 of the 1,300 PAS positions, what they determine to be the key policy making positions.

Administration had only one leader serve during the Trump administration, despite the position sitting vacant for the entire term. Measuring government performance across contexts is also notoriously difficult. Unlike the private sector, there is no profit equivalent in the public sector that serves as a useful shortcut for evaluating organizational performance. Observers disagree on what agencies should do and public sector outputs are hard to observe and quite diverse (Wilson 1989).

In this paper we evaluate the relationship between vacancies and performance, describing primary mechanisms by which vacancies (as opposed to turnover) influence performance. We conduct a cross-sectional study using new data on appointee vacancies during the Trump Administration and combine them with original performance data from a 2020 survey of federal executives. The survey includes questions designed to measure comparative agency performance and questions targeting the mechanisms hypothesized to link vacancies and performance. The paper includes efforts to define and validate the measure of performance, assess the directionality of the relationship between vacancies and performance, control for potential confounders that may explain both vacancies and performance, and evaluate the mechanisms by which vacancies negatively affect performance.

The results suggest that persistent vacancies are correlated with lower self-reported performance. In particular, we find that agencies with vacancies that last 3-4 years into an administration are estimated to have performance ratings of about one standard deviation lower than those agencies with consistent confirmed leadership. The most likely mechanisms are the effect of vacancies on leader time horizons, agency morale, and investment by key stakeholders. These results have important implications for our understanding of appointment politics and policy debates surrounding the large number of appointed positions in the United States. Further, they suggest that as the nomination and confirmation process continues to break down, agencies will have a more difficult time accomplishing their core mission and performing their key functions.

Connecting Vacancies to Performance

Scholars have long argued that inconsistent federal leadership is detrimental to agency performance (Boylan 2004; Hecl 1977). One concern is that agency decisions and activity slow while agencies wait for confirmed leaders (see e.g., Michaels 1997, 206; O’Connell 2020, 696). This includes the planning necessary to prepare for crises like hurricanes, terrorist attacks and global pandemics (Lewis 2008; O’Connell 2008; 2014; Bolton, Potter, and Thrower 2015; Kinane 2019). Persistent vacancies can also make it hard for political leaders to monitor agency activity and can lead to malaise and confusion among agency personnel (O’Connell 2008; 2020; Mendelson 2014; Kinane 2019; Partnership for Public Service 2018). Career professionals are naturally cautious about investing significant effort or taking decisive action when a new leader could be appointed and change course (Gailmard and Patty 2013; Richardson 2019). Temporary officials can also find themselves in a weaker position when interacting with outside stakeholders (Mendelson 2014; Bolton, Potter, and Thrower 2015; O’Connell 2020).

Scholars have also pointed out possible potential salutary effects of vacancies. For example, in the absence of confirmed leadership, career civil servants can take on a larger role and this can be beneficial relative to a string of less qualified appointees (Mendelson 2014). Indeed, scholars have shown that programs administered by career professionals perform better than comparable programs administered by political appointees (Gallo and Lewis 2012; Gilmour and Lewis 2006). Career civil servants have more relevant experience and longer tenures on average and these characteristics are associated with better program performance (Lewis 2008). Because some appointees delegate much of their power to subordinates within their agency, career civil servants may end up overseeing much of the action taken by an agency, regardless of the presence of an appointee (Nou 2017). Further, vacancies may provide the president with more time to find

competent nominees that are capable of effectively serving in the position and of successfully navigating the Senate confirmation process (Hollibaugh 2015; Hollibaugh and Rothenberg 2017).

Unfortunately, there is little large-N research evaluating the relationship between vacancies and performance (O’Connell 2020, 695). One problem in evaluating the impact of vacancies on performance is the tendency to conflate appointee *turnover* with vacancy *length*. For example, Lewis (2008, 1078) writes, “The fact that career managers have longer tenures implies that appointee-run federal programs experience more managerial turnover than programs administered by careerists.” The two concepts are related but distinct. There can be frequent turnover and short vacancies or no turnover and long vacancies. Positions like cabinet secretaries, for example, can change regularly but such positions typically experience much shorter vacant periods. Other positions are vacant for long periods with very little turnover, such as positions where presidents do send nominees to the Senate but the Senate does not act. Indeed, the data we present below, turnover and vacancy length are *inversely* correlated.

Measuring federal agency performance systematically is challenging. Public sector outputs are often difficult to observe and harder to connect to outcomes (Wilson 1989). When we can observe outputs, it is tricky to interpret them objectively, in a way acceptable to different stakeholders (Moynihan 2008). For example, is a count of inspections a good measure of performance? How about the number of checks issued or the number of fraud complaints per dollar? Even if stakeholders agree on a measure, comparing agency performance across diverse tasks is perilous (Nyhan and Marlowe 1995). For example, how do we compare the number of Environmental Protection Agency enforcement actions against Federal Aviation Administration flight safety?

Scholars have been creative in overcoming these challenges. They have examined performance on tasks common to many agencies like budget forecasting or making payments (e.g.,

Krause and Douglas 2006; Wood and Lewis 2017; Park n.d.). They have focused on comparing performance in large numbers of similar agencies in one sector like law enforcement or education (see, e.g., Boylan 2004; Meier and O'Toole 2002; Rutherford 2016). Researchers have also made use of government generated performance scores (e.g., Kroll and Moynihan 2021; Resh et al. 2021) or surveys of government employees to glean information about processes and outcomes we associate with good performance (for a review see Fernandez et al. 2015).

Each of these approaches has limitations. Focusing on specific tasks or agencies, leaves open the question of whether results are generalizable to agencies that do not perform those tasks or tasks more central to the mission of agencies. Government-generated performance scores can be hard to compare to one another and can be influenced by political bias (Lavertu et al. 2013). Surveys of federal employees provide another avenue but they rely on questions not designed well to measure key concepts and depend upon the impressions of federal employees who may or may not be close enough to agency senior leaders to accurately evaluate performance (Fernandez et al. 2015). Public sector surveys like the Federal Employee Viewpoint Survey are also unclear about what organization is being evaluated when they ask about “my organization” since this could mean my office, my division, my bureau, or the department as a whole (Thompson and Siciliano 2020). This makes evaluating performance information difficult.

In this paper we evaluate the impact of vacancies on performance in a way that is cognizant of these challenges. We use new data on appointee vacancies and combine them with responses from an original survey of federal executives. The survey targets the population with the broadest perspective on agency performance and includes questions designed to directly measure comparative agency performance related to the core mission of each agency. The survey also targets evaluations of units by name and includes questions targeting the mechanisms hypothesized to link vacancies and performance.

Vacancies and Federal Agency Performance: Time Horizons, Motivation, and Political Investment

We turn now to explaining how vacancies can impact the incentives and behavior of three different sets of actors: agency leaders, career professionals, and outside stakeholders.⁶ When agencies are headed by a Senate-confirmed leader, the presence or absence of those leaders reverberates throughout the organization. Vacancies matter since Senate confirmed leaders have different power and goals than the temporary leaders that serve in their absence. Career professionals working in the agency have altered incentives and engage in different behaviors in the absence of an appointed leader. Key stakeholders, too, adjust their posture toward an agency depending upon whether the agency is headed by a confirmed leader or temporary official.

Agency Heads

In the absence of a Senate confirmed official in an executive position, temporary acting officials perform the duties of the position. According to the Federal Vacancies Reform Act of 1998, there are two types of acting officials that can serve on an interim basis when a vacancy occurs. Generally, the person serving in “first deputy” or “first assistant” position below the PAS position, will become the acting official by default (Brannon 2020).⁷ The president, however, may also select a previously confirmed PAS official or a senior “officer or employee” within the agency that is paid at the equivalent of the GS-15 pay level or above to serve in an acting capacity (Brannon 2020).⁸

Persons serving in an acting capacity are subject to strict limits on how long they can serve.⁹ These

⁶ We focus on the case where the agency leadership position must be filled by a Senate-confirmed appointee and is, therefore, subject to regular vacancies. This represents the most common hierarchical structure found throughout executive agencies. Future work should consider the case in which agencies are headed by a permanent non-PAS official, but are overseen by a PAS appointee.

⁷ 5 U.S.C. § 3345.

⁸ Senior “officer[s] or employee[s]” must be in the agency for a period of at least 90 days (Brannon 2020).

⁹ Individuals placed in an acting position may serve for a temporary period of 210 days. This period will be extended if a presidential nomination to fill the position is made. In this instance, the acting official can serve as long as the nominee is pending Senate confirmation (Brannon 2020). Further, if the nomination fails, a new 210-day period begins on the day of rejection, withdrawal, or return. This process is repeated for up to two nominations. Additionally, this period is extended by 90 days when the president first takes office. Therefore, President Trump, upon entering office, had a period from January 20, 2017 to November 16, 2017 to use acting officials without having to make a nomination

time limits vary depending upon whether the vacancy occurs during a transition and whether there is a nominee under consideration in the Senate. The differences in the way these temporary acting officials are selected, their limited tenures, and their career incentives shape their choices in predictable ways.

One difference between confirmed appointees and acting officials is that confirmed appointees have clearer authority than acting officials serving in the same role. Nomination by the president and confirmation by the Senate provides agency heads with the imprimatur of approval by the president and the Senate (Clinton, Bertelli, Grose, Lewis, and Nixon 2012). It authorizes them to take the instructions they have received from each branch about the priorities and policies of the government and bring them to the agency. Further, confirmation provides credibility and legitimacy to the policy decisions made under the appointee's leadership (O'Connell 2008; Resh et al. 2021). Acting leaders, in contrast, lack the legitimacy that comes from formal nomination and confirmation. They have, at most, the implied endorsement that comes with presidential selection. While the president has selected the new (temporary) agency head, either by default or purposeful action, the president has decidedly not chosen the person for the permanent job.¹⁰ The acting head *may* have the benefit of speaking for the White House but lacks the authority of someone chosen for the job permanently and approved by both branches.

(Brannon 2020). Moreover, The Vacancies Act does not provide any provisions to enforce these limits on the length of service. Acting officials have on occasion remained in their positions longer than allowed by the Vacancies Act (Brannon 2020). Further, The Vacancies Act allows for most of the primary functions of appointed positions to be delegated to other officials with no time limits (Brannon 2020).

¹⁰ Brannon (2020, 11) writes, "Section 3345 places an additional limitation on the ability of these three classes of officials to serve as acting officers for an advice-and-consent position. As a general rule, if the President nominates a person to the vacant position, that person 'may not serve as an acting officer' for that position." There is an exception for first assistants that meet certain qualifications. Brannon (2020, 12) continues, "There is an exception to this limitation: a person who is nominated to an office may serve as acting officer for that office if that person is in a "first assistant" position to that office and either (1) has served in that position for at least 90 days during the year preceding the vacancy or (2) was appointed to that position through the advice-and-consent process."

This is not to suggest that career acting officials have no vision about what the agency should do. On the contrary, their own experiences and expertise shape their views about what policies should be and the best ways to organize operations. On occasion, their position as an acting leader allows them to pursue these goals. Their short tenure, however, limits their self-directed actions to short term projects that have the prospect of success before the end of their tenure or to projects that are likely to be picked up by their successor.¹¹ The successful acting official keeps the agency running effectively and returns to their previous job as deputy or uses their experience as a resume builder to move to another position inside or outside the agency. Career officials regularly default to actions that all actors have implicitly agreed upon, which are the non-controversial parts of what the agency has been doing up to that point. Good recommendations from the administration and the Hill can help secure their career moving forward. Of course, not all acting officials have the luxury of maintaining the status quo. Some are thrust into the middle of political fights and into a world that looks more like that experienced by Senate-confirmed appointees.

Some acting officials are themselves appointees, either because the default first assistant is a political appointee (e.g., a Deputy Assistant Secretary) or because the president has selected a political appointee outside the regular chain of command to step in. The career incentives of these officials are different. While they may be easily removed by the president, their future career prospects are generally more closely tied to the administration, the party, or the constellation of groups around the party. This provides them incentives to participate in the program of the

¹¹ The average acting official in our data (agency heads that served up until June of 2020 in the Trump administration) was in their position for about 3.5 quarters, or around 10 to 11 months, with the modal official serving for only 1 quarter, or about 3 months. It is important to note that there are exceptions where acting officials serve for extended periods. For example, Loren Sweatt served as the Acting Assistant Secretary for Occupational Safety and Health in the Department of Labor for 11 quarters while President Trump repeatedly nominated Scott Mugno to the position. However, despite Sweatt's lengthy service in the position, there was the perpetual possibility that Mugno would soon be confirmed and Sweatt would be replaced. Therefore, even when able to serve for long periods, acting officials are limited by the possibility of being replaced in the near term.

president but reinforces the common incentive to focus on accomplishment in their job during their short tenure according to their temporary status.

The short tenure of both career and appointed acting officials limits their willingness to invest effort in long term policy and planning — setting goals, aligning processes, and securing resources—to achieve goals to be accomplished after they leave their position. Matching with this view, Piper (2022) finds that agencies are less likely to change their long-term goals and priorities when appointed positions are vacant. They also cannot expend costly effort to solve larger and long-term problems because of their short tenure. Of course, many enduring policy and managerial problems require many years to address, whether selecting and installing a new agency IT system or putting in place a new plan for enforcement. Agencies that do not or cannot plan are often less effective.

Career Professionals

Career civil servants have different incentives when their agency is led by a Senate-confirmed appointee rather than an acting leader. Senate-confirmed appointees communicate clearer signals to career officials about agency goals and this helps mobilize and direct civil service action (Chun and Rainey 2005; Jung and Lee 2013, Jung 2014, 2018; Wilson 1989). Confirmed appointees can also more credibly commit to longer tenures, providing confirmed appointees a greater ability to reward and sanction agency officials. When the president and Congress identify and confirm an appointed leader or supervisor, this may also signal to the agency a greater commitment to the importance of its work, improving the morale of career civil servants. This is particularly important for employees that chose their work with the agency out of a sense of mission or public service motivation (Perry and Wise 1990).

One virtue of Senate confirmation is that Senate-confirmed appointees have the most authoritative claim to be able to declare the goals and priorities of the President and Congress.

Confirmed appointees were selected by one branch and confirmed by the other. This does not mean that the confirmed appointee, in fact, speaks for both branches or that she is effective at articulating clear goals (see Hecló 1977, Mackenzie 1981). From the perspective of agency officials, however, a leader's position as a Senate confirmed appointee gives them the right to provide clear directions. The acting head *may* have the benefit of speaking for the White House but lacks the authority of someone chosen for the job permanently and approved by both branches. The career civil servants may disagree with the goals or believe the goals are illegal or ill-advised but their work does not suffer due to a lack of clarity. In the language of principal-agent relationships, there are fewer agency costs due to a lack of clarity about what the principals want done.

In the U.S. system, most Senate-confirmed appointees, particularly those higher in the hierarchy, have no fixed end point to their tenures and are generally expected to stay longer than acting officials.¹² Acting officials are limited by the legal limits in the Vacancies Act and always have the “acting” label attached to their names, implying a replacement coming soon. For career professionals, the longevity of the boss matters for their incentives and careers. A boss that is assured to be short-term has less ability to reward or sanction a career professional. The temporary leader cannot credibly commit to rewarding them for their hard work and lacks the necessary time to carry through with a sanction if they are unresponsive. A longer serving appointee, with something closer to an indefinite time-horizon can more credibly deliver a reward or sanction. The expectation of longer tenures also helps incentivize the building of trust relationships that are important for information transmission and cooperative agency work (Resh 2015).

This does not imply that career professionals will not do what acting officials ask. Rather, career professionals are naturally reluctant to invest too much effort in plans that may not last longer

¹² The average confirmed executive agency head in our data was in their position for about 7.2 quarters, or around 21 to 22 months. This is more than twice as long as the average length of service of acting officials in similar positions. Further, less than 10% of acting officials serve at least this long.

than the agency head will be in place. If a career official expects a temporary person to be in the job for 3 months, for example, this limits how hard the career official will work on the leader's priorities. No one wants to waste their efforts. Temporary agency officials have weaker tools for incentivizing the extra work necessary to prioritize new tasks or effectively implement new policies.

One final feature that determines effort up and down the line in traditional agency relationships is the sense that the principal cares. This manifests itself in work *ex ante* by drawing up a careful plans or *ex post* by expending costly effort to monitor the agent. When the president and Congress do not engage in the costly effort to identify nominees and vet them for Senate confirmation, agency personnel naturally draw conclusions about how much political principals care. Will the branches exert effort to monitor? Will they agree on sanctions if they find agencies doing something they do not like? To the extent that career professionals are motivated by the work that they do, drawn out vacancies convey that their work is neither important nor likely to be recognized by elected officials themselves. This likely undercuts the motivation of career officials to invest costly effort to work extra hours, acquire expertise, and to innovate.

Key Stakeholders

Outside stakeholders, whether elected officials or outside groups, allocate support differently depending upon whether an agency is led by a confirmed appointee or an acting official. Stakeholders are more reluctant to invest resources, time, or reputation in an agency whose leader may be replaced soon with a permanent leader. They may also be reluctant to invest if they have concerns about the agency shirking in the absence of a confirmed supervisor.

Elected officials are willing to provide resources to an agency if that agency will use those resources to implement policies these officials support (e.g., Calvert, McCubbins, and Weingast 1989; Epstein and O'Halloran 1994; Resh, Napolio, and Lee 2022). If agencies are headed by acting leaders and acting appointees are slower to translate increased budgets into outputs or less capable

of ensuring outcomes satisfactory to the principal because of their propensity for caution and delay, the marginal value of investment for the elected official will be lower. In a constrained budget environment, elected officials are more likely, at the margins, to expend effort and resources in places where the return is larger and more immediate and where there is a credible commitment on the part of the appointee to see initiatives through. For example, chairs and key members of House and Senate appropriations subcommittees responsible for an agency's budget will be less willing to invest limited discretionary funds to an agency with unconfirmed leadership. Persistent vacancies in many circumstances lead to fewer investments because elected officials prefer to wait until a more effective and accountable leader is in place.

Choices to invest or not invest in the agency influence the ability of the agency to carry out its mission. If elected officials withhold political support and resources, this influences the ability of agencies to do what they have been tasked with accomplishing. The successful implementation of the most important agency work often requires the cooperation of groups and individuals over whom the agency has no direct control. This can be other governments, other agencies, or groups and individuals. When these groups are making decisions about whether to cooperate with the agency in intergovernmental or interagency processes, enter into agreements with the agency, or prioritize tasks that are important to the agency they are more reluctant to do so when the agency lacks a leader or that leader will change in the near future and is not backed by Congress and the White House.

Expectations: Vacancies and Performance

The performance of government agencies depends upon both the incentives and actions of agency leaders and the way that career professionals respond to agency leaders. These intra-agency dynamics influence the willingness of elected officials and outside groups to provide the agency the resources and cooperation they need to be effective. Agencies experiencing long-term vacancies

should have lower overall performance than agencies with durable appointed leadership. We should observe agencies with long term vacancies doing less *planning for the future*, have *lower morale and less motivation*, and outside *stakeholders should expend less effort* providing the agency resources and support.

Data and Methods

To test our expectations, we conducted a cross-sectional study using data on vacancies during and an original measure of performance from the Trump administration. This research approach involves several challenges related to measurement validity and threats to causal inference, specifically in relation to reverse causality and conditional independence. We attempt to address each in turn. First, we validate our self-reported measure of agency performance using both external evaluations of agency workforce skill and preexisting measures of agency performance. Second, we examine whether prior agency workforce skill, a proxy for previous performance, affects the likelihood that the agency's leadership is vacant in the future. Finally, we control for a number of potential confounders, including agency structure, workforce skill, and presidential priority, that may explain both vacancies and performance.

Measuring Agency Performance

To evaluate whether there is a relationship between vacancies and performance requires measures of performance that are reliable across agencies. In 2020, along with colleagues and the Partnership for Public Service, we fielded a survey of appointed and career federal executives to collect such data. The online survey targeted all federal executives working in agencies headed by a Senate-confirmed appointee whose functions were not exclusively advisory.¹³ This includes all political appointees, career members of the Senior Executive Service, and senior Foreign Service officers serving domestically. The survey sample also included other high-level managers that administered key programs or offices. The response rate was 9.1% (1,485 completed surveys out of

¹³ For details see Survey on the Future of Government Service (sfgs.princeton.edu).

16,232) with an 11.5% participation rate (1,861 complete or partial surveys out of 16,232). This response rate is comparable to most public opinion telephone surveys (AAPOR 2017). All analysis includes survey weights to ensure that survey responses are representative of the target population.¹⁴

The survey instrument included questions designed to measure performance and the hypothesized ways vacancies influence performance across different agency contexts. To begin, the survey asked, “How would you rate the overall performance of [your agency] in carrying out its mission?” Respondents were given a sliding scale from 1-Not at all effective to 5-Very effective. They could also indicate a “Don’t know” response. The question asks federal executives to evaluate how well their agencies are doing by name. Respondents selected a workplace from a dropdown menu at the start of the survey and this workplace replaced the [your agency] portion of the question above. So, for example, a respondent that selected the Economic Research Service as their workplace answered the following question: “How would you rate the overall performance of the Economic Research Service in carrying out its mission?”¹⁵

Respondents are uniquely situated to have information about agency performance, something that is very difficult to observe. Of course, agency performance is multidimensional and individuals, particularly those lower in the hierarchy, may observe only one part of agency performance. Agencies can be good at some things and poor at others. This measure partly avoids this problem by sampling agency *leaders* and asking them about an agency’s core mission. Even so, an agency’s mission can be multidimensional. For example, the core mission of the Environmental

¹⁴ Survey researchers created post-stratification weights using iterative proportional fitting (i.e., raking). They used the sample drawn from the *Leadership Directories’* Federal Government database to create population marginals because the sample is primarily a census sample, meaning the sample is our best estimate of the population. The characteristics they used for weighting are: 1) Whether a respondent worked in the DC area (defined as the District of Columbia, Maryland, and Virginia); 2) Position type defined as political appointees, career members of the Senior Executive Service, member of the Senior Foreign Service, and career civil servant; 3) Workplace location in the executive branch defined as the Executive Office of the President, each executive department (separately), and independent agencies (as a whole).

¹⁵ The survey also includes a question, “To what extent do you agree or disagree with the following statements?” [My agency] is an effectively managed, well-run organization.” We have also estimated models on agency average responses to this question and the results are similar, though less precisely estimated. We include the results in Appendix F.

Protection Agency is to “protect human health and the environment.” Yet, they EPA may be better at protecting human health than the environment and within this, the EPA may be better at protecting human health through clean air than clear water. We are asking respondents to give an overall evaluation and implicitly average over a number of activities that comprise an agency’s core mission.

Any measure of performance must make a tradeoff between comparability and precision. This survey-based measure has the advantage of comparability, measuring perceptions of performance on core missions across contexts, but it lacks the precision that comes with evaluating specific tasks like budget forecasts, FOIA response times, or payment errors (e.g., Krause et al 2006; Park n.d.; Wood and Lewis 2017). The aggregated nature of the measure and error associated with that aggregation makes finding a correlation between the measure and vacancies less likely, making this a tough case for evaluating an effect of vacancies on performance.

One concern with self-reported measures is that they may be unrelated to actual performance or inflated to make managers look better (Meier and O’Toole 2013). If this is the case but the upward bias is uncorrelated with vacancy length, this should not be a problem for inference. An upward bias simply leads to higher average self-reported performance across the board (and a larger estimated constant in regressions). It will not affect the estimates of the correlation between vacancies and performance, the key relationship we are evaluating. If there is bias in performance evaluation and it is correlated with vacancies, however, this could present a problem. We are less concerned about that in this case because the direction of the bias should lead us to *underestimate* the true effect of vacancies on performance. Executives working in agencies with vacancies are more likely to inflate self-reported performance upward than executives working in agencies with a confirmed appointee. This is because executives working in an agency with a vacancy are themselves

more likely to be in charge and responsible for performance. If this is the case, it would lead us to underestimate the true effect of vacancies on performance.

We aggregate responses by agency for all agencies with at least 5 respondents.¹⁶ This leaves us with agency averages for 77 agencies that have a PAS appointee as head.¹⁷ There is significant variation across agency averages. They vary from 2.79 to 4.88 and the mean value is 3.92 (SD 0.49). The highest performing agencies, according to self-evaluations are the National Cemetery Administration (VA), the Bureau of Economic Analysis (COM), and the National Transportation Safety Board. Among the lowest performing agencies according to executives that work in these agencies are the State Department, Office of Personnel Management, and Bureau of Indian Affairs (INT).

In Figure 1 we compare these measures to other related measures. In 2020, the Partnership for Public Service produced scores for agency COVID performance (right panel in Figure 1).¹⁸ The Partnership's scores are an index created using federal employee responses to the following questions:

- During the COVID-19 pandemic, my work unit has met the needs of our customers.
- During the COVID-19 pandemic, my work unit has contributed positively to my agency's performance.
- During the COVID-19 pandemic, my work unit has produced high-quality work.
- During the COVID-19 pandemic, my work unit has adapted to changing priorities.

¹⁶ Among the agencies in our dataset, some are headed by members of the Senior Executive Service (SES) rather than a PAS appointee. We focus here on those agencies directly headed by a PAS appointee. The dynamics associated with PAS vacancies in agencies where the PAS appointee is a level up in the hierarchy are quite different for many reasons. Among the most important is that agencies with SES heads have permanent leadership regardless of what is happening in the PAS appointed positions above them.

¹⁷ Given that respondents in executive departments were able to choose which part of the department they work in, we have no respondents that select the executive department directly. Respondents in the Office of the Secretary, however, were asked about the departments as a whole—e.g., “How would you rate the overall performance of the Department of the Interior in carrying out its mission?” In departments where we have at least 5 respondents from the Office of the Secretary we include performance ratings for the entire department. In departments where we do not have 5 respondents from the Office of the Secretary we do not.

¹⁸ For details and agency rankings see 2020 Best Places to Work in the Federal Government rankings, COVID: Agency Performance

(https://bestplacestowork.org/rankings/?view=category&size=sub&category=covid_sub_agency_perform&).

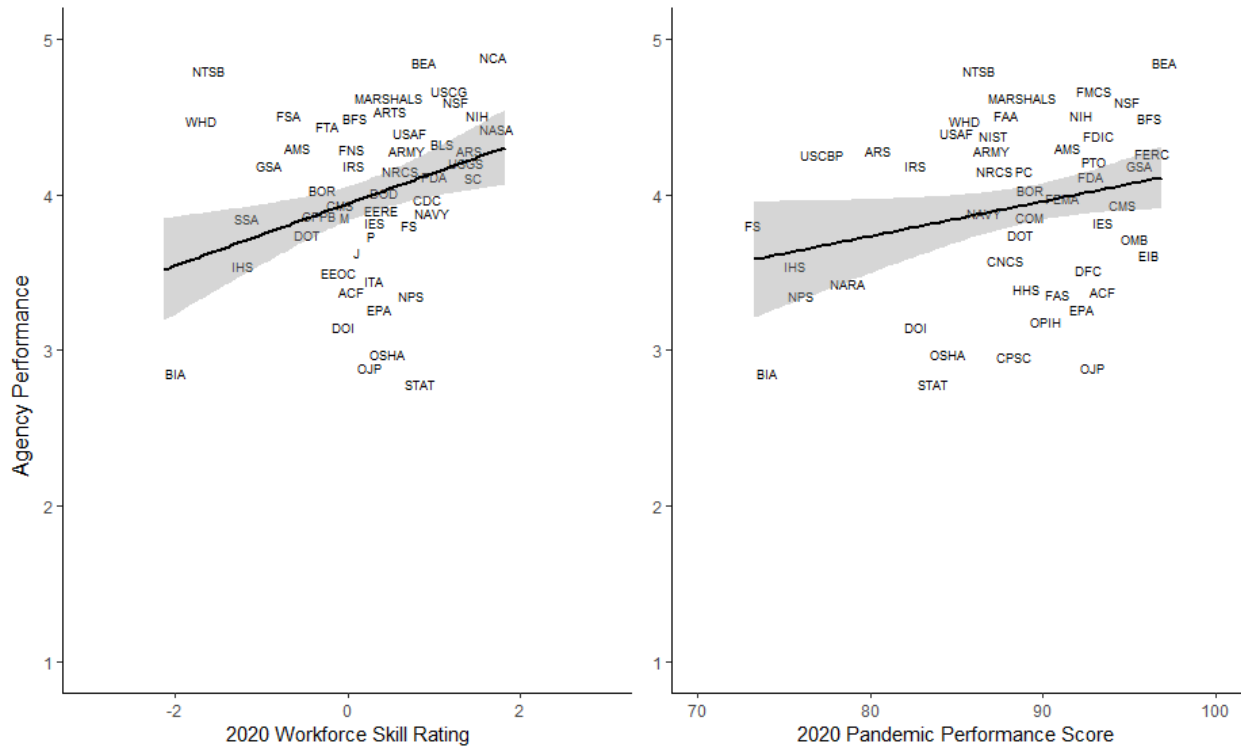
We have also estimated models with this performance measure as the dependent variable with substantively similar results. Model estimates are reported in Appendix G.

- During the COVID-19 pandemic, my work unit has successfully collaborated.
- During the COVID-19 pandemic, my work unit has achieved our goals.

The overall score reflects the views of the rank-in-file about how they did during the difficult 2020 pandemic period. The figure also graphs agency performance measures against 2020 measures of agency workforce skills (Richardson et al. 2018; left panel of Figure 1). In our 2020 survey, we asked respondents to identify the agencies that they worked with most frequently (other than their own). We then asked respondents to evaluate the skills of these agencies' workforces (Richardson et al. 2018). So, for example, an employee in the Natural Resources Conservation Service (USDA) might report that they work regularly with the Environmental Protection Agency, the Office of Management and Budget, and the Department of the Interior. This respondent would be asked to rate these agencies and two other agencies they were likely to be familiar with (e.g., other bureaus in the USDA). Specifically, they were asked, "In your view, how skilled are the workforces of the following agencies?" and given options from 1-Not at all skilled to 5-Very skilled. They were also provided a Don't know option. Each respondent rated up to 5 agencies, providing thousands of ratings of different agencies. Following Richardson et al. (2018), the ratings were aggregated using a Bayesian multi-rater item response model, adjusting for differences in the way raters use the scale.¹⁹

¹⁹ For example, some respondent evaluations will be uncorrelated with true performance or for some respondents a 4 means something different than for other respondents. We thank Mark Richardson for providing these estimates.

Figure 1. Comparison of Self-Reported Agency Performance on Core Mission vs. 2020 Workforce Skills Ratings and 2020 Best Places to Work Pandemic Performance Scores



Note: Fitted lines estimated based upon all agencies with at least 5 respondents in the survey but some agency acronyms are excluded from the figure to limit overlap among acronyms.

Figure 1 reveals that federal executives’ evaluations of agency performance are positively correlated with federal employee evaluations of performance of the agency during the pandemic and outside observers’ evaluations of their agency’s workforce (on the same scale as other agencies). The correlations are 0.23 and 0.33, respectively, for all agencies and 0.15 and 0.28 for agencies headed by PAS appointees. This is *prima facie* evidence that the performance evaluation provided by federal executives matches up with other measures we believe to be related to overall performance (i.e., performance during the pandemic, workforce skill), measures provided by other stakeholders—rank-in-file employees, and executives in other agencies.

In what follows we evaluate whether the survey-based measure of performance on core tasks is correlated with vacancy length, accounting for various confounders. If a correlation between self-

reported performance and vacancy length is corroborated by the hypothesized mechanisms, this gives us even more confidence that we are observing a true effect.

Appointee Vacancies

To connect survey responses to vacancies, we used the 2016 congressional publication *Policy and Supporting Positions* (i.e., Plum Book) to identify the agencies in the dataset headed by a PAS appointee. We systematically tracked each PAS position from the start of the Trump Presidency on January 20, 2017 until the soft launch of the survey on June 22, 2020 to count the number of days the position lacked a Senate-confirmed head.²⁰ For simplicity, we report vacancy length in months. For commissions we focused on length of time a chair position was vacant.²¹ The average agency in the dataset experienced 17 months with a vacancy, or about 40% of the time between Inauguration and the start of the survey. The overall correlation between average agency performance and the months a PAS position was vacant is -0.17. This seems to suggest that vacancies may hurt performance in agencies directly headed by a PAS appointee.²²

These simple correlations can be misleading for several reasons. First, the correlation between vacancies and performance is just a snapshot in time, a simple correlation between two variables that does not take into account trends. Second, it is possible that low performance predicts vacancies rather than the other way around. Finally, there may be other factors that are correlated with both the length of vacancies and agency performance. This can make parsing out the unique effect of vacancies on performance difficult.

²⁰ We also estimate models with the time to first confirmation as the primary independent variable. The results, reported in Appendix Table D2, are substantively similar across specifications.

²¹ Different statutory requirements are attached to chair positions. The rules for selection and removal vary by commission. In most commissions presidents select the chair, either with or without Senate confirmation. Rules for removal vary. In some commissions chairs serve for fixed terms and in others they serve at the pleasure of the president (Selin and Lewis 2018, 100).

²² We have examined this relationship with different functional forms. We could not reject the null that the effect was linear ($p < 0.55$).

There is no perfect way with the existing data to get around the fact that they are a cross-section, a novel and important one, but a cross-section, nonetheless. To try and more closely connect the vacant days in the Trump Administration to performance in the Trump Administration, we estimate multivariate models that include a control for the health of the agency at the start of Trump's term. Specifically, we use data on a similar workforce skills rating from a late 2014 survey of federal executives (Richardson et al. 2018). We use these ratings to control for the health of the workforce at the end of the Obama Administration as a way of trying to isolate the effect of Trump vacancies on performance. The skills ratings vary from -1.76 to 1.48 (Mean 0.07; SD 0.70) and correlate with agency performance at 0.41.²³ Increased workforce skills are notably correlated with self-reported agency performance.

We also use these ratings to evaluate whether poor performance *creates* vacancies rather than the other way around. We regress Trump Administration vacancies on Obama Administration skills ratings and other covariates to see whether Trump Administration vacancies are caused by poor performance during the Obama Administration. When we estimate these models, controlling for structural features of the agency, whether the agency implements a presidential priority, the agency's ideological tenor, and size we cannot reject the null that Obama Administration skills ratings do not predict vacancy length (Appendix A). The coefficient is negative, however, suggesting that higher skill agencies are *less* likely to experience vacancies. Given these findings, it is possible that a correlation between vacancies and performance is a case of reverse causality. As such, we have also estimated models limiting the sample to only high skilled agencies and agencies that are priorities of President Trump to respond to concerns that vacancy length is endogenous to workforce skill or presidential attention. The results are similar to those reported below and included in Appendix B.²⁴

²³ We have also estimated models including and interaction of vacant months and workforce skills. We could not reject the null that the interaction estimate was zero ($p < 0.40$).

²⁴ We use a simplified specification (i.e., Model 2 from Table 1) give the small sample size.

There are several features of agencies and the pool of respondents that are also plausibly correlated with both the length of vacancies and agency performance. We estimate models that attempt to control for such factors. First, it is possible that turnover among agency leaders is correlated with both vacancy length and agency performance. Vacancies themselves may have little impact but turnover could be harmful. To account for this possibility, we estimate models that include the number of leadership transitions in the PAS position during the Trump Administration. The median agency had 1 leadership transition during this period (Mean 1.43; SD 1.07). The correlation between turnover and vacant months is -0.05 suggesting that greater turnover generally means shorter vacancies.

We include indicators for whether the department (0,1; 0.65) or subcomponent (0,1; 0.25) implemented a policy that was a priority of the president to account for performance improvements related to administration focus.²⁵ To account for other differences among agencies that could influence both vacancies and performance, we include indicators for whether respondents work in the Office of the Secretary (0.09), an agency in the Executive Office of the President (0.03), or in an independent commission (0.18). We include a control for Office of the Secretary since these respondents are asked to evaluate entire departments rather than a subcomponent. The inclusion of the other structural features means the base category is a sub-component of an executive department or an independent executive agency like the Environmental Protection Agency or Office of Personnel Management. We also estimate models that include a control for agency employment in 1000s (Mean 33.71; SD 78.76).²⁶

²⁵ We identify policy priorities of the president using the Contract with the American Voter, a campaign document produced by the Trump Campaign in October 2016 (<https://assets.donaldjtrump.com/landings/contract/O-TRU-102316-Contractv02.pdf>). We include a list of topics and related departments and agencies in Appendix C.

²⁶ We have also estimated models with employment logged since it is skewed. The results are same as those reported here and included in Appendix Table D1.

Since the measures of agency performance are averages of individual responses from high-level federal executives, it is possible the sample of respondents in each agency influences the average. As such, we estimate models that include controls for the percentage of respondents that self-identify as a Democrat (Mean 0.56; SD 0.21) and the percentage that are political appointees (Mean 0.08; SD 0.15).²⁷ The correlation between partisanship and reported agency performance is -0.14 and appointee percentage and agency performance is 0.05, respectively.

In what follows, we estimate a series of models of agency performance with OLS.²⁸ Given the limited degrees of freedom and missingness of data for some controls, we are strategic about specification, estimating models with different sets of controls to assess the robustness of the results.²⁹ We cluster the standard errors to account for the fact that different agencies are not completely independent since they are subcomponents of larger departments.³⁰ Specifically, we have 17 clusters, one for each executive department, one for the EOP, and one for independent agencies.

Results

In Table 1 we include estimates from models of agency performance (standard errors in brackets), with different specifications. The models are revealing. They suggest that longer vacancies are correlated with lower self-reported performance. By contrast, turnover itself in PAS positions has no clear effect on performance. Even in models with few cases, the results seem relatively

²⁷ We have also estimated models controlling for the ideological leaning of the agencies (Richardson et al. 2018). In their 2014 survey, Richardson et al. ask respondents about the ideological leanings of agencies they work with, whether the “lean liberal, lean conservative, or neither consistently across Democratic and Republican administrations.” They aggregate responses with a method similar to the workforce skill scores described here to generate estimates of agency ideology. When we estimate models with these measures, the results are similar to those reported in Table 1. We include them in Appendix Table D1.

²⁸ We have run regression diagnostics to assess whether our relationship of interest is linear, whether residuals are homoscedastic, and whether estimates are strongly influenced by individual observation.

²⁹ We have also estimated models controlling for the type of acting official, careerist or political, that occupies the vacant position and two proxies for agency goal clarity, including measures from the SFGS related to agency statutory discretion and partisan disagreement over the agency’s mission. Results, reported in Appendix D, are substantively similar across all model specifications.

³⁰ We have also estimated models using a jackknife estimator to calculate standard errors. Those estimates are substantively similar to what is reported in Table 1 and included in Appendix Table D1.

robust, with coefficient estimates consistently negative and often precisely estimated.³¹ This is important evidence that persistent vacancies may hurt performance in agencies headed by PAS appointees.

To begin, the coefficient estimate for the number vacant months is negative, indicating that respondents report worse performance in agencies where PAS positions are vacant for long periods. To see the full effect it is useful to think about the effect in relation to real vacancy times (Figure 2). For every 12 months a PAS head position is vacant, the agency's average self-reported performance decreases by between 0.07 and 0.13 on a scale from 2.8 to 4.9. If the position stays vacant for 24 months or about half the president's term (i.e., about 30% of the data), the estimated effect is between 0.14 and 0.26, or about one half of a standard deviation decrease. Agencies as varied as the Office of Energy Efficiency and Renewable Energy in the Department of Energy and the Bureau of Economic Analysis in the Department of Commerce roughly fall into this range. Finally, if the position is vacant for the duration of the Trump presidency (i.e., about 11% of the data), their estimated performance is about 0.25 and 0.46 lower than other agencies. To put this in perspective, an agency that fits into the latter category like the DEA, whose Administrator position was vacant for all 42 months prior to the survey, is estimated to have about a standard deviation lower average self-reported performance. Importantly, these results emerge even when we control for appointee turnover. The coefficient on the number of different leadership transition is close to zero and we cannot reject the null that turnover has no effect on performance.

³¹ We also conducted sensitivity analysis to determine how big unobserved confounders would have to be eliminate the impact of vacancies (we use Model 2 in Table 1). To bring the estimated coefficient on vacant months to 0, the unobserved confounders would have to explain more than 25.68% of the residual variance of both the dependent variable (i.e., agency performance) and the treatment (months vacant). To bring the estimated coefficient to a value indistinguishable from 0 in two-tailed tests ($p < 0.05$), the unobserved confounders would have to explain more than 5.26% of the residual variance in both months vacant and agency performance. It is unlikely that omitted confounders explain all of the correlation between vacant months and agency performance but we should be cautious as to the size of the effect.

Table 1. OLS Estimates of Models of Self-Reported Agency Performance, 2020

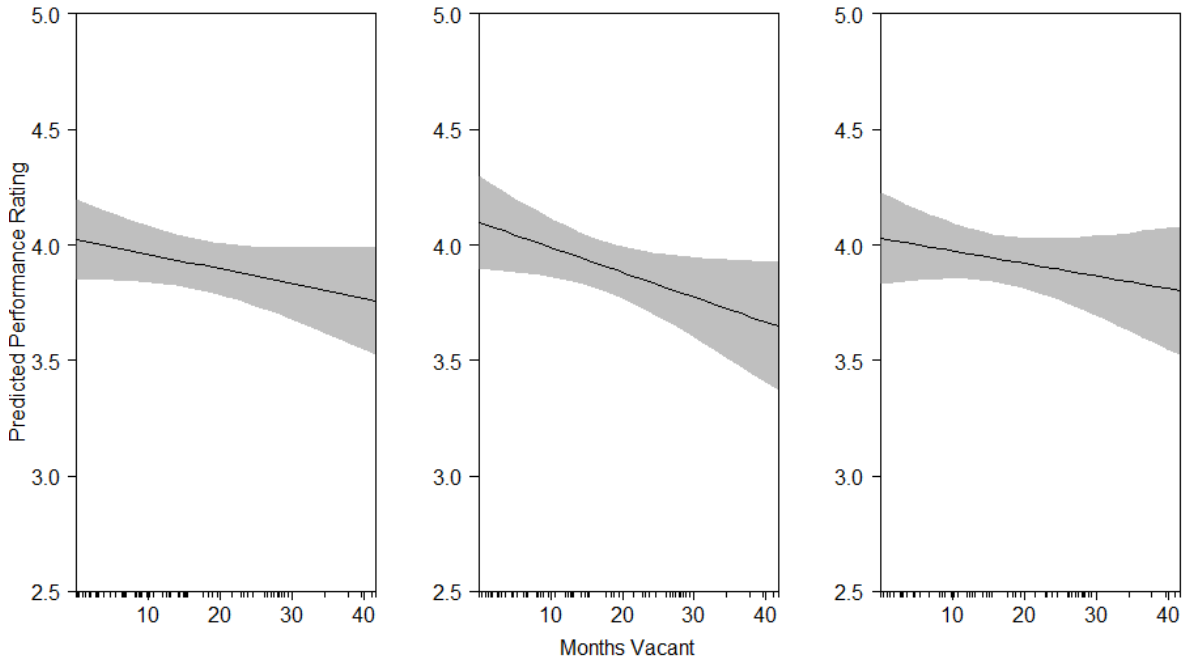
Agency Performance (1-5)			
Months Vacant (0-42)	-0.006 [0.004]	-0.011 [0.003]**	-0.008 [0.003]**
Leadership Transitions (0-4)		0.035 [0.045]	-0.02 [0.061]
EOP (0,1)		-0.306 [0.089]**	-0.245 [0.062]**
Office of the Secretary (0,1)		-0.441 [0.187]**	-0.601 [0.202]**
Independent Commission (0,1)		-0.13 [0.086]	0.06 [0.054]
Priority Department (0,1)		-0.235 [0.188]	
Priority Bureau (0,1)		0.121 [0.137]	
Workforce Skill -- Obama Administration			0.255 [0.054]**
Employees (1000s)			0.001 [0.001]**
%Democratic Respondents			-0.282 [0.213]
%Appointee Respondents			0.143 [0.578]
Constant	4.023 [0.092]**	4.251 [0.105]**	4.268 [0.200]**
R2	0.03	0.14	0.32
N	76	76	62

Note: * p<0.1; ** p<0.05. Data: Survey on the Future of Government Service, 2020. Dependent variable is agency average responses to question: “How would you rate the overall performance of the Economic Research Service in carrying out its mission?” (1-5). Models estimated with Ordinary Least Squares and standard errors are clustered by department.

Beyond the key expectations, the model estimates indicate that respondents working in the Office of the Secretary and the EOP report significantly lower performance. Respondents working in high performing agencies at the start of the Trump Administration continue to report higher performance and respondents in larger agencies do as well. The coefficient on workforce skills, as measured by outside observers, at the start of the Trump Administration is a good predictor of self-

reported performance. An increase of one standard deviation on workforce skill is estimated to increase agency performance by about 0.20.

Figure 2. Estimated Impact of PAS Vacancies on Self-Reported Agency Performance (2020)



Note: Graphs of estimated effects of vacancies correspond to models in Table 1 with variables held at their means. The Y-axis is truncated to the range of agency averages in the data.

An important conclusion emerges from these initial models. A correlation between vacancies and lower performance is evident even with this very noisy measure of performance. Appointed and career executives working in agencies with leadership vacancies reported lower average performance than executives working in agencies with confirmed appointees. This is some of the first large-N evidence that the increased prevalence of vacancies is a crisis that is consequential for performance.

Mechanisms

Finding a correlation between vacancies and lower performance raises the question of *how* vacancies matter. We argued above that vacancies could influence the ability of agencies to think about the future and plan ahead, influence the morale and motivation of career professionals, and determine the willingness of outside stakeholders to invest in the agency and its capacity. To

evaluate the effect of vacancies on these components of performance we turn again to the survey which included questions designed to shed light on these mechanisms.³²

To determine the effect of vacancies on time horizons we look at average agency responses to the following question: “To what extent do you agree or disagree with the following statements? ‘[My agency] is investing now to enable our future success’ [Strongly disagree (0), Disagree (1), Neither agree nor disagree (2), Agree (3), Strongly agree (4), Don’t know]” The average agency response varies from 1.20 to 3.62 with a mean value of 2.47 (SD 0.58).

To measure agency morale and motivation we use two questions from the survey. The first asks “Considering everything, how satisfied are you with your agency? [Very dissatisfied (0), Dissatisfied (1), Neither satisfied nor dissatisfied (2), Satisfied (3), Very satisfied (4)].” Agency average responses vary from 1.33 (Office of Justice Programs) to 4 (U.S. Marshals Service) with a mean of 2.80 (SD 0.56). The second question asks respondents “To what extent do you agree or disagree with the following statements? [My agency] has a sense of urgency for getting things done [Strongly disagree (0), Disagree (1), Neither agree nor disagree (2), Agree (3), Strongly agree (4), Don’t know].” The lowest average response was 1.74 (Bureau of Indian Affairs) and the highest a 4 (Coast Guard). The average response was to agree with this statement, which may reflect something about the role of government during the pandemic (Mean 3.03, SD 0.51).

³² There were two other sets of measures in the 2020 survey plausibly related to the theoretical explanation we describe in this paper. The first is a measure about whether the agency deals effectively with poor performers, a characteristic related to whether leadership holds workers accountable. The second is a series of questions about whether federal executives engage in activities we associate with expertise acquisition. We do not include models of these variables in the main text because these measures plausibly other several concepts at the same time or are confounded in ways we cannot address in these models. First, acting career professionals are more likely to know the civil service rules, something that is correlated with effective handling of poor performers. This makes the measure hard to interpret agency success dealing with poor performers as a measure of accountability. Second, while vacancies are correlated with morale and motivation our theory says very little about its effects on attending conferences, talking to outside experts, and such activities which are included in the survey as measures of expertise acquisition. Sometimes, these activities are measures of a sense of urgency and sometimes the opposite. For readers interested in these questions and the related models, however, we include them in Appendix H.

Table 2. OLS Estimates of Agency Time Horizon, Morale, Motivation, Stakeholder Support, 2020

	Invest Now	Agency Satisfaction	Sense of Urgency	Appointee Effort	White House Effort	Congressional Committee Effort
Months Vacant (0-42)	-0.009 [0.002]**	-0.01 [0.004]**	-0.004 [0.004]	-0.017 [0.004]**	-0.007 [0.005]	-0.009 [0.003]**
Leadership Transitions (0-4)	0.031 [0.057]	0.006 [0.050]	0.06 [0.046]	-0.035 [0.078]	-0.006 [0.093]	0.071 [0.069]
Office of the Secretary (0,1)	-0.162 [0.218]	-0.413 [0.172]**	-0.215 [0.188]	0.015 [0.158]	0.581 [0.306]*	-0.04 [0.251]
EOP (0,1)	-0.746 [0.099]**	-0.192 [0.119]	0.542 [0.152]**	-0.315 [0.203]	0.014 [0.211]	-0.177 [0.122]
Independent Commission (0,1)	-0.142 [0.122]	-0.095 [0.091]	0.115 [0.023]**	-0.013 [0.085]	-0.469 [0.077]**	-0.149 [0.111]
Priority Department (0,1)	-0.215 [0.251]	-0.28 [0.182]	-0.002 [0.103]	-0.403 [0.168]**	-0.252 [0.172]	0.013 [0.189]
Priority Bureau (0,1)	0.2 [0.218]	0.155 [0.182]	0.187 [0.145]	0.354 [0.234]	0.304 [0.238]	-0.016 [0.162]
Constant	2.75 [0.128]**	3.16 [0.100]**	2.926 [0.105]**	3.228 [0.100]**	1.769 [0.155]**	2.62 [0.162]**
R2	0.08	0.12	0.13	0.2	0.14	0.08
N	74	75	75	72	72	72

Note: *Significant at the 0.10 level; **significant at the 0.05 level in two-tailed tests. Dependent variables are agency average responses to questions indicated above each column. Models 1, 3 are asked in form, “To what extent do you agree or disagree with the following statements?” (0-4). Model 1 includes estimates of agency average responses to the statement “[My agency] is investing now to enable our future success.” Model 3 includes estimates of responses to statement “[My agency] has a sense of urgency for getting things done.” Model 2 includes estimates of responses to the question, “Considering everything, how satisfied are you with [your agency]?” (0-4). Models 4-6 are asked in form, “How much effort do the following groups spend to ensure that [your agency] has what it needs to carry out its mission?” (0-4). Models estimated with Ordinary Least Squares and standard errors are clustered by department.

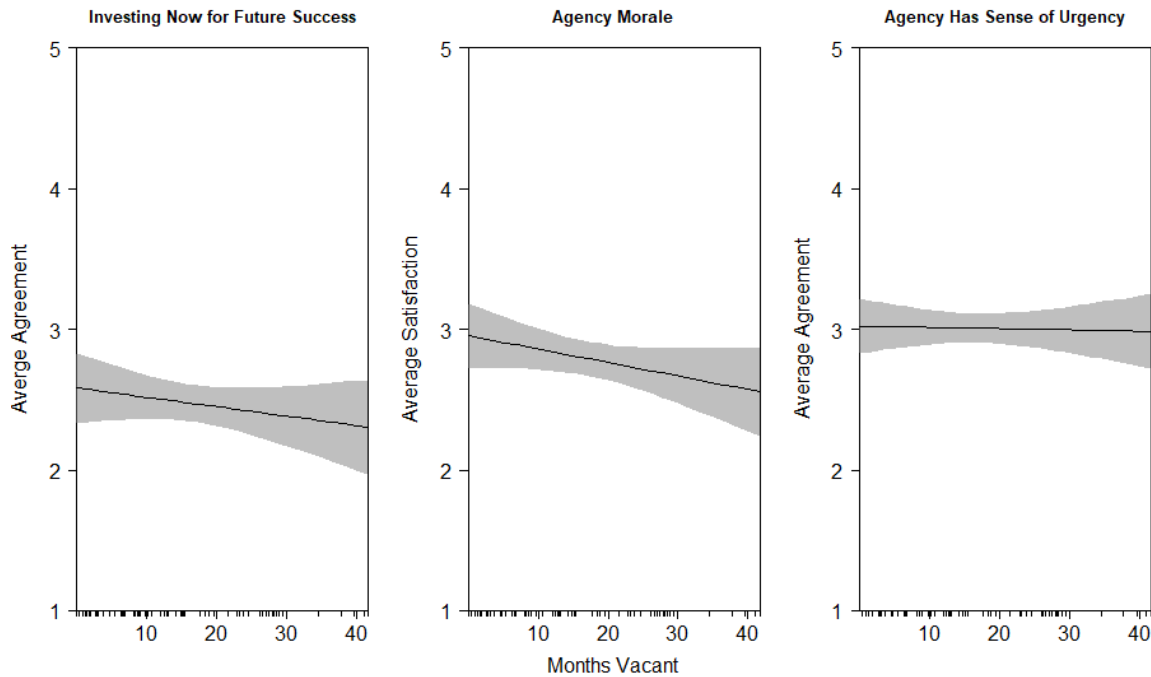
Finally, to measure investment in the agency by outside stakeholders we use the following question: “How much effort do the following groups spend to ensure that [your agency] has what it needs to carry out its mission?” Respondents are asked about Political Appointees, the White House, and Congressional Committees. The response categories include: None (0), Little (1), Some (2), A good bit (3), A great deal (4), and Don’t know. Average responses for each group are 2.70, 1.53, and 2.54, respectively. Respondents report the most investment by political appointees, followed by Congress and then the White House. The specific models of appointee investment are particularly noteworthy since a correlation between vacancies and less appointee investment also provides evidence that vacancies contribute to the short-term perspective of agency heads.

Given the large number of models, we replicate model 2 from Table 1 for each potential mechanism. We include those results in Table 2. Tables with all the specifications are included in Appendix E. Several conclusions emerge from this analysis. First, agencies headed by PAS appointees report less long-term planning when vacancies persist. Second, model estimates suggest that vacancies decrease agency morale but there is little direct evidence that vacancies lead to less urgency. Finally, vacancies lead to less effort by political stakeholders to make sure agencies have what they need to accomplish their core missions.

In the first model dealing with agency average responses to the statement “[My agency] is investing now to enable our future success”, mirrors the results of the agency performance models. The coefficient is negative and precisely estimated. This indicates that vacancies are estimated to *decrease* long-term planning overall. This can be seen clearly in Figure 3. A 12 month vacancy is estimated to decrease average agency responses by about .11 and a 24 month vacancy, 0.22. Average agency responses to this question varied from 1.2 to 3.6 with a standard deviation of 0.59. So, a position vacant for 2-3 years is estimated to lead to about a standard deviation change in an agency’s average level of agreement with statements about long-term focus and planning. This indicates that

agencies with long-term vacancies have a harder time making plans for the future. The Figure also illustrates the similarity between the basic agency performance results and the investment results, suggesting that systematically less investment in future planning may contribute to lower performance.

Figure 3. Estimated Impact of PAS Vacancies on Self-Reported Investment in Agency’s Future Success (2020)



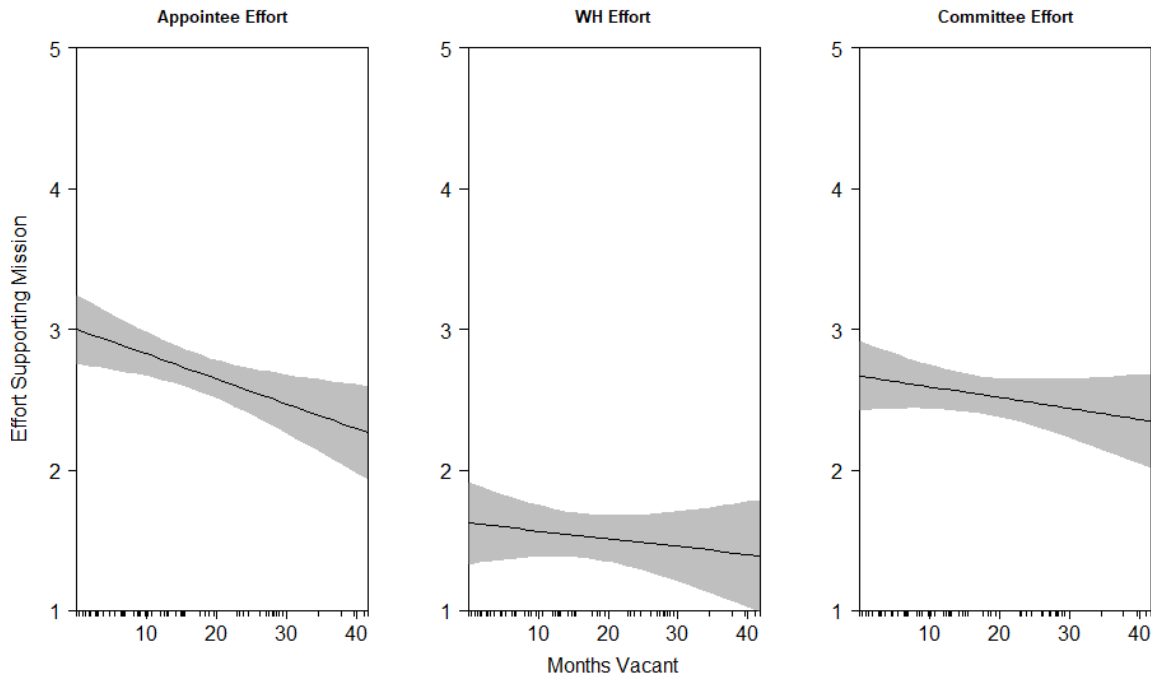
Note: Graphs of estimated effects of vacancies correspond to models in Table 2 with variables held at their means.

Similarly, vacancies are estimated to decrease morale and motivation, although we could not reject the null hypothesis that vacancies had no effect on the sense of urgency in different agencies. The estimates suggest that a 12-month vacancy would decrease the agency average morale by about .12. The agency average response is 2.8 somewhere between “Neither dissatisfied nor satisfied” and “Satisfied” and the standard deviation was 0.54. A 2-3 year vacancy in a position like DEA Administrator is estimated to decrease agency satisfaction by about half a standard deviation, for example the difference between 2.8 (i.e., lukewarm response) and 3.10 (i.e. a satisfied team). Most federal executives agreed with the statement that their agency had a sense of urgency. The estimates

suggest fewer executives report a sense of urgency with persistent vacancies (i.e., a decrease of .03 every 12 months a position is vacant) but we cannot reject the null that vacancies have no effect on how motivated workers were during the pandemic.

Finally, among the most notable results across the models are that key stakeholders—appointees, the White House, and Congress—expend less effort making sure agencies have what they need to carry out their missions when there are vacancies. The coefficient estimate on months PAS positions are vacant is negative in all three models. It is estimated precisely for political appointees and congressional committees. Substantively, the coefficient estimate indicates that vacancies decrease the effort that stakeholders put into building capacity. If we are looking for a reason why vacancies hurt performance, the lack of investment by political principals looks like an important factor. This is seen most clearly in Figure 4. The estimated decrease in average support for a 12-month vacancy varies from 0.08 (White House) to 0.11 (Congressional Committee) to 0.20 (Political Appointee). To put this in perspective, a 36-month vacancy is estimated to lead to a standard deviation decrease in reported appointee effort to make sure that an agency has what it needs. The effect is about half that for congressional committees and about a third of that for the White House. These results are large enough to lead to agency average responses changing from an average of “A good bit” of effort to between “A good bit” of effort and “Some” effort. These effects persist even accounting for whether an agency was important to the president, whether it had a liberal or conservative mission, was large or small, and whether respondents were appointees or careerists. Even when accounting for these factors, vacancies were correlated with less effort by political actors to give the agency what it needs to carry out its mission. This is important evidence that stakeholders delay or withhold support for agencies as stakeholders as agencies wait for confirmed leaders. It is another pathway by which vacancies may hurt performance.

Figure 4. Estimated Impact of PAS Vacancies on Support of Key Stakeholders (2020)



Note: Graphs of estimated effects of vacancies correspond to models in Table 2 with variables held at their means.

Discussion

While many scholars argue that persistent vacancies hurt federal agency performance, there has been very little systematic evidence to support this claim. One reason why the evidence may be hard to find is that it has been difficult to measure performance systematically and connect it with vacancies. In this paper we have sought to clarify the reasons why vacancies may be harmful and we have introduced a new measure of performance that overcomes the limitations of some other measures. The results indicate that persistent vacancies are correlated with lower self-reported performance. The mechanisms leading to these results are short time horizons, low morale, and a lack of investment by political officials. Agencies with regular turnover report less of a long-term focus, less satisfaction with the agency, and less effort by elected officials to give the agency what it needs to carry out its core mission.

While our data provide a unique measure of performance applicable cross-sectionally, the analysis is limited in a few ways. First, the measure includes averages of agency self-reports which

have been shown in some contexts to be poorly correlated with actual performance (Meier and O'Toole 2013). While self-reports here should be biased in predictable ways that we account for in model estimation, more work needs to be done to validate and supplement the measure. Second, the measure is a snapshot at one point in time. For more reliable causal inference, it would be helpful to have some sense of trends over time to more reliably connect differences in vacancies to variation in performance. Finally, because the unit of analysis is agencies, our N is limited to about 77 different agencies. There is a tradeoff between a good measure of performance and its availability. While this paper sheds light on the relationship between vacancies and performance, it is one piece of evidence, rather than the final word, in a larger discipline-wide research program on this subject. It helps to sharpen where more work needs to be done both theoretically and empirically on this important question.

Given our focus on the Trump administration, we may have concerns about the generalizability of our results. However, the prevalence and length of vacancies has only increased into the Biden administration (Partnership for Public Service 2022). With decreased senatorial deference to the president, vacancies have become a persistent feature of administrative management. Therefore, the harmful effects of vacancies will likely continue well past the Trump administration. Further, the consistency of the results found for each of the mechanisms suggests that vacancies not only influence how presidents interact with agencies, but how those within the agency and other external actors respond. This indicates that vacancies have broad effects rather than just on the management approach of one individual president.

We may also have concerns about the intentionality of vacancies. As other scholars have shown, presidents may use vacancies strategically and may delay nominations to agencies where they have selected acting officials (Kinane 2021; Piper 2021). Therefore, presidents may intentionally leave positions vacant as a larger strategy to undermine the agency or prevent it from functioning

properly. To address these concerns, we have estimated models that subset to agencies that were directly responsible for a policy priority of the president and to agencies with an ideological reputation in opposition to the president.³³ In both cases, the estimates suggest that vacancies are harmful to performance across agency subsets. This suggests that regardless of whether vacancies are a conscious choice of the president or an unintended byproduct of a slowed down and conflictual confirmation process, the effect on performance is similar.

Finally, we may have concerns that the effects of vacancies found here are not applicable to all cases. Of course, we are only examining the average effects of vacancies on agency performance.³⁴ Therefore, it is possible in some cases for the presence of a confirmed appointee to be more harmful to the agency's performance than a vacancy. The appointee may be seeking to dismantle the agency or may be supremely unqualified for their position. For example, President Trump's Consumer Financial Protection Bureau Director, Kathy Kraninger, was reported to take steps to "neuter" the agency (Schmidt and Hamilton 2020). However, it is historically rare for appointees to be altogether harmful to agency performance, partly because it would be hard for them to get through the Senate. If such appointments were more common, this would lead us to underestimate the effect of vacancies on performance. In this case, agencies with confirmed appointees would include both instances of appointees harmful to the agency and helpful to the agency. Therefore, vacancies would appear to be less harmful than they truly are.

³³ We assume that presidents are more likely to seek to harm ideologically opposed agencies and have a vested interest in the functioning of ideologically aligned and priority agencies. Model estimates are reported in Appendix I. Results are substantively similar across agency subsets.

³⁴ We have also estimated models to assess the possible contingent effects of vacancies. In particular, we estimated models with interactions for agency insulation, reputation, professionalization, and frequency of vacancies and turnover. There is some suggestive evidence that vacancies matter more in more insulated agencies and agencies with a higher percentage of professionals. However, given the limited number of cases we are cautious to say anything definitive about the results. Model estimates are reported in Appendix D.

Conclusion

On June 21, 2021 Anne Milgram was sworn in as the new director for the DEA. She was the first Senate-confirmed head since 2015.³⁵ While many factors influence agency performance, the results in this paper suggest that Milgram's confirmation should help DEA. Respondents working in agencies with confirmed appointees as head report higher performance than respondents working in agencies whose PAS slots were filled by temporary acting officials. They also report more long-term planning, higher morale, and more investment by key political officials than their counterparts in agencies serving under a string of temporary acting officials. Not only do confirmed leaders provide presidents with more control over agency policymaking and priority setting (e.g., Bolton, Potter, and Thrower 2015; Piper 2022), but they also help to keep agencies properly functioning, supported, and planning for the future.

The example of Milgram and the broader results have several implications. First, one implication of this research is that we need clearer conceptualization and theorizing about the effect of vacancies and other features of the personnel system on performance. This paper's analysis of vacancies and turnover on performance suggest that vacancy length and turnover are quite distinct concepts with different effects. Indeed, the length of vacancies and the number of leaders is negatively correlated. An agency that experiences a string of appointed leaders that get successfully nominated and confirmed may indicate a level of support for an agency quite different from an agency that has no turnover but a persistent vacancy.

Second, this examination of vacancies and performance highlights an enduring theme in studies of the American administrative state, namely the large number and penetration of appointees in the U.S. federal bureaucracy. While Milgram's confirmation is good news for the DEA, this does

³⁵ Drug Enforcement Administration, "Anne Milgram Sworn in as DEA Administrator," June 29, 2021 (<https://www.dea.gov/press-releases/2021/06/29/anne-milgram-sworn-dea-administrator>).

not imply that Senate-confirmed appointees are superior to career professionals more generally. Indeed, substantial evidence suggests that programs headed by career professionals perform better than comparable programs headed by political appointees (see, e.g., Gilmour and Lewis 2006; Gallo and Lewis 2012). While a confirmed appointee is better than a vacancy, this does not imply that a confirmed appointee is better than a permanent careerist in the same role. The degree of appointee penetration varies across the executive branch and this variation has important consequences for political control and the performance and long-term health of the administrative state.

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Appendix A. Models of PAS Position Vacancy Length, 2017-2020

	Months Vacant (0-42)
Workforce Skill -- Obama Administration	-1.892 [2.115]
Office of the Secretary (0,1)	-14.593 [4.763]**
EOP (0,1)	-15.08 [5.179]**
Independent Commission (0,1)	-5.944 [3.945]
Priority Department (0,1)	-2.821 [3.518]
Priority Bureau (0,1)	6.936 [6.284]
Agency Ideology (L-C)	-5.354 [2.127]**
Employees (1000s)	0.029 [0.016]*
Constant	16.583 [4.186]**
<hr/>	
R2	0.33
N	62

Note: * p<0.1; ** p<0.05. Dependent variable is number of months a PAS position was vacant in the Trump Administration prior to the 2020 Survey on the Future of Government Service. Models estimated with Ordinary Least Squares and standard errors are clustered by department.

Appendix B. Models of Agency Performance with Only High Skilled Agencies, 2020

Agency Performance (1-5)	50th Percentile	75th Percentile	90th Percentile
Months Vacant (0-42)	-0.008 [0.006]	-0.016 [0.007]**	-0.026 [0.013]*
Leadership Transitions (0-4)	0.057 [0.103]	0.099 [0.118]	0.202 [0.277]
EOP (0,1)	-0.11 [0.214]	0.125 [0.214]	
Office of the Secretary (0,1)	-0.89 [0.311]**		
Independent Commission (0,1)	0.126 [0.150]	0.152 [0.230]	-0.225 [0.347]
Priority Department (0,1)	-0.098 [0.248]	-0.088 [0.307]	0.114 [0.397]
Priority Bureau (0,1)	-0.097 [0.227]	-0.475 [0.310]	-0.655 [0.236]**
Constant	4.208 [0.153]**	4.33 [0.224]**	4.27 [0.391]**
R2	0.23	0.38	0.58
N	43	24	14

Note: * p<0.1; ** p<0.05. Data: Survey on the Future of Government Service, 2020. Dependent variable is agency average responses to question: "How would you rate the overall performance of the Economic Research Service in carrying out its mission?" (1-5). Models estimated with sub-samples based upon workforce skill rating from 2014 survey. Subsamples specified in column headings. Models estimated with Ordinary Least Squares and standard errors are clustered by department. Some coefficient estimates missing because of empty cells.

Appendix C. Coding of Agency Priority, Trump Administration, 2017

Policy Issue	Agency--Department Level	Agency--Bureau Level
Term limits	Department of Justice	
Hiring freeze	Office of Personnel Management	
Regulatory policy	Office of Management and Budget	Office of Information and Regulatory Affairs (OMB)
Ethics	Office of Government Ethics	
NAFTA	Office of the United States Trade Representative; Department of State	Economic Growth, Energy, and the Environment (STAT); Bureau of Economic and Business Affairs (STAT)
TPP	Office of the United States Trade Representative; Department of State	Economic Growth, Energy, and the Environment (STAT); Bureau of Economic and Business Affairs (STAT)
Currency Manipulation ³⁶	Department of the Treasury	International Affairs (TREAS)
Trade Abuses ³⁷	Department of the Treasury; Department of Commerce; Office of the United States Trade Representative; Department of State; US Agency for International Development, US International Trade Commission, US Trade and Development Agency, Department of Agriculture	International Trade Administration, Foreign Agricultural Service, Bureau of Industry and Security, U.S. Commercial Service, Trade Adjustment Assistance, Treasury (International), International Affairs (Energy), EPA (International Programs)
Energy production	Department of the Interior; Department of Energy	Office of Fossil Energy; Bureau of Ocean Energy Management; Office of Surface Mining and Enforcement; Bureau of Land Management; Land and Minerals Management
Keystone Pipeline	Department of State	
Climate Change	Environmental Protection Agency; Department of State; Department of Commerce; Council on Environmental Quality	National Oceanic and Atmospheric Administration
Executive Orders	Department of Justice	Office of Legal Counsel (DOJ)
Gorsuch Nomination	Department of Justice	Office of Justice Policy (DOJ)

³⁶ <https://home.treasury.gov/system/files/206/2019-05-28-May-2019-FX-Report.pdf>

³⁷ <https://ustr.gov/about-us/trade-toolbox/us-government-trade-agencies>

Sanctuary Cities	Department of Justice	
Immigration enforcement	Department of Homeland Security	Immigration and Customs Enforcement; Citizenship and Immigration Services; Customs and Border Protection
Visas	Department of State; Department of Homeland Security	Bureau of Consular Affairs; Citizenship and Immigration Services
Tax Relief	Department of the Treasury; Council of Economic Advisers	Tax Section; Internal Revenue Service
Offshoring	Department of the Treasury	Internal Revenue Service
Infrastructure ³⁸	Department of Transportation; Department of Defense; Environmental Protection Agency; Department of Veterans Affairs; Department of Agriculture	Federal Highway Administration, Federal Transit Administration, Federal Railroad Administration, Army Corps of Engineers; Federal Aviation Administration; Maritime Administration; Veterans Health Administration; EPA (Water Infrastructure); Rural Development (USDA)
School choice	Department of Education	Office of Elementary and Secondary Education
Obamacare	Department of Health and Human Services	Centers for Medicare and Medicaid Services
Childcare and eldercare	Department of Treasury	Internal Revenue Service
Border wall	Department of Homeland Security	Customs and Border Protection; Immigration and Customs Enforcement
Violent crime	Department of Justice	
Military Spending	Department of Defense; National Security Council	Comptroller; Department of the Army; Department of the Navy; Department of the Air Force; Joint Chiefs
Veterans	Department of Veterans Affairs	Veterans Health Administration
Cyber security	Department of Defense; Department of Homeland Security; Central Intelligence Agency; Office of the Director of National Intelligence	National Security Agency; Cybersecurity and Infrastructure Agency (DHS)
Red tape at FDA	Department of Health and Human Services	Food and Drug Administration
Medicaid	Department of Health and Human Services	Centers for Medicare and Medicaid Services

³⁸https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/budget/fy2018/fact_sheets/2018%20Budget%20Fact%20Sheet_Infrastructure%20Initiative.pdf

Appendix D. Supplementary Models of Agency Performance (2020)

Table D1. OLS Models of Agency Performance with Controls for Agency Ideology or Logged Employment, and Jackknife Errors

Agency Performance	Agency Ideology	Logged Employment	Jackknife Errors
Months Vacant (0-42)	-0.009 [0.003]**	-0.011 [0.004]**	-0.011 [0.006]**
Leadership Transitions (0-4)	-0.002 [0.054]	0.013 [0.060]	0.035 [0.064]
EOP (0,1)	-0.402 [0.059]**	-0.047 [0.143]	-0.306 [0.216]
Office of the Secretary (0,1)	-0.397 [0.157]**	-0.651 [0.276]**	-0.441 [0.252]*
Independent Commission (0,1)	-0.187 [0.034]**	-0.08 [0.087]	-0.13 [0.209]
Priority Department (0,1)	-0.319 [0.144]**	-0.264 [0.190]	-0.235 [0.184]
Priority Bureau (0,1)	0.187 [0.123]	0.028 [0.195]	0.121 [0.151]
Agency Ideology (L-C)	0.097 [0.052]*		
Ln(Employment)		0.077 [0.039]*	
Constant	4.362 [0.079]**	4.202 [0.103]**	4.251 [0.198]**
R2	0.21	0.19	0.14
N	69	68	76

Note: * p<0.1; ** p<0.05. Data: Survey on the Future of Government Service, 2020. Dependent variable is agency average responses to question: “How would you rate the overall performance of the Economic Research Service in carrying out its mission?” (1-5). Model 1 includes measure of agency ideology from Richardson et al. (2018). Model 2 includes the natural log of agency employment. Model 3 estimated with Ordinary Least Squares but the standard errors produced by jackknife estimator. Other models estimated with Ordinary Least Squares and robust standard errors adjusted for clustering by department.

Table D2. OLS Estimates of Agency Performance, Using Months to First Confirmed Nominee (2020)

Agency Performance (1-5)			
Number of Months Before 1st Nominee Confirmed	-0.002 [0.004]	-0.007 [0.005]	-0.004 [0.006]
Leadership Transitions (0-4)		-0.017 [0.050]	-0.086 [0.055]
EOP (0,1)		-0.248 [0.109]**	-0.224 [0.120]*
Office of the Secretary (0,1)		-0.364 [0.203]*	-0.568 [0.183]**
Independent Commission (0,1)		-0.331 [0.082]**	0.001 [0.162]
Priority Department (0,1)		-0.19 [0.158]	
Priority Bureau (0,1)		0.103 [0.138]	
Workforce Skill -- Obama Administration			0.254 [0.099]**
Employees (1000s)			0.001 [0.000]
%Democratic Respondents			-0.568 [0.346]
%Appointee Respondents			0.048 [0.713]
Constant	3.918 [0.084]**	4.191 [0.103]**	4.482 [0.156]**
R ²		0.00	0.10
N		65	51

Note: * p<0.1; ** p<0.05. Data: Survey on the Future of Government Service, 2020. “How would you rate the overall performance of [your agency] in carrying out its mission?” (1-5). Models estimated with Ordinary Least Squares and standard errors are clustered by department.

Table D3. OLS Estimates of Agency Performance, Controls and Interactions for Normal Experience with Vacancies (2020)

Agency Performance	Obama Vacancies	Obama Vacancies	Bush Vacancies	Bush Vacancies
Months Vacant (0-42)	-0.011 [0.005]**	-0.016 [0.008]**	-0.012 [0.005]**	-0.007 [0.009]
Leadership Transitions (0-4)	0.035 [0.057]	0.029 [0.058]	0.03 [0.057]	0.031 [0.058]
EOP (0,1)	-0.303 [0.375]	-0.326 [0.378]	-0.272 [0.380]	-0.202 [0.398]
Office of the Secretary (0,1)	-0.428 [0.232]*	-0.468 [0.239]*	-0.409 [0.227]*	-0.342 [0.252]
Independent Commission (0,1)	-0.117 [0.208]	-0.107 [0.210]	-0.100 [0.206]	-0.084 [0.209]
Priority Department (0,1)	-0.236 [0.178]	-0.215 [0.181]	-0.222 [0.179]	-0.241 [0.183]
Priority Bureau (0,1)	0.124 [0.157]	0.134 [0.158]	0.102 [0.159]	0.076 [0.165]
Vacant Months(Obama)	0.001 [0.004]	-0.003 [0.007]		
Months Vacant*Vacant Months(Obama)		0.000 [0.000]		
Vacant Months(Bush)			0.003 [0.006]	0.009 [0.011]
Months Vacant*Vacant Months(Bush)				0.000 [0.000]
Constant	4.238 [0.192]**	4.293 [0.208]**	4.211 [0.192]**	4.139 [0.226]**
R ²	0.14	0.15	0.14	0.15
F (8,9 df)	1.34	1.23	1.37	1.25
Wald Test (1 df)		0.51		0.53
N	75	75	75	75

Note: * p<0.1; ** p<0.05. Data: Survey on the Future of Government Service, 2020. “How would you rate the overall performance of [your agency] in carrying out its mission?” (1-5). Models estimated with Ordinary Least Squares and standard errors are clustered by department.

Table D4. OLS Estimates of Agency Performance, Controls and Interactions for Normal Experience with Turnover (2020)

Agency Performance	Obama Turnover	Obama Turnover	Bush Turnover	Bush Turnover
Months Vacant (0-42)	-0.010 [0.005]**	-0.014 [0.012]	-0.011 [0.005]**	0.006 [0.016]
Leadership Transitions (0-4)	0.027 [0.056]	0.028 [0.056]	0.026 [0.058]	0.005 [0.061]
EOP (0,1)	-0.414 [0.372]	-0.394 [0.381]	-0.352 [0.380]	-0.485 [0.395]
Office of the Secretary (0,1)	-0.507 [0.217]**	-0.501 [0.220]**	-0.43 [0.218]*	-0.379 [0.222]*
Independent Commission (0,1)	-0.193 [0.200]	-0.195 [0.201]	-0.159 [0.206]	-0.178 [0.206]
Priority Department (0,1)	-0.209 [0.175]	-0.219 [0.178]	-0.224 [0.178]	-0.200 [0.179]
Priority Bureau (0,1)	0.078 [0.154]	0.077 [0.155]	0.098 [0.159]	0.089 [0.158]
#PAS Leaders(Obama)	0.135 [0.079]*	0.111 [0.114]		
Months Vacant*#PAS Leaders(Obama)		0.002 [0.006]		
#PAS Leaders(Bush)			0.053 [0.081]	0.206 [0.153]
Months Vacant*#PAS Leaders(Bush)				-0.007 [0.006]
Constant	3.975 [0.236]**	4.030 [0.301]**	4.134 [0.251]**	3.759 [0.404]**
R ²		0.18	0.18	0.14
F (8, 9 df)		1.75	1.55	1.39
Wald Test (1 df)			0.09	1.40
N		75	75	75

Note: * p<0.1; ** p<0.05. Data: Survey on the Future of Government Service, 2020. “How would you rate the overall performance of [your agency] in carrying out its mission?” (1-5). Models estimated with Ordinary Least Squares and standard errors are clustered by department.

Table D5. OLS Estimates of Agency Performance, Controls and Interactions for Selin Measures of Insulation and Professionalism (2020)

Agency Performance	Selin Insulation	Selin Insulation	Selin Insulation
Months Vacant (0-42)	-0.009 [0.005]*	-0.009 [0.004]**	-0.006 [0.004]
Leadership Transitions (0-4)	0.039 [0.062]	0.038 [0.061]	0.032 [0.060]
Priority Department (0,1)	-0.327 [0.250]	-0.299 [0.226]	-0.231 [0.164]
Priority Bureau (0,1)	0.175 [0.141]	0.153 [0.141]	0.173 [0.145]
Decision Maker Independence	-0.087 [0.088]	0.016 [0.087]	
Independence from Political Review	0.031 [0.030]		0.102 [0.048]*
Months Vacant*Decision Maker Ind.		-0.004 [0.003]	
Months Vacant*Political Rev. Ind.			-0.006 [0.002]**
EOP (0,1)			
Office of the Secretary (0,1)			
Independent Commission (0,1)			
%Professionals			
Constant	4.171 [0.176]**	4.154 [0.145]**	4.06 [0.117]**
R ²	0.09	0.09	0.11
F (8,9 df)	3.39**	10.32**	25.55**
Wald Test (1 df)		2.07	10.96**
N	70	70	70

Note: * p<0.1; ** p<0.05. Data: Survey on the Future of Government Service, 2020. “How would you rate the overall performance of [your agency] in carrying out its mission?” (1-5). Models estimated with Ordinary Least Squares and standard errors are clustered by department.

Table D6. OLS Estimates of Agency Performance, Interacting Months Vacant and Workforce Skill Ratings (2020)

Agency Performance (1-5)		
Months Vacant (0-42)	-0.008 [0.003]**	-0.009 [0.002]**
Leadership Transitions (0-4)	0.032 [0.068]	-0.027 [0.067]
Workforce Skill -- Obama Administration	0.182 [0.091]*	0.088 [0.087]
Months Vacant*Workforce Skill	0.005 [0.007]	0.01 [0.006]
EOP (0,1)	-0.373 [0.077]**	-0.303 [0.057]**
Office of the Secretary (0,1)	-0.293 [0.189]	-0.748 [0.187]**
Independent Commission (0,1)	-0.197 [0.046]**	-0.007 [0.059]
Priority Department (0,1)	-0.367 [0.141]**	
Priority Bureau (0,1)	0.265 [0.093]**	
Employees (1000s)		0.001 [0.000]
%Democratic Respondents		-0.461 [0.215]*
%Appointee Respondents		0.194 [0.503]
Constant	4.266 [0.070]**	4.476 [0.165]**
R ²	0.31	0.36
N	70	61

Note: * p<0.1; ** p<0.05. Data: Survey on the Future of Government Service, 2020. Dependent variable: “How would you rate the overall performance of [your agency] in carrying out its mission?” (1-5). Models estimated with Ordinary Least Squares and standard errors are clustered by department.

Table D7. OLS Estimates of Agency Performance, Controls and Interactions for Measures of Professionalism (2020)

Agency Performance	Pct Professional	Pct Professional
Months Vacant (0-42)	-0.016 [0.004]**	-0.030 [0.010]**
Leadership Transitions (0-4)	0.013 [0.053]	0.025 [0.061]
EOP (0,1)	-0.374 [0.109]**	-0.425 [0.122]**
Office of the Secretary (0,1)	-0.568 [0.236]**	-0.62 [0.231]**
Independent Commission (0,1)	-0.024 [0.082]	-0.015 [0.078]
Priority Department (0,1)	-0.039 [0.247]	-0.012 [0.249]
Priority Bureau (0,1)	0.096 [0.201]	0.016 [0.207]
%Professionals	0.261 [0.307]	-0.349 [0.393]
Months Vacant*%Professionals		0.040 [0.027]
Constant	4.151 [0.107]**	4.358 [0.152]**
R ²	0.21	0.23
F (8,9 df)	1.34	1.23
Wald Test (1 df)		0.48
N	62	62

Note: * p<0.1; ** p<0.05. Data: Survey on the Future of Government Service, 2020. “How would you rate the overall performance of [your agency] in carrying out its mission?” (1-5). Models estimated with Ordinary Least Squares and standard errors are clustered by department.

Table D8. OLS Estimates of Agency Performance, Controlling for Goal Clarity Using Statutory Discretion (2020)

Agency Performance (1-5)			
Months Vacant (0-42)	-0.007 [0.006]	-0.011 [0.004]**	-0.011 [0.004]**
Statutory Discretion (1-5)	-0.049 [0.103]	-0.105 [0.138]	0.089 [0.160]
Leadership Transitions (0-4)		-0.012 [0.066]	-0.013 [0.080]
EOP (0,1)		-0.601 [0.106]**	-0.359 [0.134]**
Office of the Secretary (0,1)		-0.259 [0.175]	-0.523 [0.246]*
Independent Commission (0,1)		-0.004 [0.094]	-0.016 [0.141]
Priority Department (0,1)		-0.301 [0.150]*	
Priority Bureau (0,1)		0.419 [0.141]**	
Agency Ideology (L-C)		0.038 [0.042]	0.08 [0.040]*
Workforce Skill -- Obama Administration			0.262 [0.056]**
Employees (1000s)			0 [0.000]
%Democratic Respondents			0.231 [0.325]
%Appointee Respondents			-0.057 [1.482]
Constant	4.186 [0.295]**	4.57 [0.419]**	3.783 [0.550]**
R ²		0.03	0.25
N		56	54

Note: * p<0.1; ** p<0.05. Data: Survey on the Future of Government Service, 2020 “How would you rate the overall performance of [your agency] in carrying out its mission?” (1-5). Variable on statutory discretion from Survey on the Future of Government Service, 2014 “How much discretion do [your agency] have over the following aspects of its management environment? The proper interpretation of statutes” 0-None, 1-Little, 2- Some, 3-A good bit, 4-A great deal, Don’t know. Models estimated with Ordinary Least Squares and standard errors are clustered by department.

Table D9. OLS Estimates of Agency Performance, Controlling for Goal Clarity Using Strength of Partisan Disagreement over What Agency Should Do (2020)

Agency Performance (1-5)			
Months Vacant (0-42)	-0.007 [0.003]*	-0.008 [0.002]**	-0.008 [0.003]**
Strength of Partisan Disagreement over Agency (1-5)	-0.456 [0.074]**	-0.477 [0.088]**	-0.410 [0.106]**
Leadership Transitions (0-4)		0.021 [0.051]	0.021 [0.071]
EOP (0,1)		-0.252 [0.103]**	-0.147 [0.146]
Office of the Secretary (0,1)		-0.162 [0.106]	-0.350 [0.157]**
Independent Commission (0,1)		0.091 [0.062]	0.085 [0.086]
Priority Department (0,1)		-0.127 [0.083]	
Priority Bureau (0,1)		0.293 [0.110]**	
Agency Ideology (L-C)		0.024 [0.060]	0.038 [0.068]
Workforce Skill -- Obama Administration			0.132 [0.080]
Employees (1000s)			0.001 [0.000]
%Democratic Respondents			0.269 [0.283]
%Appointee Respondents			-0.257 [0.679]
Constant	4.869 [0.146]**	4.957 [0.125]**	4.669 [0.230]**
R ²	0.30	0.44	0.47
N	75	68	60

Note: * p<0.1; ** p<0.05. Data: Survey on the Future of Government Service, 2020. Dependent variable: “How would you rate the overall performance of [your agency] in carrying out its mission?” (1-5). Variable on partisan disagreement: “How strongly do Republicans and Democrats in Washington disagree over what [your agency] should do?” 0-No disagreement, 1-Low intensity disagreement, 2-Moderate intensity disagreement, 3-High intensity disagreement, Don’t know. Models estimated with Ordinary Least Squares and standard errors are clustered by department.

Table D10. OLS Estimates of Agency Performance, Including Percentage of Vacant Quarters with a Political Acting (2020)

Agency Performance (1-5)				
Months Vacant (0-42)	-0.003	-0.011	-0.008	
	[0.004]	[0.005]**	[0.005]	
% Vacant Quarters w/ Political Acting	-0.054	-0.083	-0.088	
	[0.177]	[0.196]	[0.152]	
Leadership Transitions (0-4)		0.016	-0.071	
		[0.059]	[0.089]	
EOP (0,1)		-0.32	-0.315	
		[0.117]**	[0.079]**	
Office of the Secretary (0,1)		-0.421	-0.673	
		[0.190]**	[0.191]**	
Independent Commission (0,1)		-0.632	-0.197	
		[0.179]**	[0.199]	
Priority Department (0,1)		-0.26		
		[0.222]		
Priority Bureau (0,1)		0.144		
		[0.165]		
Workforce Skill -- Obama Administration			0.227	
			[0.106]*	
Employees (1000s)			0.001	
			[0.001]*	
%Democratic Respondents			-0.469	
			[0.319]	
%Appointee Respondents			-0.158	
			[0.707]	
Constant	3.966	4.332	4.569	
	[0.131]**	[0.203]**	[0.201]**	
R ²		0.01	0.14	0.40
N		59	59	46

Note: * p<0.1; ** p<0.05. Data: Survey on the Future of Government Service, 2020. Dependent variable: “How would you rate the overall performance of [your agency] in carrying out its mission?” (1-5). Models estimated with Ordinary Least Squares and standard errors are clustered by department.

Appendix E. Supplementary Models of Agency Time Horizon, Morale, Motivation, Stakeholder Support, 2020

Table E1. OLS Estimates of Models of Agency Time Horizon (2020)

Invest Now (0-4)			
Months Vacant (0-42)	-0.004 [0.004]	-0.009 [0.002]**	-0.005 [0.002]**
Leadership Transitions (0-4)		0.031 [0.057]	0.01 [0.073]
EOP (0,1)		-0.746 [0.099]**	-0.586 [0.064]**
Office of the Secretary (0,1)		-0.162 [0.218]	-0.348 [0.192]*
Independent Commission (0,1)		-0.142 [0.122]	0.052 [0.053]
Priority Department (0,1)		-0.215 [0.251]	
Priority Bureau (0,1)		0.2 [0.218]	
Workforce Skill -- Obama Administration			0.352 [0.051]**
Employees (1000s)			0.002 [0.001]**
%Democratic Respondents			-0.383 [0.228]
%Appointee Respondents			0.149 [0.464]
Constant	2.539 [0.117]**	2.75 [0.128]**	2.783 [0.212]**
R2	0.01	0.08	0.33
N	75	74	61

Note: *Significant at the 0.10 level; **significant at the 0.05 level in two-tailed tests. Dependent variable is agency average response to question “To what extent do you agree or disagree with the following statements? [My agency] has a sense of urgency for getting things done.” (0-4) Models estimated with Ordinary Least Squares and standard errors are clustered by department.

Table E2. OLS Estimates of Models of Agency Satisfaction (2020)

Satisfaction-Agency (0-4)			
Months Vacant (0-42)	-0.005 [0.003]	-0.01 [0.004]**	-0.003 [0.003]
Leadership Transitions (0-4)		0.006 [0.050]	-0.019 [0.053]
EOP (0,1)		-0.192 [0.119]	-0.063 [0.073]
Office of the Secretary (0,1)		-0.413 [0.172]**	-0.533 [0.197]**
Independent Commission (0,1)		-0.095 [0.091]	0.128 [0.058]**
Priority Department (0,1)		-0.28 [0.182]	
Priority Bureau (0,1)		0.155 [0.182]	
Workforce Skill -- Obama Administration			0.297 [0.054]**
Employees (1000s)			0.001 [0.000]*
%Democratic Respondents			-0.176 [0.198]
%Appointee Respondents			0.398 [0.580]
Constant	2.878 [0.086]**	3.16 [0.100]**	2.979 [0.210]**
R2	0.01	0.12	0.28
N	75	75	62

Note: *Significant at the 0.10 level; **significant at the 0.05 level in two-tailed tests. Dependent variable is agency average response to question “To what extent do you agree or disagree with the following statements? Considering everything, how satisfied are you with [your agency]?” (0-4). Models estimated with Ordinary Least Squares and standard errors are clustered by department.

Table E3. OLS Estimates of Models of Agency Motivation (2020)

Sense of Urgency (0-4)

Months Vacant (0-42)	-0.003 [0.004]	-0.004 [0.004]	-0.003 [0.005]
Leadership Transitions (0-4)		0.06 [0.046]	0.055 [0.059]
EOP (0,1)		0.542 [0.152]**	0.753 [0.109]**
Office of the Secretary (0,1)		-0.215 [0.188]	-0.35 [0.195]*
Independent Commission (0,1)		0.115 [0.023]**	0.158 [0.064]**
Priority Department (0,1)		-0.002 [0.103]	
Priority Bureau (0,1)		0.187 [0.145]	
Workforce Skill -- Obama Administration			0.125 [0.042]**
Employees (1000s)			0.002 [0.001]**
%Democratic Respondents			-0.259 [0.180]
%Appointee Respondents			-0.055 [0.641]
Constant	3.061 [0.099]**	2.926 [0.105]**	3.055 [0.189]**
R2	0.01	0.13	0.23
N	75	75	62

Note: *Significant at the 0.10 level; **significant at the 0.05 level in two-tailed tests. Dependent variables are agency average response to question “How much effort do the following groups spend to ensure that [your agency] has what it needs to carry out its mission?” (0-4). Models estimated with Ordinary Least Squares and standard errors are clustered by department.

Table E4. OLS Estimates of Models of Appointee Effort to Support Agency Mission (2020)

Support Mission-Appointees			
Months Vacant (0-42)	-0.014 [0.004]**	-0.017 [0.004]**	-0.013 [0.004]**
Leadership Transitions (0-4)		-0.035 [0.078]	-0.009 [0.058]
EOP (0,1)		-0.315 [0.203]	-0.089 [0.119]
Office of the Secretary (0,1)		0.015 [0.158]	-0.185 [0.214]
Independent Commission (0,1)		-0.013 [0.085]	0.254 [0.122]*
Priority Department (0,1)		-0.403 [0.168]**	
Priority Bureau (0,1)		0.354 [0.234]	
Workforce Skill -- Obama Administration			0.095 [0.114]
Employees (1000s)			0.001 [0.001]
%Democratic Respondents			-0.462 [0.541]
%Appointee Respondents			-0.46 [0.545]
Constant	2.93 [0.116]**	3.228 [0.100]**	3.208 [0.328]**
R2	0.09	0.2	0.16
N	72	72	59

Note: *Significant at the 0.10 level; **significant at the 0.05 level in two-tailed tests. Dependent variable is agency average response to question “How much effort do the following groups spend to ensure that [your agency] has what it needs to carry out its mission?” (0-4). Models estimated with Ordinary Least Squares and standard errors are clustered by department.

Table E5. OLS Estimates of Models of White House Effort to Support Agency Mission (2020)

Support Mission-WH			
Months Vacant (0-42)	-0.008	-0.007	-0.006
	[0.005]	[0.005]	[0.005]
Leadership Transitions (0-4)		-0.006	-0.053
		[0.093]	[0.066]
EOP (0,1)		0.014	0.413
		[0.211]	[0.133]**
Office of the Secretary (0,1)		0.581	0.031
		[0.306]*	[0.243]
Independent Commission (0,1)		-0.469	-0.128
		[0.077]**	[0.086]
Priority Department (0,1)		-0.252	
		[0.172]	
Priority Bureau (0,1)		0.304	
		[0.238]	
Workforce Skill -- Obama Administration			0.052
			[0.089]
Employees (1000s)			0.003
			[0.001]**
%Democratic Respondents			-1.77
			[0.433]**
%Appointee Respondents			0.17
			[0.920]
Constant	1.665	1.769	2.628
	[0.176]**	[0.155]**	[0.401]**
R2	0.02	0.14	0.49
N	72	72	59

Note: *Significant at the 0.10 level; **significant at the 0.05 level in two-tailed tests. Dependent variable is agency average response to question “How much effort do the following groups spend to ensure that [your agency] has what it needs to carry out its mission?” (0-4). Models estimated with Ordinary Least Squares and standard errors are clustered by department.

Table E6. OLS Estimates of Models of Congressional Committee Effort to Support Agency Mission (2020)

Support Mission-Committees			
Months Vacant (0-42)	-0.008	-0.009	-0.006
	[0.003]**	[0.003]**	[0.004]
Leadership Transitions (0-4)		0.071	0.091
		[0.069]	[0.059]
EOP (0,1)		-0.177	-0.167
		[0.122]	[0.099]
Office of the Secretary (0,1)		-0.04	0.021
		[0.251]	[0.244]
Independent Commission (0,1)		-0.149	-0.095
		[0.111]	[0.092]
Priority Department (0,1)		0.013	
		[0.189]	
Priority Bureau (0,1)		-0.016	
		[0.162]	
Workforce Skill -- Obama Administration			0.333
			[0.088]**
Employees (1000s)			0.001
			[0.000]**
%Democratic Respondents			-0.056
			[0.355]
%Appointee Respondents			-0.326
			[0.513]
Constant	2.681	2.62	2.565
	[0.073]**	[0.162]**	[0.215]**
R2	0.04	0.08	0.27
N	72	72	59

Note: *Significant at the 0.10 level; **significant at the 0.05 level in two-tailed tests. Dependent variable is agency average response to question “How much effort do the following groups spend to ensure that [your agency] has what it needs to carry out its mission?” (0-4). Models estimated with Ordinary Least Squares and standard errors are clustered by department.

Appendix F. OLS Estimates of Models of Reports of Whether Agency is an Effectively Managed and Well-Run Organization (2020)

Effectively Managed (0-4)

Months Vacant (0-42)	-0.004	-0.013	-0.006
	[0.004]	[0.003]**	[0.004]
Leadership Transitions (0-4)		0.011	-0.047
		[0.048]	[0.065]
EOP (0,1)		-0.81	-0.531
		[0.100]**	[0.097]**
Office of the Secretary (0,1)		-0.513	-0.867
		[0.268]*	[0.270]**
Independent Commission (0,1)		-0.286	0.02
		[0.118]**	[0.085]
Priority Department (0,1)		-0.402	
		[0.207]*	
Priority Bureau (0,1)		0.325	
		[0.198]	
Workforce Skill -- Obama Administration			0.316
			[0.070]**
Employees (1000s)			0.001
			[0.001]*
%Democratic Respondents			-0.302
			[0.271]
%Appointee Respondents			1.256
			[0.597]*
Constant	2.455	2.883	2.712
	[0.110]**	[0.124]**	[0.223]**
R2	0.01	0.17	0.3
N	75	75	62

Note: * p<0.1; ** p<0.05. Data: Survey on the Future of Government Service, 2020. Dependent variable is agency average responses to question: "To what extent do you agree or disagree with the following statements?" [My agency] is an effectively managed, well-run organization" (0-4). Models estimated with Ordinary Least Squares and standard errors are clustered by department.

Appendix G. OLS Estimates of Models of COVID Performance (Partnership for Public Service 2020)

COVID Performance (0-100)			
Months Vacant (0-42)	-0.019 [0.045]	-0.061 [0.080]	-0.069 [0.073]
Leadership Transitions (0-4)		-0.2 [0.828]	-0.2 [0.854]
EOP (0,1)		4.227 [2.483]	4.328 [1.523]**
Office of the Secretary (0,1)		-2.339 [1.207]*	-1.478 [2.072]
Independent Commission (0,1)		1.567 [0.954]	2.74 [0.836]**
Priority Department (0,1)		-1.58 [1.520]	
Priority Bureau (0,1)		0.777 [2.324]	
Workforce Skill -- Obama Administration			0.034 [0.742]
Employees (1000s)			-0.005 [0.005]
%Democratic Respondents			-5.334 [4.155]
%Appointee Respondents			-8.552 [7.154]
Constant	89.536 [1.107]**	91.503 [2.250]**	94.156 [2.455]**
R2		0.00	0.14
N		96	63

Note: * p<0.1; ** p<0.05. Data: Partnership for Public Service, 2020, COVID Performance Index (0-100). Models estimated with Ordinary Least Squares and standard errors are clustered by department.

Appendix H. Other Questions from the Survey Possibly Related to Proposed Mechanisms Influencing Performance

We have also estimated models evaluating the impact of vacancies on self-reported success dealing with poor performers and self-reported activities plausibly associated with expertise acquisition. To measure effectiveness at dealing with poor performers, we examine responses to the question “To what extent do you agree or disagree with the following statements? In [my agency], we deal effectively with poor performers” Strong disagree (0), Disagree (1), Neither agree nor disagree (2), Agree (3), Strongly Agree (4). Agency average responses vary from 0.5 to 3.08 and the mean is 1.62 (SD 0.51), suggesting few agencies report dealing effectively with poor performers.

To evaluate the impact of vacancies on expertise investment we aggregate responses to the four questions related to the following statement: How often did you do each of the following in the previous calendar year?

- Discuss policy with outside experts
- Attend seminars or training related to the policy jurisdiction of [your agency]
- Consult subject matter experts at state agencies or international agencies
- Attend industry or trade conferences related to the policy jurisdiction of [your agency]

The response categories are Never (0), Few times a year (1), Monthly (2), Weekly (3), Daily (4), and Not applicable to my job. We sum across the four responses by individual and then average these sums by agency. Agency averages vary from 0.64 to 6.21 with a mean of 3.08 (SD 1.13).

Table H1. Models of Agency Effectiveness with Poor Performers, Expertise Investment (2020)

	Poor Performers	Invest Expertise
Months Vacant (0-42)	0.001 [0.005]	0.01 [0.008]
Leadership Transitions (0-4)	-0.011 [0.060]	-0.044 [0.154]
Office of the Secretary (0,1)	-0.081 [0.149]	-0.46 [0.436]
EOP (0,1)	0.569 [0.131]**	0.436 [0.319]
Independent Commission (0,1)	-0.193 [0.052]**	0.48 [0.359]
Priority Department (0,1)	-0.301 [0.102]**	0.794 [0.567]
Priority Bureau (0,1)	-0.056 [0.101]	0.116 [0.416]
Constant	1.86 [0.158]**	2.377 [0.344]**
R2	0.09	0.1
N	75	75

Note: * $p < 0.1$; ** $p < 0.05$. Dependent variable is agency average responses to question: “To what extent do you agree or disagree with the following statements? In [my agency], we deal effectively with poor performers” (0-4) and a count of responses to the expertise questions above. Models estimated with Ordinary Least Squares and standard errors are clustered by department.

Appendix I. Models of Agency Performance with Agency Ideology and Priority Subsets

Appendix II. OLS Estimates of Agency Performance, Separating More Liberal from More Conservative Agencies (2020)

Agency Performance (1-5)	Liberal	Liberal	Liberal	Conservative	Conservative	Conservative
Months Vacant (0-42)	-0.002 [0.005]	-0.009 [0.003]**	-0.008 [0.005]	-0.013 [0.006]**	-0.011 [0.009]	-0.013 [0.012]
Leadership Transitions (0-4)		-0.007 [0.080]	-0.005 [0.094]		0.078 [0.137]	-0.029 [0.080]
Office of the Secretary (0,1)		-0.476 [0.255]*	-0.802 [0.380]*		-0.161 [0.201]	-0.373 [0.424]
Independent Commission (0,1)		-0.171 [0.038]**	0.071 [0.102]		0.06 [0.375]	-0.032 [0.204]
Priority Department (0,1)		-0.381 [0.206]			0.04 [0.407]	
Priority Bureau (0,1)		0.452 [0.251]			-0.153 [0.212]	
Workforce Skill -- Obama Administration			0.312 [0.076]**			0.166 [0.157]
Employees (1000s)			0.003 [0.004]			0.001 [0.000]
%Democratic Respondents			-0.616 [0.349]			-0.187 [0.316]
%Appointee Respondents			-0.493 [0.917]			0.528 [0.562]
EOP (0,1)					-0.18 [0.267]	
Constant	3.897 [0.126]**	4.279 [0.056]**	4.532 [0.214]**	4.185 [0.113]**	4.08 [0.440]**	4.341 [0.351]**
R ²	0.00	0.26	0.34	0.11	0.18	0.26
N	42	42	36	34	34	25

Note: * p<0.1; ** p<0.05. Data: Survey on the Future of Government Service, 2020. Dependent variable: “How would you rate the overall performance of [your agency] in carrying out its mission?” (1-5). Liberal agencies are those below the median in Richardson et al. (2018) ideology scores. Conservative agencies are those above the median. Models estimated with Ordinary Least Squares and standard errors are clustered by department.

Appendix I2. OLS Estimates of Agency Performance, Separating Priority Departments from Non-Priority Departments (2020)

Agency Performance (1-5)	Pres. Priority	Pres. Priority	Pres. Priority	No Priority	No Priority	No Priority
Months Vacant (0-42)	-0.002 [0.005]	-0.007 [0.006]	-0.005 [0.006]	-0.014 [0.004]*	-0.012 [0.005]	-0.010 [0.006]
Leadership Transitions (0-4)		-0.035 [0.049]	-0.109 [0.048]**		0.365 [0.076]**	0.458 [0.071]**
EOP (0,1)		-0.224 [0.117]*	-0.257 [0.147]			
Office of the Secretary (0,1)		-0.419 [0.184]**	-0.567 [0.251]**			
Workforce Skill -- Obama Administration			0.239 [0.138]			0.249 [0.055]**
Employees (1000s)			0.001 [0.001]*			-0.001 [0.002]
%Democratic Respondents			-0.373 [0.408]			-0.701 [0.365]
%Appointee Respondents			-0.073 [0.863]			1.549 [0.645]
Independent Commission (0,1)					-0.209 [0.047]**	-0.212 [0.095]
Constant	3.900 [0.108]**	4.109 [0.149]**	4.421 [0.232]**	4.267 [0.072]**	4.006 [0.101]**	4.338 [0.383]**
R ²	0.00	0.09	0.47	0.14	0.39	0.73
N	50	50	37	26	26	24

Note: * p<0.1; ** p<0.05. Data: Survey on the Future of Government Service, 2020. Dependent variable: “How would you rate the overall performance of [your agency] in carrying out its mission?” (1-5). Models estimated on subsets by whether department-level unit implements a policy mentioned in President Trump’s 2016 *Contract with the American Voter*. Models estimated with Ordinary Least Squares and standard errors are clustered by department.