

When Vacancies Matter for U.S. Federal Agency Performance¹

In this paper we evaluate the relationship between vacancies in Senate confirmed positions (PAS) and U.S. federal agency performance. We build on existing work which focuses on average vacancy effects to evaluate *when* and *where* vacancies matter for performance. We explore this relationship using innovative new measures of agency performance that are comparable across agencies and that avoid the limitations of many existing measures. We find a robust correlation between vacancies in Senate-confirmed positions and lower expert evaluations of agency performance. There is suggestive, but not conclusive, evidence that this effect is largest for agencies directly led by Senate confirmed appointees. We also find suggestive evidence that vacancies are more pernicious in the most politicized agencies and agencies that experienced long vacancies during the Obama Administration. The marginal effect of a vacancy on agency performance is greatest early in a vacancy and diminishes over time. We conclude with a discussion of how the increasing dysfunction in the appointment process is influencing federal government performance on key tasks.

May 26, 2022

Words: 9,710

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¹ Paper prepared for the 2022 Public Management Research Conference, Phoenix, AZ, May 25-28, 2022. We thank the Princeton Survey Research Center for their work fielding this survey. We are grateful to the Partnership for Public Service for their advice and help in designing, supporting, and executing this survey. George Krause and Jennifer Selin provided helpful comments. A seminar audience at the University of Indiana provided a number of helpful suggestions that helped shape many of the ideas for this paper. The errors that remain are our own.

After sixteen months in office, President Biden had successfully filled 350 out of 799 key executive branch policymaking positions.² Prominent media outlets decried the slow pace of presidential nominations and Senate confirmations, with the *New York Times* asking, “Why are so many government positions still vacant?” and the *Washington Post* noting “A Senseless Logjam is Holding Up Nominations” (Bernstein 2022; Risen 2021). Outside observers raised concerns about how vacancies would create leadership gaps, implementation problems and poor agency performance (see, e.g., O’Connell 2021; Stier 2021). Others worried that the slow pace of appointments had adversely affected U.S. policy in areas as diverse as the conflict in Ukraine, the rollout of the infrastructure agenda, and economic policy (see, e.g., Gramer 2022; Hussein et al. 2022).

President Biden’s pace was by no means an outlier. He was on par with his predecessors (Pager et al. 2021; Stier 2021; Tenpas 2021). Vacancies across the executive branch regularly afflict presidential administrations, particularly at the start of a new administration (O’Connell 2009; Pfiffner 1996). The Biden Administration’s struggles and concern for their consequences raises the more general question of how vacancies influence federal agency performance. This is an important question beyond the Biden Administration since vacancies are a regular feature of modern administration and the stakes for performance can be quite high if they systematically influence performance and policy.

Evaluating the impact of vacancies on performance has been difficult because appropriate measures of performance are elusive and the effect of vacancies probably varies across contexts. Unlike private sector organizations, there is no profit equivalent that provides a shorthand way of comparing performance (Wilson 1989). This makes assessing the performance of agencies as

² Partnership for Public Service, Political Appointee Tracker, May 6, 2022 (<https://ourpublicservice.org/performance-measures/political-appointee-tracker/>).

different as the Environmental Protection Agency and the State Department challenging. In addition, not all vacancies have an equal impact. Vacancies appear in different positions in the hierarchy. For example, a vacancy in cabinet secretary position may matter differently than a vacancy in a bureau chief position. Presidents also attempt to mitigate the effect of vacancies by focusing on teams rather than individuals (Lewis 2011). They select acting officials carefully and staff agencies with other non-Senate confirmed appointees (Kinane 2021; Kumar 2021; O'Connell 2009; Piper 2021). Presidents may also prioritize some agencies over others, in recognition of the fact that some agencies are used to operating with regular vacancies. If this is the case, some agencies may be able to bear vacancies without consequences for performance.

In this paper we evaluate the relationship between vacancies in Senate confirmed positions (PAS) and federal agency performance using new measures of performance based upon expert evaluations. The measures overcome many of the limitations in existing measures because they are not self-reports, do not rely on proxy measures, are comparable across agencies, and relate to the core missions of federal agencies. We build on existing work which focuses on *average* vacancy effects to evaluate *when* and *where* vacancies matter for performance. We evaluate the claim that there are circumstances where vacancies are damaging for performance and contexts they are not (or, perhaps even helpful). We find a robust correlation between vacancies in Senate-confirmed positions and lower evaluations of agency performance by federal executives familiar with agency activities. There is suggestive, but not conclusive, evidence that this effect is largest for agencies directly led by Senate confirmed appointees (many agencies are not). We also find suggestive evidence that vacancies are more pernicious in the most politicized agencies and agencies that regularly experience vacancies. Within agencies, the marginal effect of a vacancy diminishes over time. We conclude with a discussion of how the increasing dysfunction in the appointment process is influencing federal government performance on key tasks.

Studying the Effect of Vacancies on Performance

Scholars have long been interested in the relationship between appointed leadership and federal agency performance (see, e.g., MacMahon and Millett 1939, Stanley, Mann, and Doig 1967). While some scholars focused on the differences in backgrounds between appointed leaders and career professionals (Aberbach and Rockman 2000; Cohen 1998; Krause and O’Connell 2016), others focused on the systematic effects of filling leadership positions with appointees rather than permanent career professionals (see, e.g., Hecl 1977; Krause et al. 2006; Light 1995; Richardson 2019). They argued that positions filled by appointees experience systematically higher turnover rates and longer vacancies than positions designated to be filled by career professionals (Lewis 2008; Suleiman 2003). These vacancies make it more difficult to engage in long-term planning, generate lower morale, and reduce the incentives of outside stakeholders to invest time and resources in the agency (Lewis and Piper 2022; O’Connell 2009, 2020).

Efforts to evaluate these claims have been hindered by the difficulty of measuring performance across contexts. The outputs and outcomes of federal agencies are difficult to observe and compare (Wilson 1989). Some scholars have made progress by examining self-reported performance but such efforts raise concerns about the connection between self-reports and actual performance (Meier et al. 2015; see, however, Piper and Lewis 2022). Others have focused on proxies for good performance such as concepts measured in surveys of federal employees like the Federal Employee Viewpoint Survey. These surveys ask about practices we associate with good management (e.g., communication, resources, accountability). These measures have the virtue of being comparable across agencies but it is unclear how well such measures tap underlying concepts and how closely such concepts relate to performance (Fernandez et al. 2015). It is also not clear what organization respondents are evaluating when asked about their agency or organization

(Thompson and Siciliano 2021).³ Scholars have employed other creative measures of performance but these are often limited to one type of organization such as law enforcement or schools (see, e.g., Boylan 2004; Meier and O’Toole 2002; Rutherford 2016) or one type of task that may not be part of an agency’s core mission such as budget forecasting, limiting payment errors, or responding to FOIA requests (Krause and Douglas 2006; Wood and Lewis 2017; Park n.d.). It is not clear whether results in such studies are applicable across agencies to the performance of core agency missions.

Beyond these difficulties measuring performance, there are good theoretical reasons to expect the vacancies to have differential impacts in different contexts. It is important to recognize that some similarly situated agencies experience appointed leadership and vacancies in different ways because some agencies are more politicized than others (Lewis 2008). For example, in the Department of the Interior the Assistant Secretary of Land and Minerals Management oversees four bureaus: the Bureau of Land Management, the Office of Surface Mining Reclamation and Enforcement, the Bureau of Ocean Energy Management, and the Bureau of Safety and Environmental Enforcement (Figure 1). The Assistant Secretary is a PAS position. In addition, two of the bureaus below the Assistant Secretary are also headed by PAS appointees (i.e., Bureau of Land Management, the Office of Surface Mining Reclamation and Enforcement). The two remaining bureaus, however, are headed by executives from the Senior Executive Service. A vacancy in a Senate-confirmed position can affect the leadership of the Bureau of Land Management directly since the head of that bureau requires Senate confirmation. For an agency like the Bureau of Ocean Energy Management, however, agency leaders do not require Senate confirmation and departing leaders can be replaced easily. The primary way a PAS vacancy will affect the Bureau of Ocean Energy Management is a vacancy in the Assistant Secretary position. In other words, there may be a

³ Recent surveys also report too little information on agencies. For example, the 2020 Federal Employee Viewpoint Survey includes details primarily at the department level, making it impossible to compare new results to early data on key agency sub-components.

vacancy crisis in government, but its effects are likely to be different depending upon how directly the agency is connected to positions that can lie vacant for long periods. Some agencies are directly affected and others can continue on without comparable disruption.

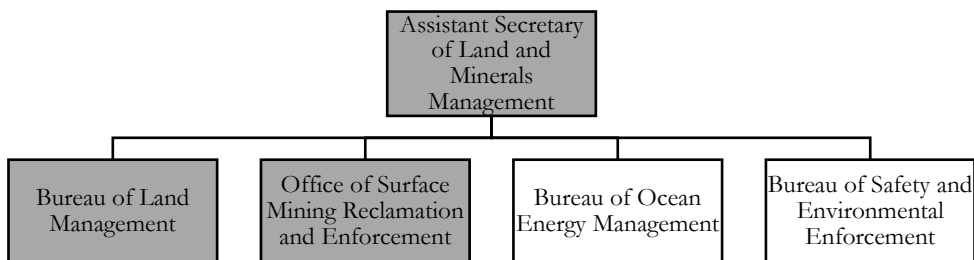


Figure 1. Differential Effect of Vacancy Crisis on Agency Performance: An Illustration. Gray boxes indicate offices or agencies headed by political appointees requiring Senate confirmation.

Further, existing research rarely accounts for the management environment of the office in which the vacancy occurs or who in the agency’s leadership takes on a larger role during vacant periods. These shortcomings are representative of a larger trend in the literature to neglect lower-level appointees and acting officials that step into vacant PAS positions (Lewis and Waterman 2013; Moore 2018; Kinane 2019, 2021; Waterman and Ouyang 2020; Piper 2021, 2022b). As Lewis and Waterman argue, the literature’s “primary focus on PAS appointments ... may provide a distorted picture of presidential appointment politics...” (2013, 37). Therefore, if we are to understand the effects of vacancies more fully, we must take these broader contexts into account. Indeed, the Presidential Personnel Office often thinks about staffing agencies in terms of teams, rather than individuals filling individual slots (Lewis 2011). These teams include acting officials selected by the president (Brannon 2020; Kinane 2021; Piper 2021). These acting officials are either the default—a deputy in the job below the vacancy—or 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). The effect of vacancies will depend upon the composition of the remaining team in an agency.

In addition, some agencies regularly experience vacancies while for others it is a new phenomenon. For example, law enforcement agencies like the Bureau of Alcohol, Tobacco, Firearms, and Explosives and the Drug Enforcement Administration have lacked Senate-confirmed leaders for much of the last decade. The effect of vacancies in these agencies may be different than in agencies where vacancies are less frequent. If a vacancy is perceived as normal, agencies may overcome their reluctance to wait for an appointee and go ahead and do long-term planning and work tackling the hard problems in the agency. Over time, agencies may assume that normal is a depoliticized agency environment and move forward.

When Do Vacancies in Senate Confirmed Positions Matter?

The evidence thus far tends to suggest that vacancies in Senate confirmed positions are bad for performance (see, e.g., Hecl 1977; O’Connell 2009, 2020; Piper and Lewis 2022). However, most efforts to generalize about the effect of vacancies are based upon *average* comparisons of agencies during periods when there are vacancies to periods when agencies are run by Senate confirmed appointees. This obscures a lot of variation. 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). There is a substantial scholarly literature describing the management advantages that career professionals have over appointees (see, e.g., Cohen 1998; Kaufman 1965; National Commission on the Public Service 1989, 2003). So, even though the career official serves in a temporary capacity (i.e., like a substitute teacher), this may be an improvement over a permanent appointed official. Efforts to evaluate the impact of vacancies on performance will be improved if we evaluate the vacancy relative to the performance of the agency under their average political appointee.

Hierarchical Context

More generally, a vacancy in a Senate-confirmed leadership position may have different effects in different contexts. Looking at the organization chart in Figure 1, we can imagine three important contextual factors that should shape the influence of a vacancy in any specific position. The first thing to notice in Figure 1 is that Senate-confirmed appointees penetrate more deeply into the hierarchy of some agencies than others. Senate-confirmed appointees run the Bureau of Land Management and the Office of Surface Mining Reclamation and Enforcement but not the other two bureaus. For the first two bureaus, the most proximate PAS appointee is their own agency head. For the others, the most proximate appointee is the Assistant Secretary. This raises the possibility that the effect of vacancies will depend on where the vacancy occurs in the agency's hierarchy and how proximate it is to the agency. For the first two bureaus, a vacancy in a PAS position has a direct effect on agency planning and activities. Agencies with direct PAS leaders naturally wait to make key decisions in the presence of a vacancy, including those related to long-term planning (Michaels 1997; O'Connell 2020; Piper and Lewis 2022). Persistent vacancies can also make it hard for political leaders to monitor agencies and temporary officials have a harder time credibly committing to providing rewards and sanctions that motivate the workforce (Mendelson 2014; O'Connell 2008, 2020; Partnership for Public Service 2018). Career professionals are naturally cautious about embracing new initiatives while waiting for a new appointed leader since the new leader could direct a change in course (McCarty 2004; Mendelson 2014; Piper and Lewis 2022). Outside stakeholders also often take a wait and see attitude with agencies until a new leader is selected.

H1: Vacancies will lead to lower performance in agencies headed by Senate-confirmed appointees.

For the latter two bureaus, however, their direct agency leadership is stable and their selected leader has the virtue of clear authority, indefinite tenure, experience in the agency, and long-standing relationships with key stakeholders (Kaufman 1981; Lewis 2007). If anything, vacancies in the closest Senate confirmed position can mean less aggressive involvement by political appointees in

their goal setting, task prioritization, and program implementation. Long-serving managers from the Senior Executive Service can more easily focus on the long term, managing their workforces, and building relationships with key stakeholders. The effect of vacancies should be importantly influenced by whether the agency itself is headed by a PAS appointee or whether the closest PAS appointee is a level up, as in the case of the bureaus within the Department of the Interior. Indeed, in agencies like the Bureau of Ocean Energy Management, a vacancy in the Assistant Secretary position may provide them more stability and consistency in ways that enhance performance.

H2: The effect of vacancies on performance will be less in agencies not headed by Senate-confirmed appointees.

Team Context

Vacancies in individual leadership positions can have a dramatic impact on performance but this effect can be moderated by two factors: the composition of the leadership team in the agency and the occupant (s) of the office during the vacancy. Appointees are part of a team, with other Senate confirmed, non-Senate confirmed appointees, and career professionals working with them. In some agencies, the PAS head is only one of many appointees in the leadership team. This can include other Senate confirmed officials, but more commonly it includes political appointees in the Senior Executive Service, and other political staff (i.e., Schedule C appointees). For example, in 2020 there were four political appointees in the Bureau of Land Management when its PAS position was vacant. Two were non-career appointees in the Senior Executive Service and two were Schedule C appointees. In other agencies, the PAS appointee is the only appointee in the leadership team. The remainder are career professionals from within the agency. The composition of the remaining leadership team can influence performance. Are they political loyalists with less experience or are the career professionals used to managing in the agency? In agencies with a lot of loyalist political appointees, the effect of a vacancy could be worse if this means persons with less experience and less concern for the agency are empowered to make decisions. By contrast, in agencies whose

management team is comprised of experienced career professionals, the effect of a vacancy could be lessened.

H3: The effect of vacancies on performance will be less in agencies whose management team is comprised of fewer political appointees.

Most proximately, the president chooses who will lead an agency in the presence of a vacancy. The president may choose the default official, the principal deputy to the office with the vacancy, or the president may choose another official from within the agency. This includes other PAS appointees or another appointed or career senior “officer or employee” within the agency. As with the composition of the entire management team, the effect of vacancies depends upon who runs the agency in the presence of a vacancy. Is it a career deputy or another, perhaps less experienced, political appointee chosen by the president? And, in some agencies a vacancy in a Senate confirmed positions means the job is vacant. In commissions, the position of chair sits vacant and agencies operate or do not operate without one. In other positions, the authority of a position must be delegated to a lower level official in the agency. The effect of the vacancy will depend upon the performance of the temporary acting official.

H4: The effect of vacancies on performance will be moderated by whether the acting official is an appointee or a career professional.

Historical Context

An underappreciated feature of the United States executive branch is how many PAS positions there are and how many are vacant for long periods of time. In 2021, there were 1,322 PAS positions.⁴ Of these 1,189 were available for President Biden to fill. President Biden sent nominees to the Senate for only 46% of these positions in his first year, an improvement over the 39.5% sent by President Trump. Interestingly, across the last four presidencies the positions

⁴ This number differs from the number at the start of the manuscript because the Partnership for Public Service and the *Washington Post* track only what they define as *key* positions.

neglected by presidents are often the same positions. For example, the following positions were among the 40 positions neglected by at least 3 out of the last 4 presidents: Assistant Secretary for Postsecondary Education, Director of the Institute of Education Sciences, Under Secretary for Benefits (VA), Assistant Secretary for Energy (Nuclear Energy), Archivist of the United States. If we expanded our search to include positions to which presidents had made nominations but had failed to secure confirmation, the number would be much larger.

The fact that presidents from both parties and the Senate regularly neglect appointments to key executive branch positions suggests that some agencies are used to operating without a confirmed leader. Other agencies are regularly prioritized, receiving a confirmed leader within the first few months of any new administration. Those agencies that regularly experience vacancies may be better able to operate since a vacancy is the new normal in an agency. Other agencies, however, operating with an unexpectedly long vacancy may be particularly slow to plan, slow to make decisions, and may experience a more dramatic decline in morale and outside support. Relatedly, the effect of vacancies on performance may not be linear. The effects of a vacancy of 36 months or 37 months may matter less than an additional vacancy between 6 months and 7 months.

H5: The effect of vacancies on performance will be moderated by whether the vacancy length is longer than normal for an agency.

H6: The effect of vacancies on performance will be diminishing in vacancy length.

Data, Variables, and Methods

To evaluate the relationship between vacancies in PAS positions and performance, both directly and as moderated by different organizational contexts (i.e., vertical, horizontal, and longitudinal), we introduce a new measure of federal agency performance. We begin by regressing this new measure of agency performance on data on vacancy lengths in order to replicate existing work with this new measure. We then estimate models with different interaction terms to determine whether the effect of vacancies changes with different features of organizational context.

Measuring Federal Agency Performance

In 2020, in collaboration with the Partnership for Public Service and academic colleagues, we fielded the *Survey on the Future of Government Service*. This survey targeted all political appointees and senior career managers running agencies, offices, and programs in the executive branch. The response rate for the survey was 9.1% (1,485 completed surveys out of 16,232) and the participation rate (i.e., the percentage that completed at least part of the survey) was 11.5% (1,861 complete or partial surveys out of 16,232), comparable to most public opinion telephone surveys (AAPOR 2017).

Federal executives working at the highest level of the executive establishment are uniquely situated to observe agency performance, perhaps better than any other population. We leverage this expertise to develop new expert-based measures of agency performance. To narrowly target the expertise of different federal executives, we asked respondents to identify the agencies they worked with the most. Specifically, the survey asked: “Please select the three agencies you have worked with the most in order of how often you work with them.” Each respondent was provided three dropdown menus from which to select agencies, excluding their own.⁵ The menus included more than 200 agencies organized into 1) the Executive Office of the President, 2) the executive departments and their large sub-components, and 3) independent agencies. So, for example, a respondent might scroll past agencies in the Executive Office of the President and see the Department of Agriculture with 13 options, including “Department of Agriculture (All)” and key

⁵ To make sure respondents only evaluate other agencies we need reliable information on their own workplace. We pursued to tacks to identify workplaces. First, we asked respondents to identify their workplace from a dropdown menu that included more than 200 agencies organized by large categories, key sub-components, and catch-all categories. So, for example, a respondent would see in the dropdown menu the Executive Office of the President followed by units like the Council of Economic Advisers, the Office of Management and Budget, but also a catch-all “Other (EOP)”. If the respondent went further, they might see the Department of Agriculture with 16 options, including the Office of the Secretary, key bureaus, and “Other (USDA)” as options. Second, we have information on where people work from the *Federal Yellow Book* which is the source we used to identify and contact our sample.

bureaus inside the USDA such as the Forest Service or Natural Resources Conservation Service.⁶

They could scroll past other departments and their sub-components and get to a list of independent agencies.

Later in the survey, after asking federal executives about the performance of their own agencies, we then asked them to evaluate the performance of the agencies they had mentioned at the start of the survey, plus two others. So, for example, an executive 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 evaluate these three agencies and two other agencies they were likely to be familiar with (e.g., other bureaus in the USDA).⁷ Specifically, they were asked, “How would you rate the overall performance of the following agencies in carrying out their missions?” and given options from 1-Not at all effective to 5-Very effective. They were also provided a Don’t know option. Each respondent rated up to 5 agencies, providing thousands of ratings of different agencies.

We use these ratings to generate numerical estimates of agency performance, adjusting for differences in the ability of federal executives to rate performance and differences in the way that

⁶ This was the pattern for all the departments. Independent agencies, including those in the Executive Office of the President were listed separately and no sub-components of these other agencies as included.

⁷ Respondents were provided 5 agencies to rate. The list of agencies was populated in the following steps:

1. Agencies the respondent selected as one of the three agencies they work with most (up to 3)
2. If the respondent worked in an executive department or the Executive Office of the President, two randomly selected bureaus from the same department or EOP that were not selected by Step 1. If there were fewer than two bureaus remaining after eliminating bureaus from Step 1, then all remaining bureaus were selected. (The Federal Energy Regulatory Commission was treated as bureau of the Department of Energy and the U.S. Agency for International Development was treated as a bureau of the Department of State.)
3. Remaining slots were filled by randomly selected executive departments and independent agencies not selected in Step 1.

The Java code used to populate the list of agencies would not run if the respondent was using Internet Explorer.

Therefore, the following process was used to populate the list of agencies for these respondents:

1. Agencies the respondent selected as one of the three agencies they worked with most (up to 3)
2. Office of Management and Budget (if not selected in Step 1)
3. Office of Personnel Management (if not selected in Step 1)

These respondents would be offered fewer than 5 agencies to evaluate if they provided fewer than 3 agencies they work with or selected the Office of management and Budget or Office of Personnel Management as an agency they worked with.

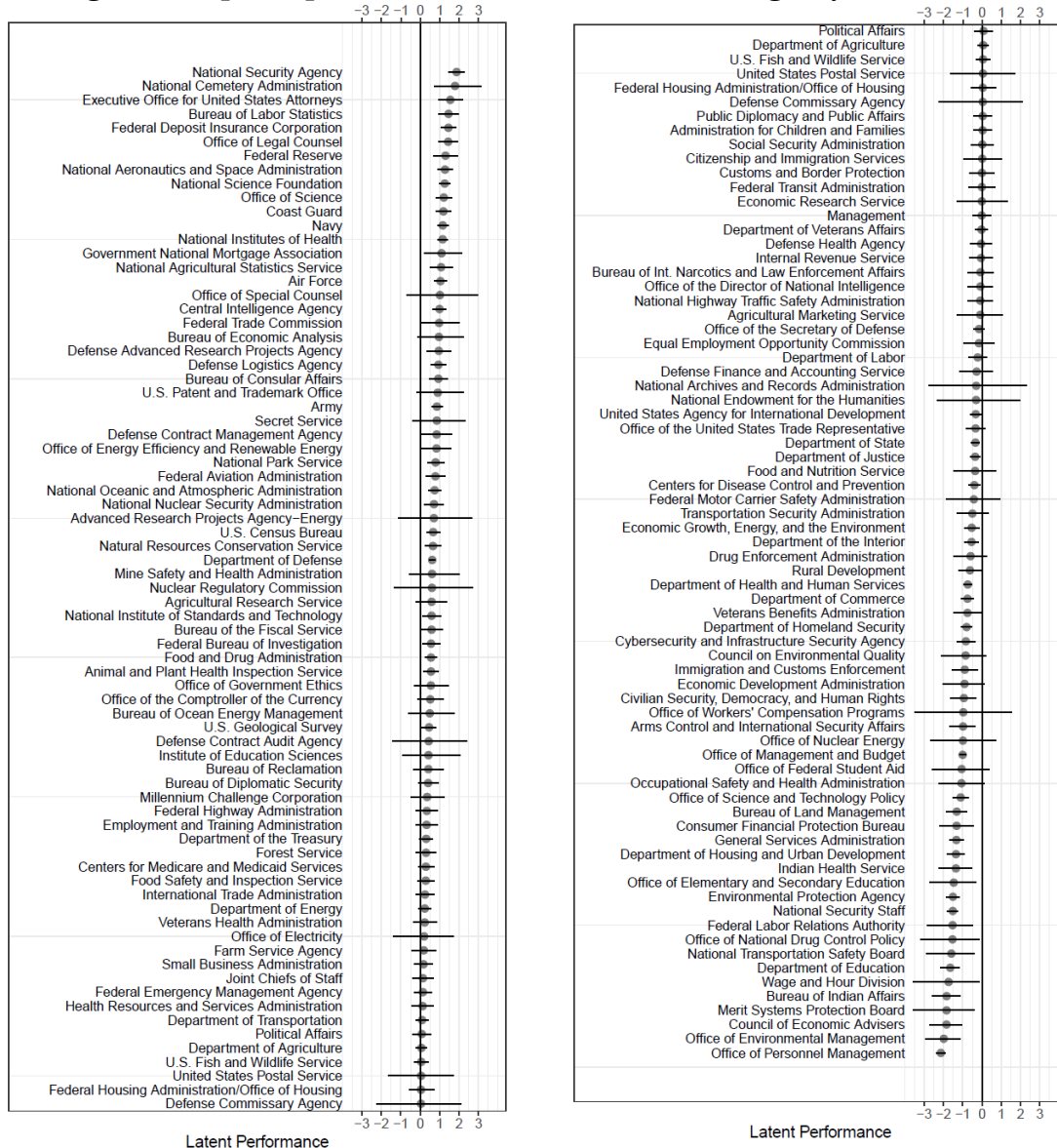
federal executives use the 1 to 5 scale. Indeed, some federal executives may not perceive performance clearly but rate agencies anyway. Others may be harder or easier graders (e.g., what level of performance is necessary to be rated a 1, 2, 3, 4 or 5?). We restrict the data to those agencies with at least 5 performance ratings and raters who evaluated at least 2 agencies, resulting in 142 agencies, 1,239 raters, and 4,310 ratings.

We use these ratings to estimate agency performance using a Bayesian multi-rater item response model. We leave most of the details for Appendix A but note that we use informed priors on latent performance to give additional weight to those respondents that reported knowing something about the agency being evaluated (as compared that evaluated an agency selected at random).

In Figure 1 we include the resulting numerical estimates of federal agency performance (Mean 0.15; SD 0.89; Min -2.42; Max 1.73). The dots represent the estimates and the bars represent the degree of uncertainty about the estimate. The uncertainty can derive from there being few ratings or because there is disagreement among the raters, or both. Among the highest performing agencies, according to federal executives, are the National Security Agency, the National Cemetery Administration (VA), and the Office of U.S. Attorneys. The top-10 also includes several technical, science, and military agencies. Among the lowest performing agencies are the Merit Systems Protection Board, the Council of Economic Advisers, the Office of Environmental Management, and the Office of Personnel Management. Among the low performers are an agency that operated without a quorum for most of the Trump Administration (MSPB), a part of the Executive Office of the President whose chair was vacant for a significant part of the Trump Presidency (CEA), the agency responsible for environmental cleanup in the nation's nuclear weapons agency whose PAS position was vacant at the time of the survey (OEM), and agency that has had 9 PAS heads since

2015 (OPM). There is at least *prima facie* evidence that there is a relationship between PAS vacancies and federal agency performance.

Figure 2. Expert Opinion Estimates of 2020 Federal Agency Performance



Note: Numerical estimates of federal agency performance based upon 4,310 ratings by 1,239 federal executives in response to the question: “How would you rate the overall performance of the following agencies in carrying out their missions?” and given options from 1-Not at all effective to 5-Very effective. Federal executives were also provided a Don’t know option. Ratings were estimated using a Bayesian multi-rater item response model with informed priors (based upon those with specific expertise about an agency).

To further validate these measures, we compare them to three other contemporaneous evaluations of agency health and performance (Figure 2). First, we compare the performance ratings to 2020 agency average self-reported performance. The survey asked respondents, “How would you

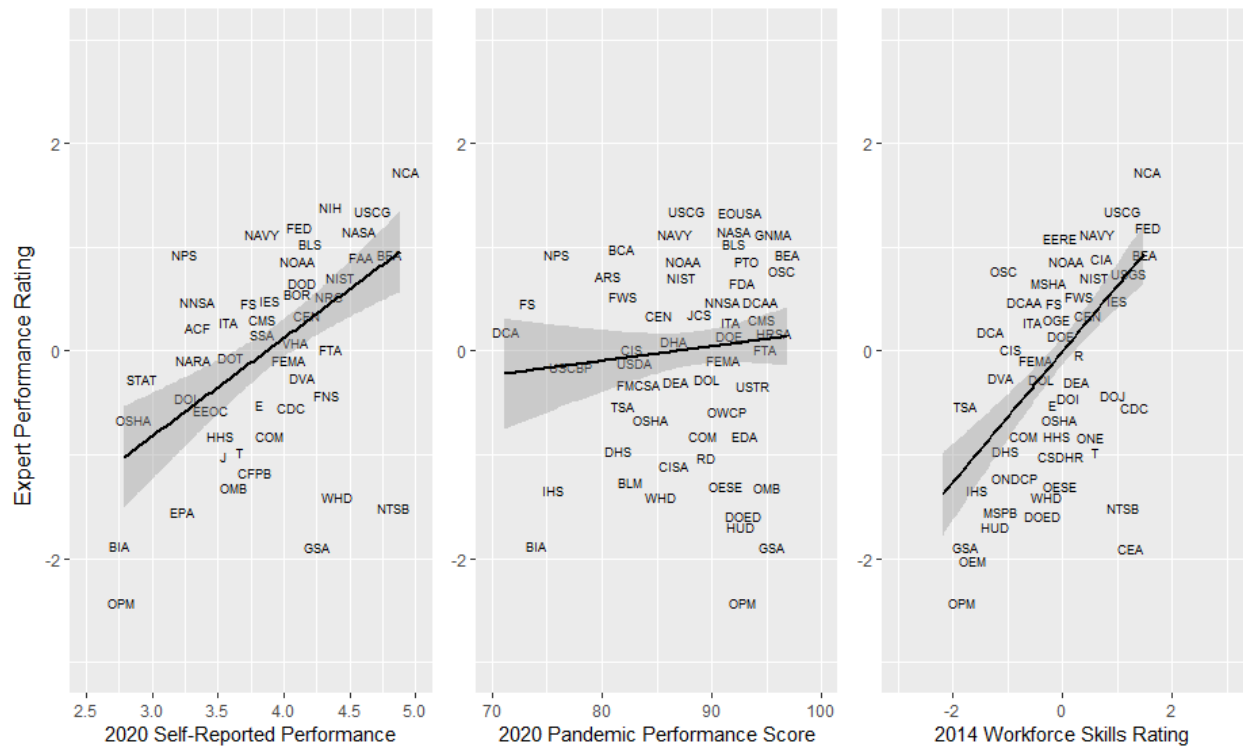
rate the overall performance of [your agency] in carrying out its mission?” The question asks federal executives to evaluate how well their agencies are doing by name (i.e., [your agency] is replaced with the actual name of the respondent’s workplace). Limiting our sample to those agencies with at least 5 respondents leaves us with 91 agencies. Second, we correlate the new measure with COVID performance as evaluated by the Partnership for Public Service. In 2020, the Partnership for Public Service produced scores for agency COVID performance.⁸ 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.
- 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. Finally, we compare estimates of performance to estimates of workforce skill at the end of the Obama Administration. Specifically, respondents in our 2014 survey 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 8 agencies, providing thousands of ratings of different agencies. Richardson et al. (2018) used these ratings to develop numerical estimates of workforce skill. We correlate these estimates of workforce skill at the start of the Trump Administration with these new measures of performance.

⁸ 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&).

Figure 3. Comparison of Expert Estimates of Agency Performance vs. 2020 Self-reported Performance, 2020 Best Places to Work Pandemic Performance Scores, and 2020 Workforce Skills Ratings



Note: y-axis is numerical estimate of agency performance based upon executive responses to the question: “How would you rate the overall performance of the following agencies in carrying out their missions?” and given options from 1-Not at all effective to 5-Very effective. Federal executives were also provided a Don’t know option. The x-axis of three graphs are 1) 2020 average responses to question: “How would you rate the overall performance of [your agency] in carrying out its mission?”; 2) a 2020 pandemic performance score from Partnership for Public Service; and 3) a numerical estimate of workforce skill based upon 2014 federal executive responses to question: “In your view, how skilled are the workforces of the following agencies?” (Richardson et al. 2018). Fitted lines for self-reports estimated based upon all agencies with at least 5 respondents in the survey. Some agency acronyms are excluded from the figure to limit overlap among acronyms.

The new expert performance ratings are positively correlated with all three measures, though strongest with federal executive self-reports and previous expert ratings for workforce skill.

Generally, when executives rated their own agencies poorly, outsiders agreed. When federal executives rated their agencies well, so did outsiders. While there are some outliers where agencies rated themselves as performing well but experts did not (e.g., NTSB, WHD) and vice versa, the strong correlation suggests that people inside and outside agencies are observing the same performance (corr 0.51). Reassuringly, expert evaluations of the quality of the workforce before the start of the Trump Administration are also correlated positively with 2020 performance (corr 0.54).

The correlation between overall agency evaluations of COVID responses are also positively correlated with overall performance, but only weakly so (0.09). This is not entirely surprising since we survey executives and the Partnership's score is based upon surveys of the entire workforce. We also focus on performance on an agency's core mission and the Partnership is focused on COVID performance.

Appointee Vacancies

To connect survey responses to vacancies, we collected data on vacancies in the Trump Administration. We used the 2016 congressional publication *Policy and Supporting Positions* (i.e., Plum Book) to identify the closest PAS appointee to every agency. We systematically tracked the occupants of each position (including acting officials) from January 20, 2017 until the soft launch of the survey on June 22, 2020. We counted the number of days the position lacked a Senate-confirmed head. For simplicity, we divided the number of days by 30 to report vacancy length in months. For commissions, we focused on length of time the chair position was vacant. Out of a maximum of 42 months, the average position was vacant 18 months (SD 13.24), confirming the regularity with which agencies experience vacancies in leadership positions. The raw correlation between vacancies and performance is -0.08, suggesting a modest negative effect on performance.

One immediate concern is that poor performance might *cause* vacancies rather than be caused by vacancies. For example, President Trump might have been more inclined to remove PAS heads in agencies that are struggling. To evaluate this possibility, we regress Trump Administration vacancies on Obama Administration workforce skills ratings and other covariates to see whether Trump Administration vacancies are caused by poor performance during the Obama

Administration. We cannot reject the null that struggling agencies during the Obama Administration were no more likely to experience vacancies in the Trump Administration.⁹

Moderators

For some positions, like the two bureaus in the Department of the Interior without a PAS head, the closest PAS appointee is the same position. Among the agencies in our dataset, a PAS appointee *directly* led 111 (78%) and a member of the Senior Executive Service or a career professional led the remaining 32 agencies. Agencies led by PAS appointees directly experienced fewer vacant months on average (17 vs. 22) and their average performance rating was slightly worse (-0.06 vs. 0.17). This politicization may be harmful for performance since agencies led by appointees are rated lower performers on average. In model specifications below we interact the number of vacant months with the position of the PAS position in the hierarchy to evaluate whether vacancies at different levels have different effects.

We also hypothesized that the effect of vacancies might be moderated by the percentage of managers in an agency that were political appointees. We counted the number of policy and supporting supervisor positions and the number of PAS, non-Career SES, and Schedule C appointees in the agency from the 2020 editions of the *Plum Book*. We expect that the effect of vacancies on agency performance will be less when there is a smaller percentage of supervisors made up of political appointees.

Additionally, we hypothesized the presence of politically appointed acting officials during vacancies may moderate the effect of vacancies on performance. We tracked the occupant of each PAS position of interest using fifteen quarters of the *Federal Yellow Book* from the president's inauguration to the survey's administration. The *Federal Yellow Book* is a quarterly directory of

⁹ We note, however, that coefficient is negative, suggesting that higher performing agencies *are* less likely to experience vacancies.

executive officials, akin to a telephone book. To categorize acting officials, we looked up the employment history of each individual on *Leadership Connect*, the online edition of the *Yellow Book*, LinkedIn, or an online source, typically their biography page from the agency they served in or a news article. Individuals that were in a politically appointed positions immediately prior to their service as acting were categorized as “political actings.” We expect that when vacancies are filled by non-appointed, careerist acting officials, the effect of vacancies will be lessened.

The final contextual factor that might influence the effect of a vacancy is whether vacancies are normalized in the agency. To evaluate this possibility, we collected data on vacancies in the Obama Administration. We supplemented data collected by Resh et al. (2021) with information on confirmation dates from Senate.gov and exit dates from agency websites and other external sources (e.g., news sources, Leadership Connect). Additionally, we include a measure of squared vacancy length to assess whether the effect of vacancies diminished over time within the Trump administration.

Controls

There are number of agency characteristics that might be correlated with both vacancy length and agency performance. We include controls for a number of pre-treatment covariates, including agency structure, whether the agency implements a policy that President Trump mentioned during the campaign, agency workforce skills, employment and agency ideology. We include controls for whether respondents work in an agency in the Executive Office of the President (0.05), the Office of the Secretary (0.11), or in an independent commission (0.08). 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. Since the president’s

decisions about whether to fill vacancies and support the agency more generally in ways that could influence performance, we include indicators for whether the department (0,1; 0.65) implemented a policy that was a priority of the president during the 2016 election.¹⁰ We include the 2014 workforce skills rating mentioned above as a measure of the health of the agency at the end of the Obama Administration. Finally, since the persistence of vacancies and presidential attention might be influenced by the ideological contours of what agencies do, we include controls for agency ideology measured prior to the start of the Trump Administration (Richardson et al. 2018). Richardson et al. asked federal executives during the Obama Administration about the ideological leanings of agencies they work with, and 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.¹¹

Methods

To evaluate the relationship between vacancies and performance, we estimate a series of models of with OLS. For each hypothesized relationship, we estimate models on the complete set of agencies and the subset of agencies directly led by an appointee. We cluster the standard errors to account for the fact that different agencies are not completely independent since many are subcomponents of larger departments. Specifically, we have 17 clusters, one for each executive department, one for the EOP, and one for independent agencies.

Results

We include in the initial set of model estimates in Table 1. To begin, there are a number of interesting results among the controls. First, the model estimates reveal that agencies in the EOP,

¹⁰ 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 X.

¹¹ Continuous control variables were scaled so that a one unit increase represents a one standard deviation increase from the mean value of the variable.

whole cabinet departments (i.e., when rated as a whole), and independent commissions had lower performance ratings than other agencies. Agencies in President Trump's EOP were estimated to have a full point lower performance than bureaus in executive departments or independent administrations (i.e., the base category). Full executive departments, when evaluated, were rated about 0.60 lower than other agencies and independent commissions, about 0.30. In addition, agencies that were responsible for implementing policies the president mentioned during the campaign were estimated to have lower performance, about half a standard deviation lower than agencies avoiding the president's attention (-0.40). Third, agencies evaluated to have skilled workforces at the end of the Obama Administration were rated to have higher performance. A standard deviation increase in workforce skill rating (0.76) is estimated to increase performance by 0.35. Finally, more conservative agencies are estimated to perform slightly better than other agencies, perhaps reflecting increased presidential and congressional attention during the Trump Administration. Among the more visible conservative agencies are the Departments of Defense, Homeland Security, and Veterans Affairs.

The models also reveal some key initial results. First, the coefficient estimate for the direct effect of the number of vacant months is negative and statistically significant. The result is strongest when subsetting to cases where the agency is led by a political appointee (Model 2). These results indicate that experts rate agency performance more poorly where PAS positions are vacant for long periods. To contextualize the effect, it is useful to evaluate the effect in terms of real vacancy times. For every 12 months a PAS head position is vacant, the agency's average performance decreases by between 0.11 and 0.16 on a scale of -2.42 to 1.73. If the position stays vacant for 24 months or about half the president's term (i.e., about 33% of the data), the estimated effect is between 0.22 and 0.32, or about one third of a standard deviation increase. Finally, if the position is vacant for the duration of the Trump administration (i.e., about 13% of the data), their estimated performance is

about 0.38 and 0.55 lower than other agencies. These agencies are estimated to have about a standard deviation lower average expert-rated performance. This is important evidence, using new performance measures that vacancies are correlated with lower federal agency performance.

Table 1: OLS Models of Agency Performance Accounting for Vacancies and Agency Head Type

	Direct Effect	Direct Effect (Direct Subset)	Direct PAS
Vacant Months	-0.009* (0.005)	-0.013** (0.006)	-0.001 (0.009)
Direct PAS	-0.078 (0.216)		0.152 (0.299)
Turnover	0.062 (0.040)	0.107** (0.042)	0.063 (0.040)
EOP	-1.030*** (0.130)	-0.983*** (0.121)	-1.007*** (0.127)
Cabinet	0.320*** (0.093)	0.352*** (0.098)	0.352*** (0.095)
Office of the Sec.	-0.596*** (0.158)	-0.654*** (0.171)	-0.647*** (0.154)
Ind. Com.	-0.309** (0.109)	-0.328** (0.116)	-0.298** (0.112)
Department Priority	-0.386* (0.203)	-0.407* (0.215)	-0.392* (0.198)
Workforce Skills	0.462*** (0.064)	0.491*** (0.063)	0.456*** (0.066)
Agency Ideology (L-C)	0.138* (0.076)	0.098 (0.093)	0.134 (0.079)
Vacant Months:DirectPAS			-0.011 (0.011)
Constant	0.311 (0.271)	0.212* (0.116)	0.111 (0.330)
R ²	0.489	0.508	0.492
N	126	101	126

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$

If we look just at the size of the coefficient estimates in Model 1 and Model 2, they suggest that the effect of a vacancy is greatest on agencies directly led by PAS appointees. The coefficient estimate on vacant months is larger in Model 2, the model estimated on agencies led directly by PAS appointees. To properly test whether the effect is indeed larger for such bureaus, however, we estimate a model with an interaction term (Model 3). The coefficient estimate on the interaction term is large and negative, suggesting that the effect of vacancies is notably larger (about 12x larger) in agencies led directly by appointees. The coefficient is imprecise, however, and we cannot reject the null hypothesis that there is no difference between the two types of agencies. Therefore, we have

only suggestive evidence that vacancies are more consequential when the vacancy involves the head of the agency, rather than the political appointee overseeing the agency.

Table 2. OLS Models of Agency Performance Accounting for Vacancies, Politicization, and Politically Appointed Actings

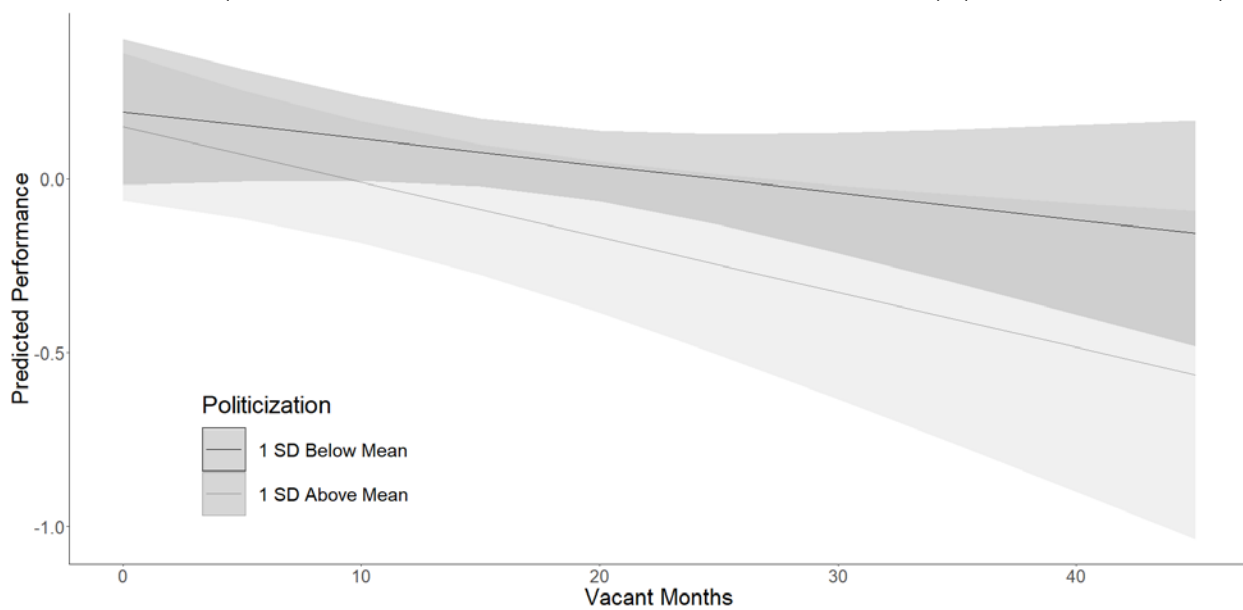
	Politicization	Politicization (Direct Subset)	App. Actings	App. Actings (Direct Subset)
Vacant Months	-0.006 (0.007)	-0.006 (0.010)	-0.007 (0.007)	-0.014 (0.009)
Direct PAS	0.028 (0.230)		-0.115 (0.218)	
Turnover	0.083* (0.042)	0.137*** (0.045)	0.078 (0.047)	0.096* (0.055)
EOP	-0.964*** (0.133)	-0.923*** (0.133)	-0.976*** (0.138)	-0.956*** (0.131)
Cabinet	0.282*** (0.085)	0.296*** (0.099)	0.379*** (0.096)	0.385*** (0.104)
Office of the Sec.	-0.624*** (0.143)	-0.648*** (0.170)	-0.555*** (0.145)	-0.618*** (0.171)
Ind. Com.	-0.309** (0.123)	-0.328** (0.145)	0.127 (0.177)	0.139 (0.237)
Department Priority	-0.408** (0.182)	-0.422** (0.198)	-0.513** (0.240)	-0.489* (0.266)
Workforce Skills	0.458*** (0.071)	0.489*** (0.078)	0.470*** (0.078)	0.494*** (0.086)
Agency Ideology (L-C)	0.150* (0.073)	0.108 (0.087)	0.139 (0.083)	0.091 (0.099)
% Leaders Appointed	-0.064 (0.221)	-0.024 (0.271)		
Vacant Months:% Leaders Appointed	-0.012 (0.012)	-0.014 (0.015)		
% Vacant Q's w/ App. Acting			-0.006 (0.157)	-0.004 (0.162)
Vacant Months:% Vacant Q's w/ App. Acting			-0.011 (0.015)	-0.002 (0.017)
Constant	0.293 (0.288)	0.237 (0.177)	0.419 (0.298)	0.300 (0.205)
R ²	0.483	0.507	0.513	0.523
N	119	97	113	89

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$

Next, we turn our attention to how the effect of vacancies depends on the horizontal team context (Table 2). We start by noting that the main effect of politicization is negative. More politicized leadership is estimated to reduce agency performance, although these effects are estimated imprecisely. Does this political context, moderate the effect of vacancies? Looking to the coefficients on the interaction term of vacant months and the percentage of leaders that were appointed in Models 1 and 2 of Table 2, we see that vacancies were more harmful to agencies with higher levels of politicization. However, the coefficient is not statistically significant. We illustrate

this graphically in Figure 4 which shows the estimated level of agency performance based on the length of vacancy in the PAS position. We include two lines, one for an agency with politicization at one standard deviation below the mean (shown in black) and one for an agency with politicization one standard deviation above the mean (shown in grey). More politicized agencies have lower performance in general (i.e., the line is lower) and the effects of vacancies in such agencies are greater (i.e., the slope is more steeply negative). This provides some suggestive evidence that the increased role of lower-level political appointees in agencies with vacancies may be harmful. These individuals that typically have less managerial experience and subject area expertise.

Figure 4. Estimated Impact of Vacancies on Agency Performance Conditional on Level of Politicization (One Standard Deviation Below and Above the Mean) (Model 1 of Table 2)



The placement of politically appointed acting officials has a similar effect. Vacancies are estimated to be more detrimental to agency performance the longer a *political* acting filled the vacancy. However, the model estimates are very imprecise and should be interpreted with caution.

Table 3. OLS Models of Agency Performance Accounting for Vacancies, Previous Vacancies, and the Diminishing Effect of Vacancies

	Prior Vacancies	Prior Vacancies (Direct Subset)	Diminish. Effects	Diminish. Effects (Direct Subset)
Vacant Months	-0.003 (0.007)	0.006 (0.009)	-0.034*** (0.011)	-0.039*** (0.012)
Direct PAS	-0.089 (0.221)		-0.092 (0.207)	
Turnover	0.048 (0.042)	0.091** (0.042)	0.086* (0.043)	0.133** (0.049)
EOP	-1.071*** (0.138)	-1.087*** (0.139)	-0.964*** (0.118)	-0.919*** (0.112)
Cabinet	0.278*** (0.080)	0.273*** (0.093)	0.337*** (0.078)	0.361*** (0.082)
Office of the Sec.	-0.443** (0.165)	-0.404* (0.218)	-0.705*** (0.153)	-0.758*** (0.170)
Ind. Com.	-0.185 (0.110)	-0.214 (0.128)	-0.313*** (0.105)	-0.337*** (0.113)
Department Priority	-0.356 (0.211)	-0.359 (0.247)	-0.388* (0.190)	-0.405* (0.202)
Workforce Skills	0.457*** (0.061)	0.490*** (0.066)	0.449*** (0.062)	0.481*** (0.063)
Agency Ideology (L-C)	0.135 (0.082)	0.095 (0.099)	0.130 (0.078)	0.087 (0.093)
Obama Vacant Months	0.007 (0.007)	0.017** (0.006)		
Vacant Months:Obama Vacant Months	-0.000 (0.000)	-0.001*** (0.000)		
Vacant Months ²			0.001* (0.000)	0.001* (0.000)
Constant	0.224 (0.259)	-0.021 (0.114)	0.451* (0.232)	0.339*** (0.081)
R ²	0.484	0.533	0.497	0.518
N	124	99	126	101

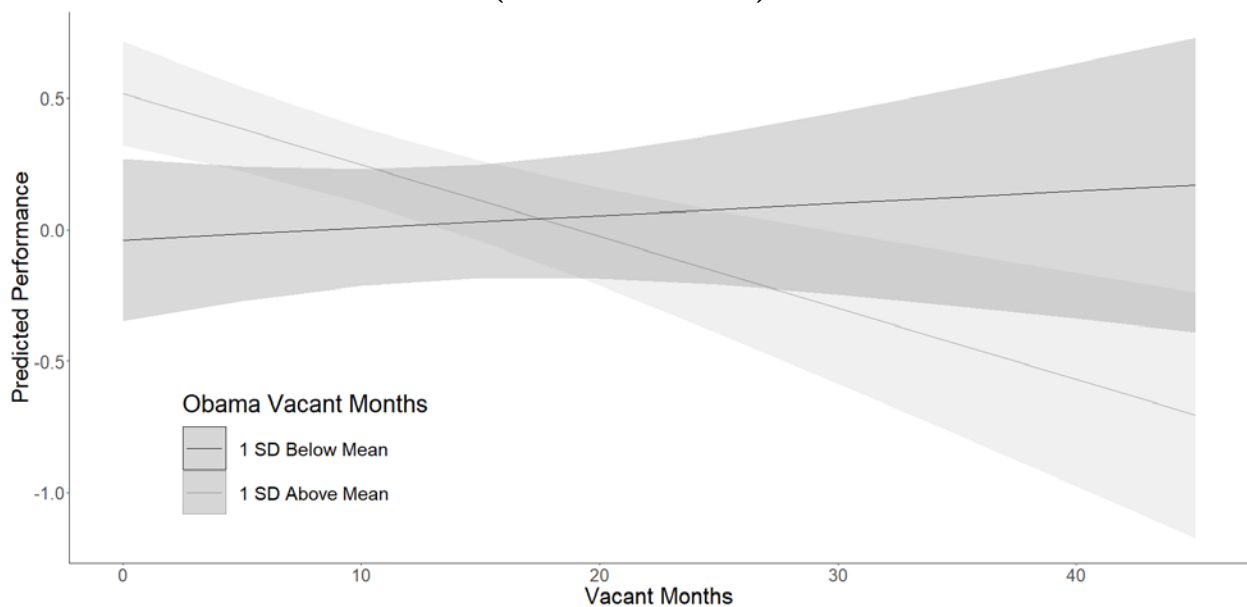
*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$

Finally, we can consider how the historical context moderates the effect of vacancies on performance (Table 3). In models 1 and 2 of Table 3 we examine whether vacancies experienced during the Obama administration moderated the effect of vacancies in the Trump administration. The models reveal that PAS-led agencies with lengthy prior vacancies are significantly more affected by vacancies in the Trump Administration. This can be best seen in Figure 5, which graphs the predicted level of agency performance based on the length of vacancy. Specifically, the figure includes two lines. The first line graphs the effect of vacancies on performance in the Trump Administration for an agency that had lower than average vacancies under Obama (one standard deviation below the mean--shown in black). The second line graphs the estimated effect of vacancies for an agency with a higher than average vacancy length during the Obama Administration (one

standard deviation above the mean--shown in grey). Here, we see that at one standard deviation above the mean in vacancies during the Obama administration, vacancies during the Trump administration had a substantial, negative effect on performance. This result suggests that vacancies can have a cumulative effect on performance. Rather than agencies adapting to the consistent presence of a vacancy, these vacancies are perpetually debilitating.

Interestingly, among agencies that Obama staffed consistently (darker line), Trump vacancies were not harmful and perhaps even helpful. We can only speculate on why this might be but if President Obama staffed his own priority agencies and agencies pursuing a more liberal agenda, they might be better off without a Trump appointee stopping their ongoing policies and projects.

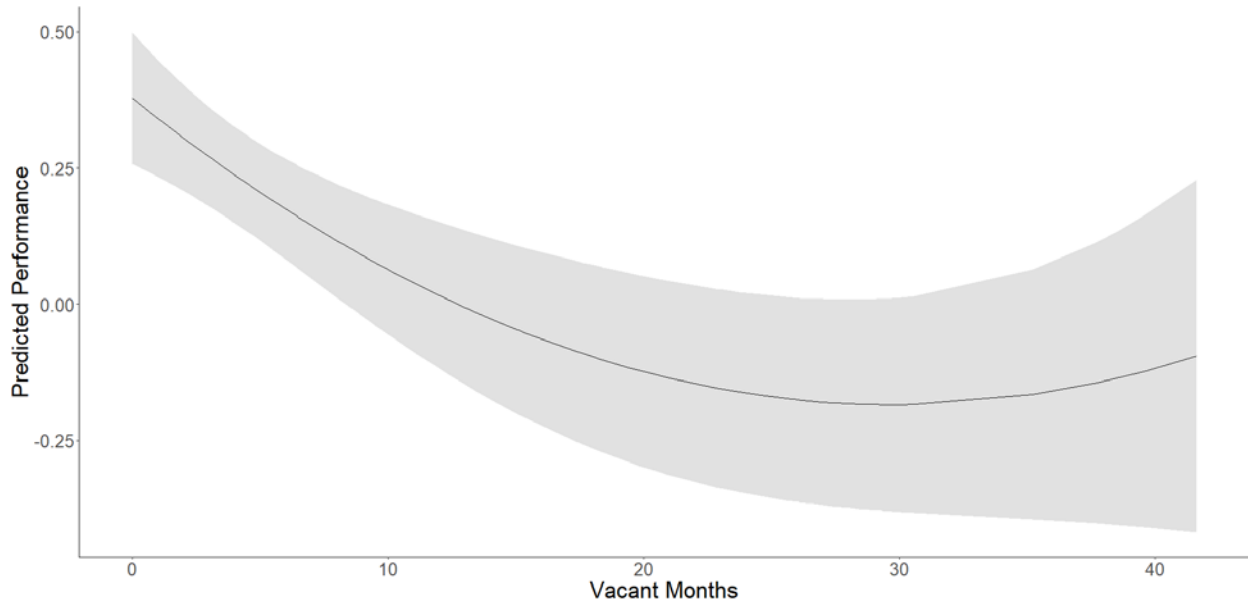
Figure 5. Estimated Impact of Vacancies on Agency Performance Conditional on Level of Obama Administration Vacancies (One Standard Deviation Below and Above the Mean) (Model 2 of Table 3)



In models 3 and 4 we evaluate whether the effect of vacancies on performance is non-linear. The positive coefficient on squared vacancy length in Models 3 and 4 of Table 3 suggest that there is a diminishing effect of vacancies on performance. This is shown in Figure 6, with the predicted level of agency performance plotted against the length of time the PAS position was vacant. We see that vacancies early on in the Trump administration, particularly within the first 18 months, had a larger

effect on performance than vacancies during the latter part of the Trump administration. This suggests that the presence of confirmed appointees in the early stages of an administration, when long-term, strategic planning and the setting of administrative priorities occurs, is particularly important for agency performance.

Figure 6. Estimated Impact of Vacancies on Agency Performance Allowing for Non-Linear Relationship (Model 3 of Table 3)



Conclusion

On May 17, 2022, President Biden renewed his call for Congress to confirm his nominee to lead the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF; Buble 2022). The agency has been without a permanent director since 2015. Biden's claim was that part of the nation's gun problem could be traced to a lack of confirmed leadership in the agency. This paper has sought to determine whether there is a relationship between vacancies and federal agency performance, not just in ATF but government-wide.

It tests Biden's claim in a general way with original new data and measures of federal agency performance that are comparable across contexts. It includes a number of key findings. First, vacancies are associated with lower agency performance. Second, the effect of vacancies is

particularly strong for agencies like the ATF that are designed to be directly led by a political appointee. Third, there is suggestive evidence that the appointee team that takes on a larger role during vacant periods moderates the effect of the vacancy. Agencies with larger numbers of appointees and agencies whose temporary officials are political officials are more negatively affected by vacancies. Fourth, the agencies longitudinal experience with vacancies significantly moderates the effect of its current vacancies. Rather than agencies adapting to vacancies over time, vacancies across multiple administrations create a cumulative negative effect on performance. Finally, vacancies early on in an administration are the most consequential for performance.

Two important implications result from these analyses. First, the results highlight the potential consequences of the current dysfunction in the appointments process in the United States. As partisan polarization leads to slower nominations and longer and more uncertain confirmations, the average effect will likely be lower agency performance. These effects are likely (though not certainly) moderated by the degree of appointee penetration and the composition of appointee teams. Efforts to reduce the number of political appointees may have both direct and indirect benefits for performance since there is suggestive evidence that agencies led by Senior Executives are more immune to higher level vacancies and agencies with few appointees appear less affected by vacancies. More research is necessary, however, since these effects are imprecise.

Second, the results suggest a more general direction for research on vacancies and organizational performance. We have focused on finding the average effect of vacancies in key leadership positions but vacancies matter more in some contexts than others. Vacancies in some positions in the organization chart matter more for some agencies, themselves located in different places in the organization chart. The effect of the vacancy is also likely determined by the quality and competence of the team that operates while the vacancy persists. Finally, whether an organization

operates with a vacancy matters more during some periods than others. The decline in performance is greatest at the start and past vacancies might multiply the effects of current vacancies.

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