

Rulemakers' Professional Experience and Rulemaking Efficiency in U.S. Federal Agencies

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Abstract

I explore the potential impact of rulemakers' professional experience on the efficiency of rulemaking by U.S. federal agencies. I highlight two types of professional experience rulemakers may have—inside experience gathered by working in the federal government, if not the same agency, and outside experience gained before entering the civil service or between stints in government. I discuss several plausible mechanisms through which inside and outside experience may affect rulemaking efficiency. Using data combining rulemakers' career backgrounds with rulemaking life-cycles from 1999 to 2023, I show that outside experience, and not inside experience, is associated with two measures of rulemaking efficiency: a higher likelihood for proposed rules to be promulgated as final and a lower likelihood of unanticipated events—extensions of public comment periods, other delays to the rulemaking timetable, and the withdrawal of rules already issued.

Keywords

rulemaking, federal agencies, bureaucratic efficiency, government officials' professional backgrounds

Does the professional experience of bureaucrats affect the efficiency of federal agency rulemaking? If experienced workers create superior products, on-the-job training should enable seasoned bureaucrats to craft higher-quality rules.¹ Higher-quality rules, then, are more likely to withstand the challenges in the rulemaking process and become enacted regulatory policy. It is plausible to expect experienced rulemakers to convert a greater share of the rulemakings they lead into promulgated final rules than their less experienced colleagues.

Why should rulemakers' job experience have this effect? Considering the notice-and-comment rulemaking process shows that two sets of factors—structural and political—affect whether rulemakings reach finalization and how quickly. Structural factors include intra-agency regulatory analysis, review of proposed and final rules by the Office of Information and Regulatory Affairs (OIRA), and the collection and consideration of public comments. Political factors relate to the influence wielded by the political principals (e.g., McGrath, 2013; Moe, 1985; Ritchie, 2018), agency executives (Potter, 2017, 2019), and organized interests (e.g., Golden, 1998). These influences on rulemaking outcomes suggest what makes rulemakers' experience valuable: the policy, procedural, and political knowledge, which comes with prolonged exposure on the job, that enables rulemakers to overcome hurdles presented by the rulemaking process.

As these types of knowledge usually do not exist in mutual isolation, it is difficult to unpack them and measure their separate influence on rulemaking outcomes. But a readily measurable typology of professional experience—experience inside and outside the civil service—offers a promising empirical strategy. Inside experience and outside experience create different combinations of knowledge while sharing some commonalities. In brief, inside experience uniquely gives rulemakers detailed procedural knowledge and outside experience creates more direct knowledge of organized interests' policy preferences, while both provide policy knowledge. More experience is not always better, however: a long civil service career, in particular, may lead to decreased motivation for career advancement and, through its motivational effect, decrease rulemakers' efficiency (Daley, 1987; Pearce & Perry, 1983). These expectations, to be detailed later, highlight inside and outside experience as meaningful predictors of rulemaking outcomes.

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I analyze the relation between rulemakers' inside experience and outside experience based on data combining rulemakers' career backgrounds and rulemaking life-cycles from 1999 to 2023. This analysis focuses on two key rule-making outcomes essential to efficiency: the proportion of proposed rules that become promulgated as final rules and the occurrence of three types of unanticipated events—extensions of the public comment period, other delays to the rulemaking timetable, and the withdrawal of rules already issued. These outcomes of interest differ from the main measure of efficiency in existing studies—the amount of time it takes for rulemakings to cross the finish line (e.g., McGarity 1991; Pierce, 1995; Yackee & Yackee, 2010)—but capture the amount of agency effort that comes to fruition.

My analysis shows that rulemakers' outside experience, and not their inside experience, is associated with a higher likelihood for proposed rules to reach finalization and a lower likelihood for unanticipated events to occur. On average, rulemakers with no outside experience are predicted to have a bit over 70% of their proposed rules reach finalization. In comparison, rulemakers with the maximum observed outside experience see 80%–90% of their proposed rules finalized. This difference in outside experience also corresponds to a decrease in the likelihood of unanticipated events from around 10% to under 5%. Inside experience, however, is associated with no such boosts to rulemaking efficiency. Because these apparent effects on efficiency may be explained by the deliberate selection of rulemakers into rulemakings on account of innate difficulty, I conduct exact matching to select rulemakings that are identical on several observable characteristics and then perform post-matching analysis. Still inconclusive for causal inference, matching nonetheless mitigates selection bias owing to observable factors. Matching corroborates the main findings based on the full sample.

Though non-causal, the inference drawn from the data suggests that rulemakers' professional background inside and outside government may impact regulatory policymaking. Furthermore, any boost that outside experience does bring to rulemaking efficiency, which remains a question needing an answer, suggests that policy professionals with career mobility function as vessels of expertise that help connect state and society and lubricate the administrative state. This informs hiring priorities for the civil service by encouraging agencies to look further afield to recruit rulemakers from industry, advocacy groups, and state governments.

Structural Explanations of Rulemaking Efficiency

Structural explanations focus on the procedural requirements imposed on the rulemaking process. Outlining the informal rulemaking process underscores its checkpoints: an agency first drafts a proposed rule, followed by a possible review by

the Office of Information and Regulatory Affairs (OIRA) within the Office of Management and Budget. After passing OIRA review, the agency publishes the proposed rule in the *Federal Register* and gives the public an opportunity to submit comments. After the public comment period, the agency considers the comments received, drafts a final rule, and publishes it in the *FR*. Another OIRA review may follow.

The operating efficiency of each link in the rulemaking process matters for its overall efficiency. To start with, agencies perform cost-benefit analysis of major rulemakings, consider alternative proposed rules, and then submit the chosen one to the OMB for further review pursuant to Executive Order 12291 (Pierce, 1995). The intra-agency processes that agencies use for these activities, like internal advisory committees, affect rulemaking efficiency (McGarity 1991). Political principals continually layer new requirements on top of old ones to control agencies, adding more procedural requirements over time (Potter, 2017). In a fairly recent instance, President Barack Obama requires agencies to quantify anticipated benefits and costs of proposed rulemakings as accurately as possible in Executive Order 13563. Having survived intra-agency review, proposed rules then come under the scrutiny of OIRA and the interested public.

The time-consuming nature of these processes leads to the “ossification thesis,” the assertion that procedural constraints prevent agencies from making desirable regulations in a timely manner (McGarity 1991). Whether or not modern rulemaking is appropriately labeled as ossified (Yackee and Yackee (2010) are skeptical of this characterization), the torturous process of rulemaking favors those experienced in navigating it. If rulemakers' familiarity with the rulemaking process grows over time with their exposure to it, then the inherent procedural difficulty of rulemaking should reward seasoned bureaucrats with higher rulemaking efficiency: less of their efforts will be wasted running into the thorns of procedure.

Measures of Rulemaking Efficiency

This reasoning leads to the critical question of what efficiency is and how to measure it. Structural research of rulemaking efficiency has mostly focused on one facet of it: speed (McGarity 1991; Pierce, 1995; Yackee & Yackee, 2010). It has paid much less attention, however, to another critical component of efficiency—how many proposed rules are successfully promulgated as final rules, however long the whole process may take. The eventual conversion of a proposed rule into a final rule should not be taken for granted. As Dwidar (2022) notes, agencies may drop proposed rules at their discretion during the years-long rulemaking process. The finalization rate of proposed rules is a direct measure of how much agency effort pays off in the form of enacted regulatory policy. As such, it warrants examination as a measure of efficiency along with the amount of time successful rulemaking ends up consuming.² From the same

perspective, I additionally study how often rulemaking evidently does not go according to plan, as evidenced by the occurrence of unanticipated events that mark deviations from the set timetable—extensions of the comment period, other types of delays such as postponements of the final rule promulgation, and the withdrawal of proposed, interim, or final rules already issued.³ The same structural factors that have been shown to matter for rulemaking speed—and their implications for the value of rulemaker experience—should likewise apply to the occurrence of unanticipated events.

Political Influence on Rulemaking Outcomes

Institutional processes are intrinsically political: rather than arising spontaneously, processes are set by politicians with political interests and reflect those interests (e.g., McCubbins et al., 1999). Situated in a separation-of-powers context, the rulemaking process itself reflects the political considerations of those that create and modify it—Congress, the president and, less directly, the interests in society that empower them through elections (McCubbins et al., 1987). Still, in practice it is useful to separately treat structure and interest. Politicians and societal interests insert themselves into rulemaking regularly even when structural change is not on the agenda. Research on political explanations of rulemaking efficiency suggests that rulemakers' professional experience is valuable for rulemaking efficiency: rulemakers who can anticipate political pressure likely can navigate the rulemaking process more capably and achieve higher efficiency than those oblivious to the political interests active in rulemaking.

Among political explanations of rulemaking outcomes, interest group influence on rulemaking most strongly suggests that rulemakers' professional experience matters for rulemaking efficiency. Organized interests routinely submit public comments (Carpenter et al., 2020; Golden, 1998; Yackee, 2006), and these comments demonstrably influence agencies' revisions of proposed rules reflected in final rules (Dwidar, 2022; Nelson & Yackee, 2012; Yackee, 2006). If rulemakers' professional experience allows them to anticipate interest group pressure, that experience should enable them to craft rules that can better survive interest group scrutiny and opposition.

Pressure comes from the political principals in government themselves. Congress is a source of several forms of oversight. Committees hold hearings and conduct investigations (McCubbins & Schwartz, 1984; McGrath, 2013). The appropriations committees in particular issue committee reports accompanying appropriation bills to instruct agencies on the implementation of law (Bolton, 2022). Individual members of Congress go it alone in overseeing the bureaucracy and use back-channel communications with agency heads (Lowande, 2018; Ritchie, 2018). These forms of congressional oversight make rulemakers' professional

experience valuable for rulemaking efficiency if that experience lets them draft rules that congressional overseers support. Also relevant is the president: because rulemakings must first survive the executive branch to have a chance at finalization, rulemakers' familiarity with the preferences of presidential appointees, including the OIRA director, should be an asset for rulemaking efficiency. Presidential leadership of the executive branch advantages rulemakers who are in tune with the appointment politics of agency heads (e.g., Moe, 1985).

Formulating Expectations for the Impact of Rulemaker Experience on Rulemaking

These discussions above of the structural and political factors that influence proposed rules' paths to finalization advance specific reasons to expect rulemakers' professional experience to be helpful: more experience is valuable because it enables rulemakers to mitigate the many structural and political risks facing rules in development. A test of how rulemaker experience affects rulemaking efficiency that perfectly mirrors these structural and political determinants might, in some fashion, disassemble total experience into its individual components, with each component corresponding to certain determinants—for instance, how much of a rulemaker's 15-year tenure in an agency is conducive to her knowledge of constituent preferences.

Such a "perfect test" is unrealistic, however, due to the limited availability of rulemakers' work experience and the more fundamental problem of mapping that experience exactly to the structure and politics of rulemaking. In this paper, I simply assume that each rulemaker may have two broad types of experience: inside experience and outside experience. The former is work experience that a rulemaker accumulates inside the federal civil service, while the latter consists of any professional experience obtained outside it. Without presuming that either inside or outside experience is monolithic, I contend that the two broad types of experience create systematically different combinations of knowledge and motivations that matter for rulemakers' performance. I proceed to unpack this assumption.

Knowledge

Likely the most obvious reason that rulemakers' work experience should affect rulemaking efficiency is that experience increases job-relevant knowledge, which enables rulemakers to draft higher-quality proposed rules. To accumulate inside experience is to learn on the job (Gailmard & Patty, 2013). To say the same about outside experience, however, runs into the problem of relevance: can one assume that a rulemaker's previous job before joining the federal government contributes to knowledge relevant to rulemaking? Getting hired from outside provides an initial

indication that the rulemaker has relevant knowledge. Hiring rules for the civil service cement confidence on this question.⁴

If both inside and outside experience produce policy knowledge, in other respects they likely have different effects on rulemakers' performance. Inside experience creates inside knowledge on the rulemaking process—both structure and politics. Structural—or procedural—knowledge includes how specific agencies handle intra-agency review of proposed rules including preparing them for OIRA approval, analyze public comments received, and revise proposed rules for finalization. Political knowledge consists of knowledge of the policy preferences of political and bureaucratic overseers of rulemaking—congressional committees and members, as well as presidential appointees that lead agencies and OIRA. By and large, outside experience cannot be expected to confer these types of inside knowledge.

Outside experience excels comparatively, however, in giving rulemakers direct and current knowledge of constituent preferences. A look at the career histories of rulemakers gleaned from several sources—usually rulemakers' LinkedIn profiles, followed by media profiles about rulemakers' careers and occasionally obituaries—shows that rulemakers who previously worked outside the federal government often held positions in advocacy groups in the same or related policy area or a state regulatory agency. For example, Francie Tolle, director of the Product Administration and Standards Division at the U.S. Department of Agriculture Risk Management Agency since 2018, previously worked for the Oklahoma Farmers Union and the Oklahoma Wheat Growers Association.⁵ Rodger Boyd held government relations roles in the Navajo Nation and a company before joining the federal government, first as Program Manager of the Community Development Financial Institutions within the Treasury Department (1998–2002) and then as Deputy Assistant Secretary of Native American Programs in the Department of Housing and Urban Development (2002–2015).⁶

Besides policy knowledge, such previous employment provides rulemakers with direct exposure to organized interests active in their agencies' policy areas. This helps them anticipate constituent responses to regulations under consideration and mitigate resistance created by strong organized opposition. Critically, inside experience can foster knowledge of constituent preferences. While on the job, regardless of previous employment, rulemakers can learn about constituent preferences by observing comments submitted by groups on many rules (Gailmard & Patty, 2013). But this kind of learning on the job is indirect, if broader, compared to working for a constituent group. Overall, I expect outside experience to be comparatively more helpful for heading off unanticipated rulemaking events, particularly extensions of the comment period and withdrawals of a rule or rulemaking announcement, which are often brought on by organized resistance (Yackee, 2012).

Motivation

The effect of rulemakers' work experience on rulemaking efficiency also includes shaping rulemakers' career motivations. While knowledge grows with rulemakers' inside experience, their intrinsic motivation to do well on the job may not. To the extent that longer tenures in the civil service lead to fewer risks for career bureaucrats in permanent positions to lose their jobs,⁷ more inside experience accrued by rulemakers leads to a reduced motivation to improve performance.⁸ This leads me to expect the motivational effect of inside experience on rulemaking efficiency to be negative overall. The effect of previous outside work experience on rulemakers' motivation contains more strands, however.

A history of outside employment demonstrates a rulemaker's value to organizations outside the federal government. If rulemakers recruited from outside remain interested in heading back out, as is likely the case, their need to maintain value in the eye of outside actors drives them in two ways, both of which contribute to higher rulemaking efficiency. First, rulemakers hope to be credited with a large amount of regulatory policymaking, which in turn encourages them to avoid setbacks and wasted effort in the rulemaking process. Second, outward-facing career considerations motivate rulemakers to make rules that are palatable to outside interests. Draft rules that outside interests find agreeable likely face less organized opposition in the rulemaking process, including during the public comment period. Less resistance then makes draft rules more likely to be finalized and less likely to encounter unanticipated events—the two elements of efficient rulemaking.⁹ Taken together, the motivation associated with outside experience increases rulemaking efficiency.

Selection

The mechanisms discussed above all have rulemakers' professional experience causally influencing rulemaking efficiency. But rulemaker experience may be endogenous to efficiency if rulemakers are assigned onto rulemakings on account of their ability. For example, from among available rulemakers, an agency may assign a veteran bureaucrat versed in OIRA reviews to lead a rulemaking of high economic significance. Similarly, an agency may put a rulemaker who previously steered the ship at a trade association in charge of a rule that will likely attract interest group scrutiny. Even with seasoned hands in charge, however, difficult rulemakings can end up being finalized less often and encountering more unanticipated events along the way than easier rulemakings. If so, endogenous rulemaker selection can create a negative observed relation between experience and efficiency.¹⁰

Summarizing Empirical Expectations

In Table 1, I list the mechanisms explained above for empirical associations between rulemakers’ professional experience and rulemaking efficiency, both those in which experience is causal and those where it is endogenous. I note the overall expected direction of each effect on rulemaking efficiency with plus or minus signs. Tallying the positive and negative effects roughly predicts that outside experience is more positively related to rulemaking efficiency than inside experience, a contest I leave to the data.

Testing How Rulemaker Experience Relates to Rulemaking Efficiency

I conduct empirical analysis of federal agency rulemaking that follows the notice-and-comment process. For many rulemakings, on one hand I identify rulemakers in charge and estimate how much inside and outside experience they have. On the other hand, I obtain data on rulemaking outcomes—particularly whether the proposed rule becomes a final rule and whether any unanticipated event takes place during the rule-making life-cycle. Combining the two sets of information, I examine the pattern of experience and outcomes while also taking account of agency, political, and rule-specific characteristics that may independently impact rulemaking outcomes.

Rulemaking Outcomes

For data on rulemaking outcomes, I parse electronic versions of the *Federal Register* (in machine-readable XML format) from 2000 to January 2023,¹¹ the entire available period for electronic versions of the *FR* at the time of writing. For each rulemaking, I record whether it leads to a final rule and whether one or more unanticipated events takes place during its life-cycle.¹² A fair amount of textual irregularity exists in the reporting of rulemaking events and agency actions in the *FR* (e.g., several variants of “Notice of Proposed

Rulemaking” are all used), so I manually code the rulemaking events to classify rulemaking events and outcomes as accurately as possible. The total number of rulemakings is 6,301, a number that will be limited by data constraints imposed by the predictors.

Rulemakers and Their Hiring Circumstances

The main predictors concern rulemakers’ professional experience inside and outside the federal civil service. To generate these variables, I first collect the identities of rulemakers by processing the *Unified Agenda* and then obtain information on their professional experience based on hiring records of federal personnel.

Identifying Rulemakers in the Unified Agenda. OIRA publishes semi-annual issues of the *UA*, starting in Fall 1995, as XML files similar to the *FR*.¹³ For each regulatory item included in the *UA*, the names, job titles, and contact information of persons in charge are typically available.¹⁴ These agency contact persons, among whom are the previously mentioned Francie Tolle and Rodger Boyd, are the rulemakers whose professional experience I study as a set of factors that potentially matter for rulemaking success. From an original universe of 6,301 rulemakings by top-30 non-DoD agencies listed in the *FR*, the availability of *UA*-listed agency contacts limits my sample to 5,924 rulemakings.

Several facts make clear that these contact persons play substantive roles in rulemaking rather than merely relaying information to those who do. First, these agency contacts are almost always in the top echelons of the federal bureaucracy. Officials whose pay grades are at GS-14 or GS-15 comprise 61% of these agency contacts, compared to around 11% in the civil service at large in the 2010s¹⁵; members of the Senior Executive Service represent another 5% of the agency contacts (SES officials constitute just half of one percent of all civilian employees of the federal government).¹⁶ Of the remaining agency contacts, about half are at GS-13.¹⁷ Second,

Table 1. Mechanisms of Association Between Rulemakers’ Professional Experience and Rulemaking Efficiency.

Nature of mechanism	(Direction of relation with rulemaking efficiency) mechanism	
	Inside experience	Outside experience
Causal	<i>Knowledge</i> (+) knowledge of policy (+) knowledge of the rulemaking process and political principals’ preferences (+) indirect knowledge of constituent preferences	<i>Knowledge</i> (+) knowledge of policy
	<i>Motivation</i> (–) lack of motivation induced by job security	<i>Motivation</i> (+) desire to maintain good relations with constituents
Endogenous	(+) selection into easy rulemakings (–) selection into difficult rulemakings	(+) selection into easy rulemakings (–) selection into difficult rulemakings

agency contacts' job titles and descriptions tell a consistent story. Contacts' job titles describe chiefs or directors of various divisions or groups, policy specialists, program analysts, and attorneys. Many agency contacts subsequently gain high-level employment outside the federal government. This fact alone is indicative of contacts' policy influence while serving in government, but their descriptions of previous government duties are more telling. Examples abound. According to a press release by the National Fish and Wildlife Foundation announcing Holly Bamford as its new Chief Conservation Officer, Bamford "drove administration policy, programming, and investments for [the National Oceanic and Atmospheric Administration]'s ocean, coastal and fisheries management" and "worked...to develop policies and take conservation actions..."¹⁸ Policy consultant Keith Ligon reports that he "developed" and "handled complex financial institution regulation" while leading teams at the Federal Deposit Insurance Corporation.¹⁹ Third, existing research has similarly regarded agency contacts listed in the *UA* as the chief rulemakers of interest (Doherty et al., 2019).

Nevertheless, although the agency contacts listed in the *UA* are substantive, policy-influencing contributors to rulemaking and typically rulemaking leaders, they are likely not the only ones involved. Agencies delegate the task of rulemaking to teams rather than to individuals. The professional experience of other team members, especially those with supervisory roles, should also matter for rulemaking outcomes even though they are unlisted. Without access to the complete rosters of rulemaking teams, I conduct supplemental analysis that substitutes the work experience of *UA*-listed agency contacts with rough estimates of that of all senior agency officials, included in Appendix B.2. For this analysis, I use a standard set of job characteristics available in the OPM data, detailed in the appendix, to identify plausible rulemaking participants. If the analysis based on agency contacts fails to identify certain rulemakers, this more inclusive approach likely over-identifies them by counting non-participants erroneously. The goal is to see if the two approaches yield consistent results. As discussed below, they largely do.

To measure rulemaker experience in a way that recognizes the observed teamwork among rulemakers, I mainly adopt a "bag of experience" approach: I measure the combined work experience of all staffers listed as working on the same rulemaking—as if they formed an amalgam that has all their individual work experience—while controlling for the number of rulemakers in regression analysis. I treat each rulemaker team as having as much inside and outside experience as that member who has the largest amount of it: for example, a team made up of Rulemaker A, who has 5 years of inside experience and 3 years of outside experience, and Rulemaker B, who has 3 years of inside experience and 5 years of outside experience, is treated as having 5 years of each type of experience. In essence, this approach assumes that team members pool their comparative advantages in knowledge and skills to form a collaborative enterprise, not

unlike a congressional office (Salisbury & Shepsle, 1981). In a supplemental measurement strategy, used in parts of the analysis, I adopt a person-counting approach that calculates the proportion of rulemakers involved whose experience inside and outside government exceeds some set threshold (10 years).²⁰

Obtaining Rulemakers' Personnel Information in OPM Records. Once the rulemaking contacts are identified for each rulemaking, the next step is to collect information on their professional experience inside and outside the federal government. To this end, I attempt to identify rulemakers in federal hiring records, which the Office of Personnel Management (OPM), an independent agency that functions as the "central human resources department of the executive branch" (Jennings & Nagel, 2020, p. 3), collects, maintains, and publishes. OPM hiring records can tell us when *UA*-listed rulemakers were first hired by the federal government and the age at which they started working (extracted from the "accessions cubes" within the OPM data), along with their accumulated length of government service (extracted from the "employment cubes") (Jennings & Nagel, 2020). Based on these OPM data fields, I measure the length of inside experience rulemakers possess at the time of each rulemaking as the length of civil service employment they have accrued then—in other words, subtracting the date of hire from the rulemaking start date, typically the date that an NPRM is issued in the *FR*.

The amount of work experience outside government that rulemakers have obtained at rulemaking time, in contrast, is obtained by estimation based on reasonable assumptions rather than by precise calculation. While future work may explore this further, rulemakers' employment histories appear hard to collect systematically across many agencies for statistical analysis. Without this information, I simply assume that any time spent during an employee's ordinary professional life *not* working in the federal government—i.e., employment not recorded in the OPM data—was spent working outside the government. This approach therefore requires specifying when each career starts. To estimate any length of time spent working outside the government at the beginning of rulemakers' professional careers before first entering the federal government, I assume that every career starts at the age of 27.²¹ To summarize, I observe inside experience from the OPM data and presume outside experience to be the residual career left unaccounted for.

A complicating factor that could render this simplifying assumption inaccurate is advanced education attained by rulemakers, especially beyond a first professional degree (e.g., a law degree, common among rulemakers), like a doctoral degree. In addition, advanced education in a specialized field should also be expected to independently affect rulemaking outcomes by contributing to rulemakers' policy knowledge. For these reasons, I use control variables that capture rulemakers' attainment of doctoral degrees alongside

their work experience, as detailed below. Of the agency contacts in my data, about 9% earned a doctoral degree at some point in their careers (the variables I use in statistical analysis indicate whether rulemakers has a doctoral degree at the time each rulemaking starts).

The OPM data prepared for public release, though comprehensive in containing all hiring records (the aforementioned “accessions cubes”), do not contain personally identifying information—most importantly, employee names that I can link to agency rulemaking contacts listed in the *UA*, or even a traceable ID number assigned to each employee. Fortunately, in response to a FOIA request from BuzzFeed, the OPM released its personnel records containing personally identifying information, which BuzzFeed then shared with the public (Singer-Vine, 2017). The task, then, becomes identifying *UA*-listed rulemaking contacts in the FOIA-released OPM data. To do so, I first identify federal employees in the OPM data whose names match rulemaking contacts. Then, I use the accompanying information on employees’ hiring and positions in government, such as their job titles and the agencies where they serve, to determine which matches—if any—are likely correct. The lack of high-confidence matches in the OPM data for some rulemakers, along with the occasional omission of agency contacts from *UA* listings, reduces the sample size to 3,356 rulemakings from 5,924.²²

Control Variables

I collect four control variables that can be expected to affect rulemaking efficiency independently. First is the aforementioned rulemakers’ possession of doctoral degrees at the time each rulemaking starts. Information on rulemakers’ educational attainment comes from the “employment cube” datasets within the OPM FedScope data, updated twice a year. In regressions, I control for the number of rulemakers on each rulemaking who hold doctoral degrees. I also control for three rule characteristics: whether each rulemaking is reviewed by OIRA, whether it is economically significant (most commonly defined as those having a \$100 million impact on the economy), and the number of public comments it receives.²³ I expect the three rule characteristics to be negatively related to the likelihood for proposed rules to be finalized and positively related to the likelihood of unanticipated events: important regulations that attract heavy attention should be more prone to challenges along the way than inconspicuous, routine, and insignificant rulemakings. Rulemakers’ attainment of doctoral degrees should be positively related to rulemaking efficiency (higher finalization rate and fewer unanticipated events) to the extent that this variable measures rulemakers’ competence, but negatively related to it to the extent that rulemaker education proxies the inherent difficulty of rulemakings, therefore creating mixed expectations regarding its sign.

Information on OIRA review comes from reports released on the OIRA website.²⁴ The classification of economic

significance comes from the *Unified Agenda*. Public comments are downloaded in bulk from another government website created for this exact purpose: regulations.gov. I include these controls in some regression models while leaving them out in others, as detailed below. Data availability on public comments imposes another data constraint: not all agencies participate in the government-wide posting of comments (the FAQs for regulations.gov inform users about “non-participating” agencies; see Appendix A.1 for the agencies for which comments are available). Controlling for the number of public comments reduces the remaining number of rulemakings for analysis from 3,356 to 2,045.

Results

According to the data, how does rulemakers’ professional experience inside and outside government relate to rule-making? In presenting the empirical results, I first discuss the finalization of proposed rules and then discuss the occurrence of unanticipated events. Within both discussions, I first present descriptive results and then regression analysis. Finally, I present matching analysis encompassing both rule-making outcomes.

Rulemaker Experience and Rule Finalization

Among the 3,356 rulemakings in the sample, 2,060 (or 61.4%) were promulgated as final rules according to the *Federal Register*. For an initial look before getting into details, among rulemakings for which at least one rule-making contact has accrued at least ten years of work experience in the federal government ($n = 2,304$), 62% were finalized. Among rulemakings for which no rule-maker has so much inside experience ($n = 1,052$), 59% were finalized. Outside experience corresponds to a bigger difference in the finalization rate: 64% of rulemakings led by rulemakers with 10 years or more of outside experience ($n = 1,673$) were finalized, in contrast with 58% of other rulemakings ($n = 1,683$).

A closer look complicates the picture somewhat. In Figure 1, I categorize years of inside and outside experience, respectively, accrued by rulemakers at the time rulemaking starts in correspondence with the proportion of proposed rules that end up being promulgated as final rules. I create a category for zero year for outside experience but not for inside experience; this is because federal employees listed as rulemaking contacts inevitably have spent some non-zero amount of time on the job already, while it is entirely possible to have no work experience outside government under one’s belt. Observations become sparse above 30 years of work experience, inside or outside government, prompting me to lump additional years of experience into the “> 25 years” category.

Both inside and outside work experience relate to the likelihood of rule finalization in a non-monotonic fashion,

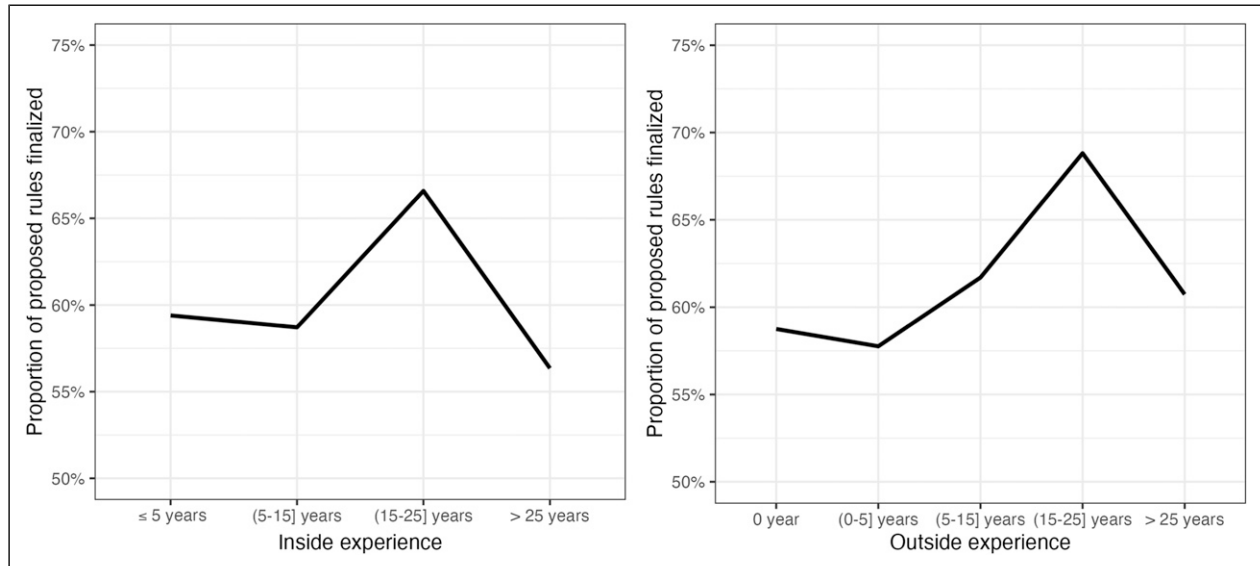


Figure 1. Rulemakers' professional experience and rule finalization.

which peaks when the amount of experience is between 15 to 25 years, but for different reasons. The selection of rulemakers into rulemakings accounts for some non-monotonicity associated with inside experience: rulemakers with this medium-high amount of inside experience carry more rules across the finish line because they, for whatever reason, handle slightly fewer rules that are deemed economically significant (3.3% of their rules are economically significant compared to 3.9% overall), get reviewed by OIRA (28% compared to 31% overall), and attract many comments (1.86 comments on average compared to 3.13 overall). There is no such contrast, however, associated with outside experience, for which the observed non-monotonicity is more of an artifact of visualization. The highest category for outside experience (> 25 years) is sparsely populated (just under 5% of rulemakings, compared to 14% for inside experience); the scarcity of that category means that the non-monotonicity of outside experience is visually exaggerated in Figure 1. The finalization rate is more monotonically increasing with outside experience than it appears. Above all, this investigation of the visualized patterns underscores the importance of using matching to identify and analyze rulemakings that are identical to each other in terms of which agency proposed them and when, rule characteristics like importance, and rulemaker characteristics.

Before that, though, I first use simple regressions to control for these factors when analyzing how both types of rulemaker experience relate to rule finalization. I show logit regressions in Table 2, where measures of inside and outside experience serve as the predictors of interest for whether each proposed rule is finalized—the binary outcome variable. For these and subsequent regressions, I control for fixed effects for each agency and each year of rulemaking initiation and cluster the standard errors by rulemaker or combination of

rulemakers. In Models 1 and 2, I adopt the “bag of experience” approach to measuring rulemaker experience. “Max years of inside experience” and “max years of outside experience” measure the most experience of each type held by any individual rulemaker in charge. Many rulemakers are rich in both types of experience at rulemaking time; in other cases, two or more rulemakers combine to form a team that is collectively rich in both types of experience. To the extent that each type of experience muddles the other's relation with rule finalization, using this pair of predictors at the same time helps disentangle their respective effects. In the regression table, I show the p -values associated with F-tests for whether the coefficient estimate for outside experience is statistically greater than that for inside experience, against the null hypothesis of no difference.

Besides these predictors, Model 1 controls only for the number of rulemakers leading each rulemaking. Outside experience is a significant positive predictor of finalization but inside experience is unrelated. Model 2 additionally controls for how many rulemakers have doctoral degrees and the three rule characteristics. As mentioned earlier, missing data on the number of public comments received reduces the number of observations in from Model 1 to Model 2 (likewise from Model 3 to Model 4).²⁵ The coefficient for inside experience decreases in size and remains insignificant. In contrast, that for outside experience increases somewhat in size and remains significant (see below for a description of their practical magnitudes based on Model 2). The control variables obtain unsurprising estimates: as expected, more influential and potentially more controversial rulemakings, evidenced by OIRA review and economic significance, are less likely to be promulgated as final rules. Rulemakers' possession of doctoral degrees has a positive but non-significant estimate.

Table 2. Logit Regressions of Rulemakers' Professional Experience and Rule Finalization.

	<i>Dependent variable</i>			
	Final rule promulgated			
	(1)	(2)	(3)	(4)
Max years of inside experience	0.009 (0.006)	0.002 (0.008)		
Max years of outside experience	0.015* (0.006)	0.019* (0.009)		
Proportion of rulemakers with 10+ years of inside experience			0.045 (0.098)	-0.081 (0.135)
Proportion of rulemakers with 10+ years of outside experience			0.264* (0.129)	0.388* (0.165)
Number of rulemakers	-0.287* (0.072)	-0.148 (0.095)	-0.214* (0.064)	-0.087 (0.087)
Number of doctoral degree holders		0.139 (0.161)		0.136 (0.167)
OIRA review		-0.787* (0.127)		-0.775* (0.125)
Economically significant		-1.002* (0.297)		-1.024* (0.300)
Number of public comments		-0.002 (0.002)		-0.002 (0.002)
Constant	1.410* (0.554)	-7.133* (1.117)	1.423* (0.554)	-6.909* (1.099)
Agency FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	3,356	2,046	3,356	2,046
R ²	0.160	0.209	0.159	0.210
χ ²	421.417*	341.596*	418.135*	342.728*
p-value of F-test of outside > inside	0.33	0.05*	0.07	0.006

Note. Standard errors clustered by rulemaker or rulemaker combination. *p < 0.05.

Models 3 and 4 differ from Models 1 and 2 in one respect: the measures adopted for rulemakers' work experience inside and outside the government reflect a person-counting approach instead of a "bag of experience" approach. Specifically, I calculate the proportion of rulemakers in charge of each rulemaking whose inside or outside experience passes a certain threshold in length. What the most appropriate threshold should be is ultimately a judgment call. Overall, it seems sensible to set it to 10 years so that these measures record the proportion of rulemakers with 10 or more years of either type of experience.²⁶ The coefficient estimates for the measures of inside and outside experience are consistent with their counterparts in Models 1 and 2. Outside experience is a positive and significant predictor of the likelihood of rule finalization but inside experience is not. This is true whether the model controls for rulemakers' education and rule characteristics (Model 4) or not (Model 3).

Figure 2 contains two plots that depict the predicted probability of rule finalization in relation to rulemakers' inside (left panel) and outside experience (right panel), computed based on Model 2 in Table 2. In calculating the

predicted probabilities, all variables other than the relevant experience are held at their modes or means: 1.34 rulemakers in the National Oceanic and Atmospheric Administration, 0.13 of whom hold a doctoral degree, leading a rulemaking initiated in 2011 that is not reviewed by OIRA, is not deemed economically significant, and attracts 2.4 public comments. When varying the amount of inside experience, outside experience is held at its mean of 9.6 years; when varying the amount of outside experience, inside experience is held at its mean of 14.9 years. The plots underscore that more outside experience is associated with a substantial increase in the predicted likelihood of rule finalization, while inside experience is unrelated to it.

As previously discussed, I perform additional analysis to test for the potential influence of all plausible rulemaking participants' professional experience rather than just that of the contacts, shown in Appendix B.2. Consistent with the analysis based on agency contacts, the amount of inside experience agency-wide is not significantly related to the finalization rate of rules but the amount of outside experience is generally a significant and positive predictor (Table A-4).

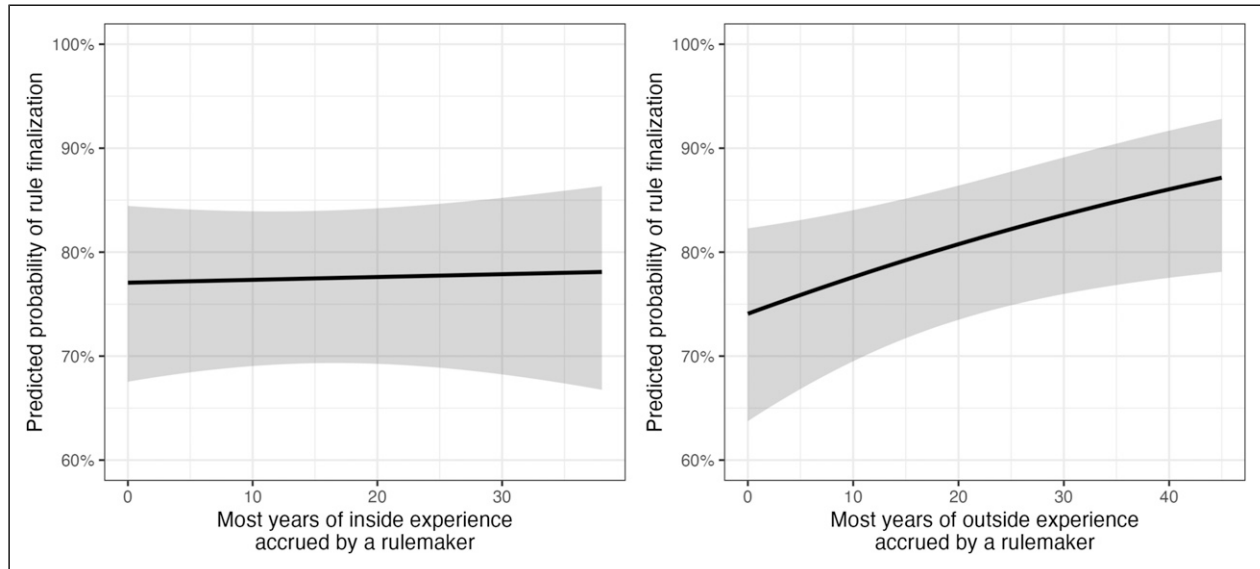


Figure 2. Rulemakers' professional experience and the predicted probability of rule finalization.

Under the “bag of experience” approach, the maximum amount of outside experience falls short of significance when the model does not control for variables other than maximum inside experience (Model 1) but is significant when the controls are present (Model 2). Under the person-counting approach, the proportion of agency officials with at least 10 years of outside experience is a significant positive predictor with or without controls (Models 3 and 4).

Rulemaker Experience and Unanticipated Rulemaking Events

In addition to the end result of finalization, I also look at the occurrence of three types of unanticipated events during a rulemaking's life-cycle in relation to rulemakers' experience: extensions of the public comment period ($n = 423$, the most frequent unanticipated event), other kinds of delay to the set rulemaking timetable ($n = 28$), and the withdrawal of proposed rules, interim rules, or final rules ($n = 86$). One or more of these unanticipated events are observed during the life-cycles of 506 (or 15%) of the 3,356 rulemakings in my sample.

Important to note, unanticipated rulemaking events and rule finalization are not merely two sides of the same coin; that is, observing these unanticipated events is not the same as observing the failure of a rulemaking to reach finalization. The two are equivalent only when the unanticipated event observed is the withdrawal of a proposed rule (or, in some cases, an interim final rule) prior to a promulgated final rule. Among the 86 instances of a rule withdrawal, only 29 fall into this category; of all unanticipated events observed, these make up a mere 5%. Adding to the difference between the occurrence of unanticipated events and the failure to reach

finalization, a rulemaking can fail to reach finalization without any unanticipated event occurring during its life-cycle; in fact, of the 1,296 rulemakings without an observed final rule promulgation, no unanticipated event occurred during the life-cycles of 958 (or 74%).²⁷

Regarding the relation between rulemakers' professional experience and unanticipated rulemaking events, simple proportions again serve as a helpful start. About 15% of rulemakings experience some unanticipated event regardless of whether rulemakers have at least ten years of inside experience. A gap, however, exists between not having and having outside experience: unanticipated events occur on 13% of rulemakings led by rulemakers with at least ten years of outside experience, compared to 17% of other rulemakings. Figure 3 visualizes the relation between rulemakers' professional experience and the likelihood of unanticipated rulemaking events. The two panels show the association between rulemakers' inside and outside experience and the three types of unanticipated events respectively. More inside experience appears associated with a greater likelihood of all three types of unanticipated events. More outside experience is generally associated with a lesser likelihood of two of the three—extensions of the comment period and rule withdrawals. Delays of the rulemaking timeline other than extensions of the comment period appear unrelated to outside experience. These observations dovetail with the positive link shown above between outside experience and rule finalization. As before, however, more systematic testing of these patterns, particularly whether they persist in the presence of control variables and fixed intercepts for agencies and years of initiation, is the task of regression analysis.

Table 3 contains logit regressions that mirror the ones in Table 2 except that the dependent variable is the occurrence of

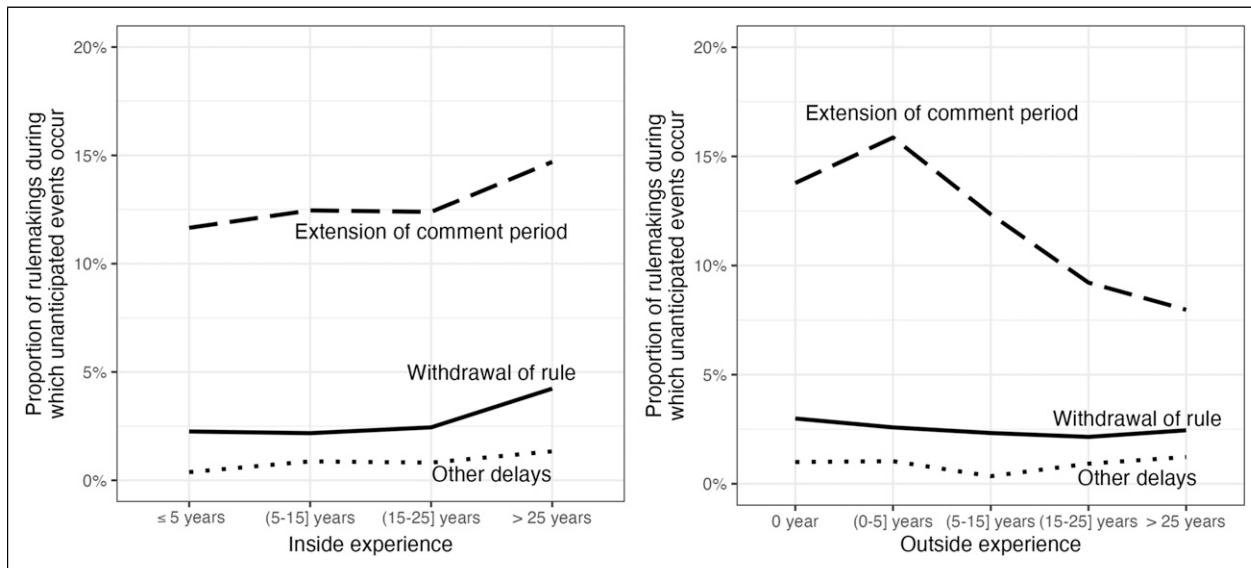


Figure 3. Rulemakers’ professional experience and unanticipated rulemaking events.

Table 3. Logit Regressions of Rulemakers’ Professional Experience and Unanticipated Rulemaking Events.

	Dependent variable			
	Unanticipated event during rule life-cycle			
	(1)	(2)	(3)	(4)
Max years of inside experience	0.0004 (0.008)	-0.003 (0.010)		
Max years of outside experience	-0.019* (0.008)	-0.022* (0.010)		
Proportion of rulemakers with 10+ years of inside experience			-0.171 (0.132)	-0.094 (0.178)
Proportion of rulemakers with 10+ years of outside experience			-0.533* (0.164)	-0.692* (0.209)
Number of rulemakers	0.432* (0.081)	0.432* (0.101)	0.379* (0.074)	0.367* (0.094)
Number of doctoral degree holders		-0.293 (0.210)		-0.223 (0.208)
OIRA review		1.152* (0.177)		1.114* (0.176)
Economically significant		0.844* (0.262)		0.907* (0.263)
Number of public comments		0.004 (0.003)		0.004 (0.003)
Constant	-1.914* (0.705)	8.466* (1.174)	-1.745* (0.698)	8.380* (1.146)
Agency FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	3,356	2,046	3,356	2,046
R ²	0.187	0.282	0.191	0.289
χ ²	379.743*	370.559*	387.905*	380.373*
p-value of F-test of inside > outside	0.02*	0.11	0.03*	0.01*

Note. Standard errors clustered by rulemaker or rulemaker combination. *p < 0.05.

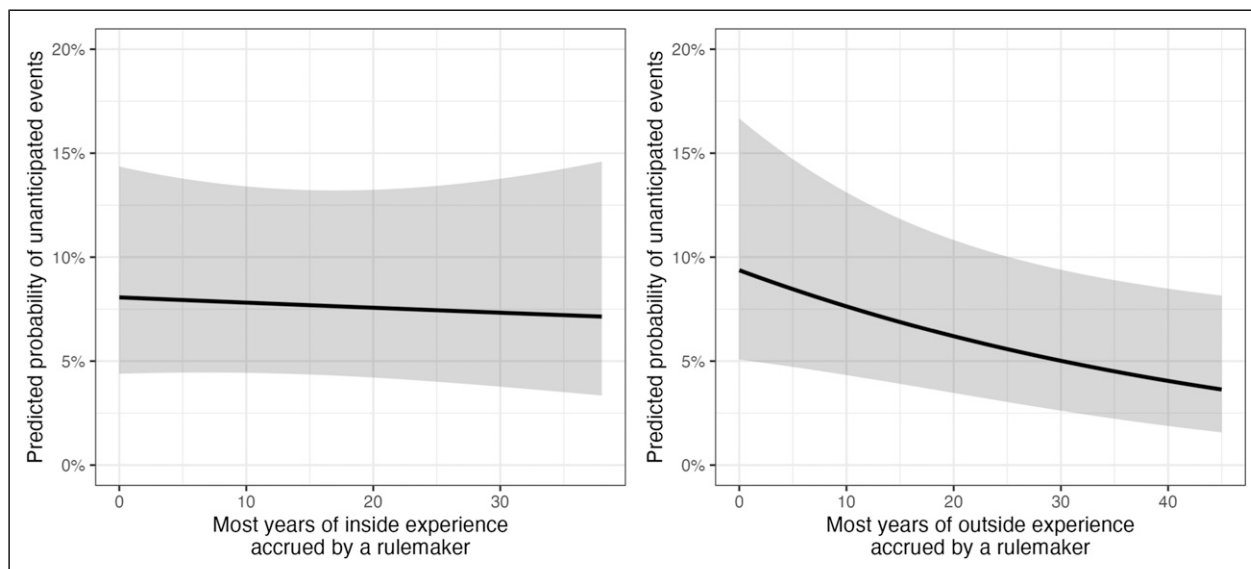


Figure 4. Rulemakers’ professional experience and the predicted probability of unanticipated rulemaking events.

unanticipated rulemaking events. As before, Models 1 and 2 measure rulemakers’ inside and outside experience with the “bag of experience” approach while Models 3 and 4 adopt the person-counting approach. Models 1 and 3 only control for the total number of rulemakers in charge while Models 2 and 4 also control for whether proposed rules are subject to OIRA reviews, are economically significant, and the number of public comments received along with rulemakers’ doctoral degrees. Like the previous regressions, all models control for fixed effects for the agency and the year of rule initiation and cluster the standard errors by rulemaker or combination of rulemakers.

The models indicate that rulemakers’ work experience accrued inside the federal government is not a significant predictor of unanticipated events. Outside experience, in contrast, is a significant negative predictor—with or without rulemaker education and the three rule characteristics as control variables, and whether experience is measured under a “bag of experience” approach or a person-counting approach. The controls themselves obtain stable and sensible coefficients. The number of rulemakers in charge, OIRA review, and the classification of proposed rules as economically significant are positive predictors of unanticipated events, while the number of public comments received is a positive but insignificant predictor. Rulemakers’ possession of doctorates is not a significant predictor either.

In [Figure 4](#), I graph the predicted probability of unanticipated events computed based on Model 2 in relation to rulemakers’ inside and outside experience, respectively. As in [Figure 2](#), all other variables are held at their modes or means. The plots highlight the differential association between the two types of experience and unanticipated events: increasing amounts of outside experience correspond to major decreases in the likelihood of unanticipated events while inside experience corresponds to a slight decrease at most.

The supplemental analysis where I replace agency contacts with plausible rulemaking participants agency-wide ([Appendix B.2](#)) presents mixed support for these results ([Table A-5](#)). Under the “bag of experience” approach and when controlling for officials’ doctoral degrees and rule characteristics, agencies’ maximum amount of outside experience is a significant negative predictor of unanticipated rulemaking events, but so is maximum inside experience; in fact, the magnitude of the effect of inside experience is greater (Model 2). In other words, the most seasoned agency veterans’ time in office is associated with larger reductions in the likelihood of unanticipated events than the amount of outside experience possessed by the most outside-experienced official, in contrast with the analysis based on contact persons. Under the person-counting approach, the two types of analysis yield more consistent findings, with the proportion of officials with 10 or more years of outside experience associated with a greater reduction in the likelihood of unanticipated events than the proportion of officials with 10 or more years of inside experience (Model 4). Nevertheless, outside experience is only significant when the model includes education and rule characteristics.

Matching Analysis

Deliberate selection by rulemakers to lead certain rulemakings on account of rule characteristics—by their own volition or that of their agency supervisors—creates confounding by these rule characteristics on any rulemaker effect on rulemaking outcomes. To mitigate bias stemming from strategic selection of rulemakings into the treatment of rulemaking experience without the benefit of random assignment, I perform matching analysis. Here, I first preprocess the data via exact matching and then analyze the

relation between rulemaker experience and rulemaking outcomes in the pruned sample consisting of exact matches only. I identify groups of rulemakings that are identical on all selected observable characteristics but differ in the professional experience possessed by the rulemakers in charge. Since the analysis above shows that outside experience but not inside experience is significantly related to rulemaking outcomes, I conduct matching to achieve balance between a treatment group and a control group demarcated by rulemakers' outside experience in particular—rulemakings led by rulemakers with outside experience and those led by rulemakers without it.

Under this approach, rulemakers' inside experience becomes simply one of the covariates on which to match rulemakings, along with other observable rule characteristics. These include the control variables I have used so far in regressions based on the full pre-matching sample—the total number of rulemakers in charge, doctoral degrees they hold, OIRA review, the economic significance determination, and the number of public comments received—as well as the rulemaking agency and the year of rulemaking initiation (the fixed effects controlled for in regressions above). Since the treatment variable must be binary, I adopt a binary measure that denotes whether any rulemaker leading a rulemaking has at least ten years of outside experience.²⁸

In constructing inside experience as a covariate for matching, I aim for a compromise between achieving covariate balance between the two groups and preserving data for statistical power. My solution is to coarsen inside experience into the same regions as in Figures 1 and 3. I keep the other covariates in their original form: fully continuous. Exact matching demands that treated units and control units have identical values on the complete combination of matching covariates to be paired up. From the original

3,356 rulemakings proposed by the top-30 agencies, 499 proposed by 5 agencies remain in the post-matching sample (see Appendix A.1).

Patterns in the post-matching sample affirm the relation documented so far between outside experience and rulemaking outcomes. Among these 499 rulemakings, 82% of those led by rulemakers with outside experience successfully reached finalization and unanticipated events took place on 3%. In contrast, 66% of rulemakings led by rulemakers without outside experience were finalized and unanticipated events took place on 10%. Figure 5 depicts the rule finalization rate in correspondence with inside and outside experience. Different from Figures 1 and 3, however, for outside experience, I omit the formerly highest category of > 25 years because that category only contains 4 observations in the post-matching sample. Regarding inside experience, the pattern of “first up, then down” seen in the full sample persists in the post-matching sample, with 15–25 years of inside experience associated with the highest finalization rate. The relation between outside experience and the finalization rate, however, is monotonically positive aside from a decline from no experience to no more than five years. The relation between unanticipated events and rulemaker experience in the post-matching sample largely resembles the patterns seen in the full sample, as shown in Figure 6. The two types of experience's divergent relations with extensions of the comment period stand out.

I estimate regressions similar to those shown in Tables 2 and 3 based on the post-matching sample. For simplicity, I show regressions for finalization and for unanticipated events together in Table 4. Unlike previous analysis, there is now one central treatment variable—the binary indicator of whether each rulemaking is led by at least one rulemaker with ten years or more of outside experience. Models 1 and

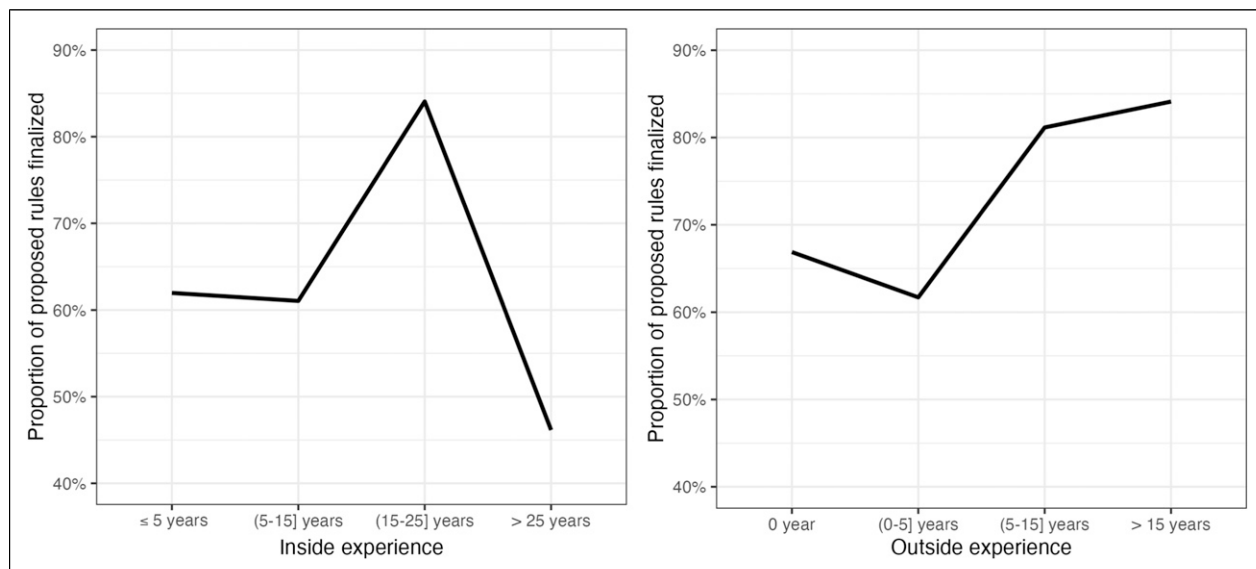


Figure 5. Rulemakers' professional experience and rule finalization in the post-matching sample.

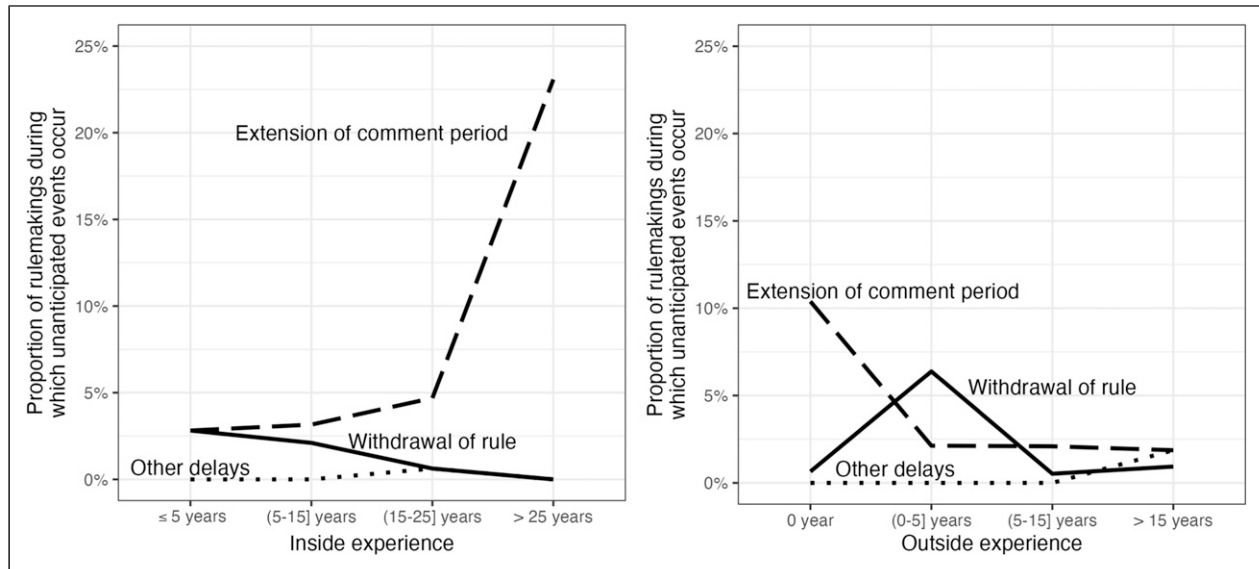


Figure 6. Rulemakers’ professional experience and unanticipated rulemaking events in the post-matching sample.

Table 4. Logit Regressions of Rulemakers’ Professional Experience and Rule Finalization Based on the Post-matching Sample.

	Dependent variable			
	Final rule promulgated		Unanticipated event during rule life-cycle	
	(1)	(2)	(3)	(4)
Any rulemaker with 10+ years of outside experience	0.937* (0.291)	0.979* (0.290)	-1.073 (0.708)	-1.299* (0.612)
(5, 15] years of inside experience		0.291 (0.731)		-0.229 (1.026)
(15, 25] years of inside experience		0.892 (0.788)		0.492 (1.127)
> 25 years of inside experience		-0.311 (1.373)		0.996 (1.378)
Number of doctoral degree holders		1.338 (0.986)		-9.462* (2.841)
Number of rulemakers		-0.204 (0.846)		0.765 (1.168)
OIRA review		-0.188 (1.360)		1.694 (1.573)
Economically significant		-9.148* (1.661)		17.467* (1.945)
Number of public comments		127.228* (24.900)		-206.226* (28.465)
Constant	0.811 (1.232)	0.641 (1.431)	-11.701* (2.065)	-14.302* (2.230)
Agency FE	Yes	Yes	Yes	Yes
Proposal year FE	Yes	Yes	Yes	Yes
Observations	499	499	499	499
R ²	0.253	0.298	0.330	0.421
χ ²	91.866*	109.819*	54.098*	81.494*

Note. Weighted by matching weights computed based on subclass membership. Standard errors clustered by rulemaker or rulemaker combination. *p < 0.05.

3 examine the bivariate relation between it and rulemaking outcomes, controlling only for fixed effects for the agency and the year of initiation. Models 2 and 4 also contain the control variables, which also served as covariates for matching; among them is the proportion of rulemakers with significant inside experience. Consistent with previous results, these regressions show that any rulemakers' possession of at least ten years of outside experience is significantly associated with a greater likelihood for a proposed rule to be finalized and a lower likelihood for unanticipated events to occur.

Conclusion

The fostering of expertise and protection from political pressure are central ethos of civil service. Both values are compatible with long government careers that allow civil servants to learn on the job, advance on merit, and ultimately implement the law effectively by making good regulatory policy. At the same time, the federal government has emphasized recruiting talent from outside to improve the civil service with expertise and fresh ideas from industry and civil society (Alonso & Lewis, 2001). Merit-based career competition between the bureaucracy's own products and fresh blood from outside is also consistent with civil service reform. In this paper, I examine the comparative value of inside and outside experience on regulatory policymaking, adopting the specific angle of rulemaking efficiency. To measure efficiency, I use two metrics: the likelihood of proposed rules to lead to final rules in the notice-and-comment rulemaking process and the occurrence of three types of unanticipated rulemaking events.

The analysis shows that rulemakers' outside experience is associated with a higher likelihood for proposed rules to reach finalization and a lower likelihood of unanticipated events. In contrast, inside experience is largely unrelated to these rulemaking outcomes. To mitigate selection bias from the assignment of rulemakers onto rulemakings due to innate difficulty, which could be responsible for the observed effect of outside experience, I match rules that are identical on three observable characteristics along with rulemakers' inside experience and conduct post-matching analysis on the pruned sample. This analysis produces findings consistent with the pre-matching analysis. Matching notwithstanding, no causal inference can be drawn from these findings of association. For causal inference of the experience effect on rulemaking outcomes, it is conceivable for future research to identify limited cases in which federal agencies randomly assign rulemakers in charge onto rulemakings without regard to innate rule traits, although I have not managed to identify such cases.

So, why are these findings important? Most immediately, they strongly suggest that bureaucrats' experience may well play a systematic part in shaping rulemaking outcomes and the efficient deployment of agency resources. If rulemaking efficiency is a goal to strive for—which is not to say it is the

only or even the main goal (another desirable objective is the active solicitation and careful consideration of a multiplicity of stakeholder viewpoints, which tends to lower efficiency)—then relying on the right types of rulemakers may help. The data suggest that externally mobile and ambitious bureaucrats may be especially instrumental in enhancing rulemaking efficiency. By attracting diagonally mobile policy professionals, presidents, agency heads, and Congress may be able to expedite regulatory policymaking and increase its volume simply by encouraging bureaucratic appointments from outside the civil service. This adds a career civil service component to the oversight-via-appointment toolbox available to elected officials, a body of research that has typically focused on political appointees (e.g., Lewis, 2011).

This study also sheds new light on some stereotyped characterizations of the Washington bureaucracy tailored to suit some political narrative. The bureaucracy has often been caricatured as the “deep state,” suggesting unaccountability to the electorate and its elected representatives.²⁹ On other occasions, it has attracted complaints of inadequate performance incentives and job security available to few other sectors (e.g., Frank & Lewis, 2004). To the extent that rulemakers' inside experience and outside experience have divergent causal effects on rulemaking efficiency, these findings lend more credence to the imagery of the unmotivating bureaucratic sinecure than to that of the runaway administrative machinery with a private agenda. Contrary to the “deep state” thesis, regulatory agencies appear able to—and routinely do—increase their policy capacity by enlisting the new information, practical expertise, and proximity to constituencies that outside experts bring. The career mobility of bureaucrats ought to be studied as an important facet of the informal networks that connect state and society and bridge different levels of government in federalism, with salutary effects on policymaking.

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Supplemental Material

Supplemental material for this article is available online.

Notes

1. For a literature review on the value of work experience for worker performance, see [Quiñones et al. \(1995\)](#). It highlights the importance of task-specific work experience, applicable to the highly specific demands of agency rulemaking.
2. In [Appendix B.1](#), I perform supplemental analysis that examines the previously used measure of time to rule finalization. It shows that rulemaker experience is not a significant predictor of rulemaking speed.
3. Many of these unanticipated events may well be strategic decisions by agency heads wishing to “slow-roll” rulemaking to wait out a hostile political environment ([Potter, 2017](#)), but many others are likely genuine setbacks in the rulemaking process. Regardless, from the perspective of rulemakers, who are subordinates of the more politically nimble agency heads, it is reasonable to characterize these unanticipated events as mostly not driven by political interest.
4. Competitive Service and Excepted Service both require merit-based competition for hiring. In Competitive Service hiring, agencies use an exam to select candidates who possess relevant knowledge and expertise while Excepted Service hiring follows more customized and varied processes.
5. <https://sorghumgrowers.com/magazine/meet-francie-tolle/>.
6. <https://www.linkedin.com/in/rodger-boyd-76686844/details/experience/>.
7. Indeed, analysts of federal personnel are more worried about civil servants’ decisions to quit their government jobs voluntarily than their prospects of being laid off (e.g., [Cho & Lewis, 2012](#); [Lee et al., 2018](#)).
8. There is also scant evidence that merit-based pay increases meaningfully motivate career bureaucrats ([Daley, 1987](#); [Pearce & Perry, 1983](#)).
9. Studying bureaucrats in the Office of the U.S. Trade Representative with career ties to industry, [Lee and You \(2023\)](#) show that companies reduce their lobbying activity when they have “one of their own” in office. This may partially be explained by the policy favors that rulemakers do in government for their affiliated companies to maintain good relations with them, which obviates the need for intense lobbying.
10. Though less conceivable, endogenous selection can also contribute to a positive relation between the two, especially if rulemakers can decide for themselves on what rules to write and which ones to take to the finish line. Rulemakers with strong knowledge of one kind or another, learned from inside or outside employment, can use that knowledge to deliberately initiate or lead rulemakings that they judge to be winners. A payoff for doing so is straightforward: being seen as a prolific and regulatory policymaker by supervisors in the bureaucracy or by interested parties outside the government is likely good for career advancement ([Teodoro, 2011](#)).
11. <https://www.govinfo.gov/bulkdata/FR/>.
12. From the full set of rulemakings, I drop those whose outcomes likely have not had time to manifest themselves yet and therefore be recorded in the *FR* data. In light of an existing finding that most rulemakings that ever get finalized do so within 2 years ([Yackee & Yackee, 2010](#)), I drop rulemakings started on or after January 1, 2021. From this universe of rulemakings defined by the *FR*, I study rulemakings by the top-30 agencies by the volume of notice-and-comment rulemaking, excluding the Department of Defense (DoD personnel is typically redacted). Agencies outside the top-30 cover too few rulemakings (fewer than 30 each), severely limiting variation in rulemakers within agencies. I list the agencies in my data in [Appendix A.1](#).
13. <https://www.reginfo.gov/public/do/eAgendaXmlReport>.
14. OIRA simply instructs agencies to display the name and phone number of at least one person “knowledgeable about the rulemaking action” (https://www.reginfo.gov/public/jsp/eAgenda/StaticContent/201704/Preamble_8888.html).
15. GS-14 and GS-15, the two highest pay grades on the General Schedule, are reserved for highly specialized, valued, and usually supervisory positions. Data source: U.S. Equal Employment Opportunity Commission (<https://www.eeoc.gov/federal-sector/reports/table-3b-government-wide-employment-workers-gs-grades-1>).
16. Data source: *United States Government Policy and Supporting Positions* (“Plum Book”).
17. Like GS-14 and GS-15, GS-13 positions are reserved for top-level supervisors and professionals. Starting at GS-13, positions become classified as “Career Competitive,” meaning that openings must be advertised publicly for all qualified candidates to apply, while promotions to grades below GS-13 can be made automatically without public competition.
18. <https://www.nfwf.org/media-center/press-releases/holly-bamford-join-national-fish-and-wildlife-foundation-chief-conservation-officer>.
19. <https://www.linkedin.com/in/keithligon/>.
20. Both these approaches to measuring rulemaker experience under teamwork clearly require assumptions, the 10-year assumption especially arbitrary. In response, I perform multiple types of supplemental analysis. In [Appendices B.3 and B.4](#), I use the average and total amounts of inside and outside experience that rulemakers possess, respectively, as the main predictors. In [Appendix B.5](#), I limit the analysis to rulemakings led by a single rulemaker, a subset that permits the more straightforward measurement of inside and outside experience that one individual has. All yield results consistent with the main findings, as does the aforementioned analysis based on an alternative age assumption for the start of careers ([Appendix B.6](#)). Below, I discuss one more robustness check still, where I vary the amount of experience that “counts” in the person-counting approach ([Appendix B.7](#)).
21. Why 27? First, typical new law school graduates are in their mid- to late-20s, as are typical graduates of other graduate or professional degrees. This serves as a basic ballpark for the age assumption for starting careers. Second, the OPM data does not

display employees' age of hire exactly (e.g., "25–29" and "30–34"), which makes slightly different age assumptions inconsequential. I adopt 27, the middle point of the 25–29 age category. Still, it is important to empirically demonstrate the validity of this assumption. I attempt to do so in [Appendix A.2](#), where I randomly sample 150 rulemakers, search the Internet for their professional resumes and biographies to measure their work experience outside the federal government as accurately as possible, and then compare their biographically measured outside experience against that inferred based on the age-27 assumption for the start of careers. For 70 of the 150 sampled rulemakers, biographical information leads to conclusive measurement of outside experience. For 2/3 of these 70 rulemakers, the difference between inferred and observed outside experience is 3 years or less; that difference is under 5 years for nearly 90% of these rulemakers. The modal difference is zero, corresponding to complete accuracy of the age-27 assumption. By failing to obtain sufficient biographical information on the other 80 sampled rulemakers, this exercise also demonstrates the value of estimating—even though somewhat coarsely—all rulemakers' outside experience via a simplifying age assumption: it allows me to examine the experience of all rulemakers rather than the minority with detailed biographies available. See [Appendix A.2](#) for more details. Acknowledging the inevitable roughness of this measure, however, I conduct a variety of robustness checks referenced throughout the study in which experience is counted differently in some fashion; chief among these is [Appendix B.6](#), in which I substitute the age-27 assumption itself with 23—the typical age of a new college graduate—so that rulemakers are assumed to start their careers when turning 23. All findings are robust to this alternative age assumption.

22. In some cases, the *UA* merely asks readers to contact the agency with inquiries without identifying specific people. Other times, for one reason or another (typically the lack of a fully spelled-out first name when a multiplicity of plausible matches demands it), I cannot conclusively find the right individual in the OPM data. Virtually the same portion of rulemakings reached finalization within the sample with contact persons identified (61.4%) as outside the sample (62.7%), however, suggesting that the identifiability of agency contacts is unlikely to be a consequential source of bias (it is obviously impossible to examine the effects of rulemaker experience on rulemaking outcomes outside the sample).
23. I use the first two as separate controls even though economically significant rules are among those reviewed by OIRA. This is because most OIRA-reviewed significant rules are not *economically* significant, and OIRA reviews some non-significant rules as well. The overlap between the two variables is thus quite modest.
24. <https://www.reginfo.gov/public/do/XMLReportList>.
25. See [Appendix A.1](#) for the agencies with public comments available. This missing data problem impacts the core findings: when estimated on rulemakings without available comments, the same regressions produce null effects for both inside and

outside experience as predictors of both rule finalization and unanticipated events. I cannot ascertain with any certainty the nature of this missingness-not-at-random problem; speculatively, for agencies that pay less attention to public comments (and are therefore less interested in transparently releasing them), how experienced rulemakers are in navigating the rulemaking process, especially managing constituent opinions, may be less important for rulemaking outcomes.

26. In [Appendix B.7](#), I vary the threshold from 5 to 30 years of experience in a battery of identically configured regressions. These regressions show that the proportion of rulemakers with "enough" outside experience has a significant positive effect on rule finalization when the threshold is 10 or 20 years, but not 5 or 30 years. For predicting unanticipated events, 10 years is the only threshold that corresponds to a significant negative effect.
27. Incidentally but as expected, unanticipated events are rarer for rulemakings that do reach finalization; they occur during the life-cycles of just 8% of these successful rulemakings.
28. As with the pre-matching full-sample regressions, in [Appendix B.7](#) I vary this threshold for outside experience to compare the results. This analysis shows that outside experience exceeding either 5 or 10 years is positively related to finalization and negatively related to anticipated events. Whether outside experience crosses a threshold of 20 years, however, has a statistically insignificant effect on these outcomes (the number of comments is dropped in this scenario due to having no variation, while a 30-year threshold keeps too few observations for matching entirely).
29. For a deep parse of the "deep state" expression, see [Michaels \(2017\)](#).

References

- Alonso, P., & Lewis, G. B. (2001). Public service motivation and job performance: Evidence from the federal sector. *American Review of Public Administration*, 31(4), 363–380. <https://doi.org/10.1177/02750740122064992>.
- Bolton, A. (2022). Gridlock, bureaucratic control, and nonstatutory policymaking in congress. *American Journal of Political Science*, 66(1), 238–254. <https://doi.org/10.1111/ajps.12621>
- Carpenter, D., Judge-Lord, D., Libgober, B., & Rashin, S. (2020). Data and methods for analyzing special interest influence in rulemaking. *Interest Groups & Advocacy*, 9(3), 425–435. <https://doi.org/10.1057/s41309-020-00094-w>
- Cho, Y. J., & Lewis, G. B. (2012). Turnover intention and turnover behavior: Implications for retaining federal employees. *Review of Public Personnel Administration*, 32(1), 4–23. <https://doi.org/10.1177/0734371x11408701>
- Daley, D. (1987). Merit pay enters with a whimper: The initial federal civil service reform experience. *Review of Public Personnel Administration*, 7(2), 72–79. <https://doi.org/10.1177/0734371x8700700206>
- Doherty, K. M., Lewis, D. E., & Limbocker, S. (2019). Presidential control and turnover in regulatory personnel. *Administration and Society*, 51(10), 1606–1630. <https://doi.org/10.1177/0095399719875458>

- Dwidar, M. A. (2022). Diverse lobbying coalitions and influence in notice-and-comment rulemaking. *Policy Studies Journal*, 50(1), 199–240. <https://doi.org/10.1111/psj.12431>
- Frank, S. A., & Lewis, G. B. (2004). Government employees: Working hard or hardly working? *The American Review of Public Administration*, 34(1), 36–51. <https://doi.org/10.1177/0275074003258823>
- Gailmard, S., & Patty, J. W. (2013). *Learning while governing: Expertise and accountability in the executive branch*. University of Chicago Press.
- Golden, M. M. (1998). Interest groups in the rule-making process: Who participates? Whose voices get heard? *Journal of Public Administration Research and Theory*, 8(2), 245–270. <https://doi.org/10.1093/oxfordjournals.jpart.a024380>
- Jennings, J., & Nagel, J. C. (2020). *Federal workforce statistics sources: OPM and OMB*. Congressional Research Service.
- Lee, K., & You, H. Y. (2023). Bureaucratic revolving doors and interest group participation in policy making. *Journal of Politics*, 85(2), 701–717. <https://doi.org/10.1086/722340>
- Lee, S., Fernandez, S., & Chang, C. (2018). Job scarcity and voluntary turnover in the us federal bureaucracy. *Public Personnel Management*, 47(1), 3–25. <https://doi.org/10.1177/0091026017732798>
- Lewis, D. E. (2011). Presidential appointments and personnel. *Annual Review of Political Science*, 14(1), 47–66. <https://doi.org/10.1146/annurev-polisci-042009-121225>
- Lowande, K. (2018). Who polices the administrative state? *American Political Science Review*, 112(4), 874–890. <https://doi.org/10.1017/s0003055418000497>
- McCubbins, M. D., Noll, R. G., & Weingast, B. R. (1987). Administrative procedures as instruments of political control. *Journal of Law, Economics, and Organization*, 3(2), 243–277. <https://doi.org/10.1093/oxfordjournals.jleo.a036930>
- McCubbins, M. D., Noll, R. G., & Weingast, B. R. (1999). The political origins of the Administrative Procedure Act. *Journal of Law, Economics, and Organization*, 15(1), 180–217. <https://doi.org/10.1093/jleo/15.1.180>
- McCubbins, M. D., & Schwartz, T. (1984). Congressional oversight overlooked: Police patrols versus fire alarms. *American Journal of Political Science*, 28(1), 165–179. <https://doi.org/10.2307/2110792>
- McGarity, T. O. (1991). Some thoughts on deossifying the rule-making process. *Duke Law Journal*, 41(6), 1385. <https://doi.org/10.2307/1372818>
- McGrath, R. J. (2013). Congressional oversight hearings and policy control. *Legislative Studies Quarterly*, 38(3), 349–376. <https://doi.org/10.1111/lsq.12018>
- Michaels, J. D. (2017). The American deep state. *The Notre Dame Law Review*, 93(4), 1653–1670.
- Moe, T. M. (1985). The politicized presidency. *The new direction in American politics*, 235(238), 244–263.
- Nelson, D., & Yackee, S. W. (2012). Lobbying coalitions and government policy change: An analysis of federal agency rulemaking. *Journal of Politics*, 74(2), 339–353. <https://doi.org/10.1017/s0022381611001599>
- Pearce, J. L., & Perry, J. L. (1983). *Federal merit pay: A longitudinal analysis* (pp. 315–325). Public administration review.
- Pierce, R. J. (1995). Seven ways to deossify agency rulemaking. *Administrative Law Review*, 47(winter), 59–93.
- Potter, R. A. (2017). Slow-rolling, fast-tracking, and the pace of bureaucratic decisions in rulemaking. *The Journal of Politics*, 79(3), 841–855. <https://doi.org/10.1086/690614>
- Potter, R. A. (2019). *Bending the rules: Procedural politicking in the bureaucracy*. University of Chicago Press.
- Quiñones, M. A., Ford, J. K., & Teachout, M. S. (1995). The relationship between work experience and job performance: A conceptual and meta-analytic review. *Personnel Psychology*, 48(4), 887–910. <https://doi.org/10.1111/j.1744-6570.1995.tb01785.x>
- Ritchie, M. N. (2018). Back-channel representation: A study of the strategic communication of senators with the US Department of Labor. *Journal of Politics*, 80(1), 240–253. <https://doi.org/10.1086/694395>
- Salisbury, R. H., & Shepsle, K. A. (1981). US congressman as enterprise. *Legislative Studies Quarterly*, 6(4), 559–576. <https://doi.org/10.2307/439385>
- Singer-Vine, J. (2017). *We're sharing a vast trove of federal payroll records*. BuzzFeed News.
- Teodoro, M. P. (2011). *Bureaucratic ambition: Careers, motives, and the innovative administrator*. JHU Press.
- Yackee, J. W., & Yackee, S. W. (2010). Administrative procedures and bureaucratic performance: Is federal rule-making “ossified”. *Journal of Public Administration Research and Theory*, 20(2), 261–282. <https://doi.org/10.1093/jopart/mup011>
- Yackee, S. W. (2006). Sweet-talking the fourth branch: The influence of interest group comments on federal agency rulemaking. *Journal of Public Administration Research and Theory*, 16(1), 103–124. <https://doi.org/10.1093/jopart/mui042>
- Yackee, S. W. (2012). The politics of ex parte lobbying: Pre-proposal agenda building and blocking during agency rulemaking. *Journal of Public Administration Research and Theory*, 22(2), 373–393. <https://doi.org/10.1093/jopart/mur061>