

Institutional Buffers and Administrative Capacity

Christopher A. Cotropia* & David L. Schwartz**

Abstract

For decades, scholars and policymakers have debated whether unions serve as guardians of worker welfare or obstacles to effective governance. This Article provides the first empirical evidence to resolve this debate by examining how collective bargaining protections shape employee performance when job security is threatened. Drawing on a uniquely granular dataset of near real-time employee activity from the U.S. Patent and Trademark Office, we employ a difference-in-difference methodology to isolate the causal effect of differences in labor protections on employee performance. Between January and April 2025, employees lacking strong union protections experienced a 35% productivity decline following the Department of Government Efficiency's (DOGE) reform campaign, while unionized patent examiners maintained stable output. Our findings challenge the assumption that public-sector unions impede efficiency. Far from hindering agency function, the job security and workplace stability provided by collective bargaining served as critical institutional stabilizers during workforce disruption.

These results have gained urgent policy relevance. On August 28, 2025, President Trump issued an executive order targeting the Patent Office Professional Association (POPA), the union representing patent examiners. The order, currently subject to litigation challenging its legality, purports to eliminate the protections that our analysis identifies as stabilizing. Consistent with the Article's central mechanism, our data collection indicates that examiner productivity began to decline after that order, even as litigation proceeds.

More broadly, the findings reframe a familiar debate: in settings where employee output is measurable and mission-critical, union-negotiated job security and workplace stability can sustain, rather than hinder, governmental performance. Our within-agency research design offers a replicable framework for evaluating federal workforce restructuring, with immediate relevance for debates about civil service protections, telework policy, and the role of public-sector unions in preserving administrative capacity.

* David Weaver Research Professor of Law at George Washington University Law School.

** William G. and Virginia K. Karnes Professor of Law at Northwestern Pritzker School of Law.

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Introduction

For decades, scholars and policymakers have debated whether unions serve as guardians of worker welfare or obstacles to effective governance. This Article provides the first empirical evidence to resolve this debate. Between January and April 2025, when the Department of Government Efficiency (DOGE) launched an unprecedented campaign to restructure the federal workforce, a natural experiment at the U.S. Patent and Trademark Office revealed striking differences: employees lacking union protections experienced a 35% productivity decline, while unionized patent examiners maintained stable output. These findings have gained urgent relevance following President Trump's August 28, 2025 executive order targeting patent examiner unions, currently subject to litigation challenging its legality. Our continued data collection reveals that examiner productivity has already begun to decline following the order, validating our findings in real time.

Drawing on a natural experiment at the U.S. Patent and Trademark Office (USPTO), we examine how different categories of federal employees responded to DOGE's early interventions. The USPTO provides a unique opportunity for analysis: it houses two groups of employees performing related work under markedly different employment conditions. Patent examiners enjoy job security through a collective bargaining agreement and were permitted to continue working remotely; non-examiner patent staff, by contrast, lacked both union protections and telework flexibility. Crucially, the USPTO also publishes one of the most detailed and frequently updated operational datasets in the federal government—near real-time, micro-level records of every examination and administrative action. This transparency allows us to precisely measure employee productivity before and after the DOGE intervention. The within-agency contrast in collective bargaining protection provides leverage to identify how job security shapes performance under threat. For regulated parties and the public, these behavioral responses are not abstract: when job insecurity reduces agency output, the costs show up as slower processing, delayed decisions, and degraded service delivery.

While President Trump's first-term rhetoric about “draining the swamp”¹ appeared to be largely symbolic, his second term marked a more direct effort to reform the federal bureaucracy.² DOGE's early actions made clear that this was not typical administrative reform. The initiative bypassed rulemaking and stakeholder engagement in favor of sweeping personnel actions and institutional realignment. DOGE's strategy placed unusual stress on the legal and procedural safeguards that traditionally insulate agencies from political disruption. While the full scope of this approach remained unclear in the early days, the tone and rhetoric surrounding DOGE created a pervasive sense of instability—one that, for many civil servants, translated into urgent questions about job security, working conditions, and professional survival.³ DOGE's rollout created an unusually sharp test of institutional buffering: it exposed some USPTO employees to acute job insecurity while leaving others largely insulated by collective bargaining. For our purposes, the key feature of this environment was not any particular policy change, but the credible threat of job insecurity—

¹ See James P. Pfiffner, *President Trump and the Shallow State: Disloyalty at the Highest Levels*, 52 PRESIDENTIAL STUDIES Q. 487, 592 (2022) (“Despite President Trump's complaints about the deep state, it was actually his own presidential appointees in the shallow state who delayed or thwarted his expressed wishes.”).

² For a detailed discussion of the formation and timeline relating to DOGE, see *infra*, Part I.

³ Jess Bidgood, *Making Sense of DOGE Cuts*, N.Y. TIMES (Mar. 17, 2025) (“Elon Musk has promised to take a chain saw to the federal government with his Department of Government Efficiency. It has been difficult, though, to figure out exactly how many jobs have been, or will be, cut.”).

and the unequal ability of different employee groups to rely on collective bargaining protections in responding to it.

Among the most immediate and contentious changes was DOGE's directive that all federal employees return to in-person work five days a week, effectively ending pandemic-era telework arrangements. This mandate was applied unevenly across agencies and employee categories. At the USPTO, unionized patent examiners—protected by the collective bargaining agreement negotiated by the Patent Office Professional Association (POPA)—were exempted from the in-person requirement and allowed to continue working remotely.⁴ In contrast, non-examiner patent examining staff, who lacked strong union protections, were required to report to physical offices.⁵ This divergence in treatment mapped onto differences in institutional protection: examiners' collective bargaining agreement insulated them from the most destabilizing aspects of the campaign, while staff faced direct exposure. Supporters saw these moves as necessary to restore accountability;⁶ critics viewed them as destabilizing attacks on the professional civil service.⁷

This Article empirically examines whether collective bargaining protections preserve employee performance when job security is threatened, and in doing so, contributes to the growing literature on administrative capacity⁸ and it adds further evidence to the recent debate about the proper

⁴ See Part II, *infra* (detailing literature on employee response to layoff and reorganization threats).

⁵ See “How Trump’s ‘Return to in-person work’ order affects the USPTO”, (Jan. 24, 2025) (available at <http://blog.oppedahl.com/how-trumps-return-to-in-person-work-order-affects-the-uspto/>) (reproducing an email from then Commissioner of Patents Vaishali Udupa dated January 24, 2025 explaining that “[i]n accordance with President Trump’s Presidential Memorandum, Return to In-Person Work, and corresponding Guidance from the Office of Personnel Management, the USPTO no longer permits regular and recurring telework. Employees should work full time at their respective worksites/duty stations” but also noting that “[t]his memorandum does not supersede existing collective bargaining agreements”).

⁶ Kyle Peterson, *DOGE’s Challenge is Gargantuan*, WALL STREET J. (Jan. 20, 2025) (stating that “leading on federal efficiency might include telling the truth about bad economic populism, even if it upsets the file-folder lobby.”); Belle Linn, *These IT Companies Say DOGE Is Good For Business*, WALL STREET J. (May 22, 2025) (“For smaller government IT contractors ... the cost-cutting agenda of the Trump administration offers an opportunity to generate more business....”).

⁷ Yahya Abou-Ghazala, Curt Devine, Majlie de Puy Kamp, & Rene Marsh, ‘*Second American Revolution*’: The Team Behind DOGE’s Government Overhaul, CNN (Feb. 7, 2025) (available at <https://www.cnn.com/2025/02/07/politics/musk-doge-staffers-federal-government-downsizing-invs>) (“No information has been provided to Congress or the public as to who has been formally hired under DOGE, under what authority or regulations DOGE is operating, or how DOGE is vetting and monitoring its staff and representatives before providing them seemingly unfettered access to classified materials and Americans’ personal information.”); Eileen Sullivan, *For Federal Workers, Musk’s Chain Saw Still Reverberates*, N.Y. TIMES (May 29, 2025) (“Employees depart without any planning for who will take over their roles....Current and former federal workers describe a government that in some cases remains paralyzed with uncertainty, waiting for direction from senior officials....Morale is at an all-time low....Those who still have jobs are in survival mode”); Hannah Nathanson, *DOGE Vowed To Make Government More ‘Efficient’ — but It’s Doing the Opposite*, WASHINGTON POST (June 2, 2025) (“layers of new red tape are plaguing federal staffers throughout the government under the second Trump administration, stymieing work and delaying simple transactions, according to interviews with more than three dozen federal workers across 19 agencies and records obtained by The Washington Post. Many of the new hurdles, federal workers said, stem from changes imposed by the U.S. DOGE Service, Elon Musk’s cost-cutting team, which burst into government promising to eradicate waste, fraud and abuse and trim staff and spending.”).

⁸ See, e.g., Nichola R. Bednar, *Presidential Control and Administrative Capacity*, 77 STAN. L. REV. 823, 826-27, 921-22 (2025) (noting in a postscript that “[t]he early days of [Trump’s second term] presidency have highlighted the tension between presidential control and administrative capacity”).

relationship between the President and the administrative state⁹ It uses the USPTO setting to study a natural institutional contrast between two categories of employees: patent examiners, who are covered by a collective bargaining agreement that provides substantial job protections, and non-examiner patent examining staff, who are not. This distinction enables a difference-in-differences research design¹⁰ that isolates the causal effect of a perceived organizational threat on performance.¹¹ Specifically, we compare changes in productivity between weakly protected patent staff—who were directly exposed to the possibility of layoffs, demotions, loss of telework privileges, and the elimination of performance bonuses—and unionized patent examiners, who were largely insulated from such changes due to their contractual protections. The intensity of the threat and institutional flux represented by DOGE varied across employee categories. While DOGE’s impact was acutely felt by staff, unionized examiners were largely protected due to their pre-existing contractual protections. Our design leverages this variation in exposure and protection to estimate the differential behavioral responses to institutional upheaval. This within-agency comparative design offers a replicable framework for evaluating the real-world consequences of administrative reforms across the federal government.

Our findings are striking. Consistent with an institutional-buffer account, productivity declined significantly among patent staff, while remaining stable and even slightly increasing among patent examiners. Patent staff experienced a 35% average per-day decline in productivity following DOGE’s workforce reduction campaign, while unionized patent examiners—who retained telework privileges and job protections—showed no significant change. Unionized patent workers were thus able to weather the DOGE-induced turmoil far more easily than their less-protected colleagues.

Our results are consistent with prior literature on the effects of layoff threats, which suggests that job insecurity can lead to distraction, anxiety, and disengagement.¹² In the case of the USPTO, it appears that less protected employees may have diverted their attention and emotional resources toward job search or networking, or suffered declines in their mental health, potentially impairing their ability to focus on core tasks. Whether this outcome was an unintended consequence of

⁹ See, e.g., Anya Bernstein & Cristinia Rodríguez, *The Accountable Bureaucrat*, 132 YALE L.J. 1600, 1612-14 (2023) (“[P]residential control of the administrative state is both important and entrenched”); Elena Kagan, *Presidential Administration*, 114 HARV. L. REV. 2245, 2229-50 (discussing the “serious legal questions” arises from presidential administrative control); Emily S. Bremer, *Presidential Adjudication*, 110 VA. L. REV. 1749, 1755-57 (noting questions regarding the unitary executive and the President’s expanded ability to control agencies); Brian D. Feinstein, *Legitimizing Agencies*, 91 U. CHI. L. REV. 919, 921-22 (2024) (“Confronted with a perceived imperative to legitimize the administrative state, a wide array of judges and scholars look to agency structures and processes.”).

¹⁰ See generally JOSHUA D. ANGRIST & JORN-STEFFEN PISCHKE, *MOSTLY HARMLESS ECONOMETRICS: AN EMPIRICIST’S COMPANION* 245–46 (2008) (describing difference-in-difference theory).

¹¹ Others use a difference-in-differences research design when studying changes at the USPTO, see, e.g., Michael Frakes & Melissa Wasserman, *Does the US Patent and Trademark Office Grant Too Many Bad Patents: Evidence From A Quasi-Experiment*, 67 STAN. L. REV. 613, 639 (2015) (describing the use of a difference-in-difference calculation to determine whether the USPTO grants too many patent applications that fail to meet the patentability requirements); David S. Abrams and R. Polk Wagner, *Poisoning the Next Apple-the America Invents Act and Individual Inventors*, 65 STAN. L. REV. 517, 520-21 (2013) (using a difference-in-difference technique to measure the drop, if any, in patents granted to individuals after the American Invents Act is passed and the U.S. shifts to a first-to-file patent regime), and studying other administrative law questions, see, e.g., Jonathan H. Choi, *Legal Analysis, Policy Analysis, and the Price of Deference: An Empirical Study of Mayo and Chevron*, 38 YALE J. ON REG. 818, 843 (2021) (using “[a] difference-in-differences model” to “test the effect of *Chevron* deference” on interpreting tax regulations).

¹² See Part II, *infra*.

DOGE or part of a broader strategy to increase attrition is beyond the scope of this Article. What is clear, however, is that the effects of such reforms are not uniform—and that institutional structures can play a critical role in shaping how employees respond to uncertainty. While much prior scholarship criticized unions, including police unions, as an obstacle to reform,¹³ we show that features embedded in collective bargaining agreements, such as their stability and resistance to sudden change or the structured performance expectations they help preserve, may help protect core administrative functions such as the patent examination system during episodes of aggressive political intervention and institutional disruption. These findings carry immediate policy implications and have been validated in real time.

This Article’s findings have implications not only for the future of the federal workforce, but also for how we theorize the relationship between executive power, institutional resilience, and public service delivery. By documenting the differential impact of reform on employees with different levels of protection, the study reframes longstanding debates about efficiency and accountability in the public sector.¹⁴ More broadly, the analysis offers a rare empirical lens on how abrupt executive-led reforms—particularly those lacking procedural clarity or stakeholder engagement—can destabilize agency performance and erode institutional capacity.¹⁵

A recent development validates our findings in real time and underscores their policy significance. On August 28, 2025, President Trump issued an executive order specifically targeting all patent unions, including POPA.¹⁶ The order, currently subject to litigation, seeks to eliminate collective bargaining protections and subject examiners to potential reductions in force, mandatory return-to-office requirements, and changes to performance accountability systems.¹⁷ Our continued data collection through December 2025 reveals that examiner productivity has already begun to decline following the executive order, mirroring the pattern we observed among unprotected staff during DOGE’s initial phase. This real-time validation demonstrates that the threat to job security alone, even while litigation proceeds, is sufficient to degrade employee performance and administrative capacity.

¹³ See, e.g., Catherine L. Fisk & L. Song Richardson, *Police Unions*, 85 GEO. WASH. L. REV. 712, 714, 747-758 (2017) (arguing that public sector unions, particularly police unions, can obstruct reforms aimed at addressing systematic racism and inequality); Dhammika Dharmapala, Richard H. McAdams, & John Rappaport, *Collective Bargaining Rights and Police Misconduct: Evidence from Florida*, 38 J. L., ECON., & ORG. 1 (2020) (empirically estimating that collective bargaining rights resulted in “a substantial increase in violent incidents of misconduct” by police officers).

¹⁴ Elena Kagan, *Presidential Administration*, 114 HARV. L. REV. 2245 (2010); Daphna Renan, *The President’s Two Bodies*, 120 COLUM. L. REV. 1119 (2020); Saikrishna Bangalore Prakash, *Imperial from the Beginning* (Yale Univ. Press 2015).

¹⁵ See, e.g., Bednar, *supra* note 9, at 907-08 (discussing the trade-offs between exercising control over an agency and the agency’s capacity to implement specific presidential policies).

¹⁶ See “Further Exclusions from the Federal Labor-Management Relations Program”, August 28, 2025, available at <https://www.whitehouse.gov/presidential-actions/2025/08/further-exclusions-from-the-federal-labor-management-relations-program/>. Communications from the current USPTO Director confirm that this executive order means that “[a]s a result, employees in Patents and OCIO are no longer represented by unions.” Available at https://www.reddit.com/r/patentexaminer/comments/1n2npte/exact_language_of_the_abolition_of_union/.

¹⁷ See, e.g., “No Union Anymore for Examiners!” available at https://www.reddit.com/r/patentexaminer/comments/1n2njba/no_union_anymore_for_any_examiners/ (including commentary from posters coming to this conclusion—the union protection removal is to ensure examiners return to work).

The remainder of the Article proceeds as follows. Part I provides a detailed account of DOGE’s formation, mandate, and early actions, including the key interventions that serve as exogenous shocks in our analysis. Part II reviews the existing literature on employee responses to potential layoffs, highlighting the mechanisms through which job insecurity may affect performance. Part III and IV describe our empirical strategy, describing the structure of the USPTO workforce, the construction of our dataset, and the implementation of the empirical design. Part V presents our results. Part VI discusses the broader implications for law, administrative design, patent policy, and the evaluation of government reform efforts.

I. The Department of Government Efficiency (DOGE) and Its Early Impact on the Federal Workforce

To understand the institutional context in which these effects unfolded, we begin with a detailed account of DOGE’s formation, mandate, and early actions. On January 20, 2025, the newly inaugurated administration established the Department of Government Efficiency (DOGE), a novel executive agency tasked with streamlining the federal bureaucracy. DOGE’s stated mission was to “eliminate redundancy, reduce waste, and restore accountability across the federal government.”¹⁸ In practice, however, its early actions were marked by sweeping personnel changes, abrupt communications, and a climate of uncertainty that reverberated across federal agencies.

This Part provides an institutional overview of DOGE and identifies three key interventions that serve as exogenous shocks in the empirical analysis of USPTO employee behavior: (1) the creation of DOGE itself; (2) the “Fork in the Road” email offering voluntary buyouts; and (3) a series of performance-monitoring emails requiring employees to justify their weekly output. Each of these events is temporally discrete, externally imposed, and plausibly unrelated to the underlying productivity trends at the USPTO, making them suitable for causal inference. For our purposes, these events matter because they generated an externally imposed job-insecurity shock that allows us to identify how collective bargaining protections buffer employee performance.

A. Formation and Mandate of DOGE

We start by examining the origins and structural authority of DOGE, which set the stage for its subsequent interventions. The genesis of DOGE can be traced to a nearly decade-long political campaign against what candidate-then-President Donald J. Trump repeatedly derided as the “deep-state” bureaucracy.¹⁹ Beginning with the 2016 “Contract with the American Voter,”²⁰ Trump promised to “drain the swamp” by freezing most civilian hiring and culling supposedly underperforming officials—a pledge implemented, albeit briefly, through a government-wide hiring

¹⁸ Sullivan, *supra* note 7.

¹⁹ Julian E. Barnes, Adam Goldman, & Charles Savage, *Blaming the Deep State: Officials Accused of Wrongdoing Adopt Trump’s Response*, N.Y. TIMES (Dec. 18, 2018) (“President Trump has long tried to explain away his legal troubles as the work of a “deep state” of Obama supporters entrenched in the law-enforcement and national-security bureaucracies who are just out to get him.”).

²⁰ Donald Trump’s Contract with the American Voter (available at <https://www.documentcloud.org/documents/3675384-Trump-Contract-with-the-American-Voter/>) (promising to “fight for passage” within 100 days of inauguration of the “Clean Up Corruption in Washington Act: Enacts new ethics reforms to drain the swamp and reduce the corrupting influence of special interests on our politics.”).

freeze during his first week in office and later revived in the 2020 executive order creating the new “Schedule F” employment category.²¹ Schedule F would have stripped civil-service protections from tens of thousands of policy-related positions and subjected them to at-will removal;²² although President Biden rescinded the order,²³ Trump’s 2024 campaign explicitly vowed to re-issue it “on Day One,” framing the measure as indispensable to restoring presidential control over the administrative state.²⁴

Well before Inauguration Day, Schedule F’s revival was embedded in a much broader blueprint—Heritage Foundation’s 927-page “Project 2025: Mandate for Leadership.”²⁵ This document laid out a detailed 180-day playbook for reorganizing every cabinet department²⁶ and, crucially, set the stage for the later creation of a stand-alone Department of Government Efficiency to institutionalize workforce reductions across the executive branch.²⁷ In late 2024 the Trump transition tapped Elon Musk and Vivek Ramaswamy to head an outside “DOGE Commission,”²⁸ and sympathetic GOP committee chairs signaled their willingness to codify its recommendations;²⁹ the House Oversight and Accountability Committee even devoted hearings in early 2025 to facilitate changes to enable DOGE to make “needed improvements in government operations.”³⁰ Although no formal “DOGE Committee” was established, these congressional signals—combined with the Project 2025 playbook—supplied the political and technocratic scaffolding that made the

²¹ Exec. Order No. 13,957, Creating Schedule F in the Excepted Service, 85 Fed. Reg. 67,631 (Oct. 26, 2020), <https://trumpwhitehouse.archives.gov/presidential-actions/executive-order-creating-schedule-f-excepted-service/> (noting that “agencies should have a greater degree of appointment flexibility with respect to these employees than is afforded by the existing competitive service process.”).

²² *Id.* at Section 4. The Executive Order created a new Schedule F of job classifications in the excepted service of the United States civil service for permanent policy positions,

²³ Government Executive, *Biden Signs Executive Order Killing Schedule F, Restoring Collective Bargaining Rights*, (available at <https://www.govexec.com/management/2021/01/biden-sign-executive-order-killing-schedule-f-restoring-collective-bargaining-rights/171569/>).

²⁴ Trump-Vance 2025, Agenda47: President Trump’s Plan to Dismantle the Deep State and Return Power to the American People (Mar. 21, 2023) (available at <https://www.donaldjtrump.com/agenda47/agenda47-president-trumps-plan-to-dismantle-the-deep-state-and-return-power-to-the-american-people>) (“On Day One, re-issue 2020 executive order restoring the president’s authority to fire rogue bureaucrats.”).

²⁵ Project 2025: Mandate for Leadership - The Conservative Promise (Washington, DC: Heritage Foundation, 2023) (available at <https://www.documentcloud.org/documents/24088042-project-2025s-mandate-for-leadership-the-conservative-promise/>).

²⁶ *Id.* (including separate chapters on every cabinet department in the federal government).

²⁷ *Id.* at p. 64 (noting that the Office of Presidential Personnel will be responsible for “Identifying programmatic political workforce needs early and developing plans (for example, Schedule F)”).

²⁸ David Ingram & Vaughn Hillyard, *Trump Says Elon Musk and Vivek Ramaswamy Will Head a New ‘Department of Government Efficiency,’* NBC NEWS (Nov. 12, 2024) (“President-elect Donald Trump named tech billionaire Elon Musk and conservative activist Vivek Ramaswamy on Tuesday to head up a new Department of Government Efficiency, fulfilling a campaign pledge to give Musk sweeping oversight of government spending.”).

²⁹ See e.g., Press Release, H. Comm. on Oversight & Accountability, *Chairman Comer Applauds President Trump’s Executive Orders to Bring Accountability, Reform to the Federal Workforce* (Mar. 27, 2025) (available at <https://oversight.house.gov/release/chairman-comer-applauds-president-trumps-executive-orders-to-bring-accountability-reform-to-the-federal-workforce/>); Press Release, H. Comm. on Oversight & Accountability, *Greene Announces Subcommittee Hearing on Codifying DOGE Reforms to Lock in Benefits for American Taxpayers* (June 30, 2025), (available at <https://oversight.house.gov/release/greene-announces-subcommittee-hearing-on-codifying-doge-reforms-to-lock-in-benefits-for-american-taxpayers/>).

³⁰ Rightsizing Government, Hearing Before the H. Comm. on Oversight & Accountability, 119th Cong. (2025), (available at <https://www.congress.gov/event/119th-congress/house-event/LC74149/text>).

Day-One executive order feasible and lent DOGE an aura of legislative possibility despite the absence of authorizing statutes.³¹

Certainty came the day Trump took office for a second time. DOGE was created by executive order on the first day of the new administration—January 20, 2025—with Elon Musk appointed as its inaugural director.³² The agency was granted broad authority to review, restructure, and reduce the federal workforce, with a particular focus on eliminating what Musk described as “deadweight” positions.³³ DOGE’s formation marked a sharp departure from prior reform efforts, which had typically emphasized incremental change and stakeholder consultation including Congressional action or at least Congressional consultation.³⁴

Shortly after its creation, DOGE rolled out informal ‘efficiency reviews’ of agency spending and IT assets.³⁵ These reviews were accompanied by public statements disparaging federal employees as inefficient and unaccountable, further exacerbating tensions between the agency and the civil service.³⁶

One of DOGE’s earliest and most controversial actions was a mass communication to federal employees that signaled a dramatic shift in workplace expectations. On January 28, 2025, the Trump administration sent a mass email to all federal employees titled “Fork in the Road.”³⁷ The message offered a voluntary buyout to any employee who chose to leave government service, framing the decision as a binary choice between “leaning in” to a new culture of efficiency or

³¹ Rebecca Kern, *Project 2025 Wanted To Hobble the Federal Workforce. DOGE Has Hastily Done That, and More*, Government Executive (Apr. 9, 2025) (“Musk’s DOGE took that playbook and proceeded to wipe out the CFPB, USAID and other agencies via legally questionable means, purportedly as part of a broader effort to save \$1 trillion.”).

³² Exec. Order No. 14097, Establishing and Implementing the President’s Department of Government Efficiency, 90 Fed. Reg. ____ (Jan. 20, 2025), available at <https://www.whitehouse.gov/presidential-actions/2025/01/establishing-and-implementing-the-presidents-department-of-government-efficiency/>.

³³ Alexandra Alper, *Exclusive: DOGE-Led Software Revamp To Speed US Job Cuts Even as Musk Steps Back*, REUTERS (May 8, 2025) (“Trump established DOGE to modernize government software, cut spending and drastically reduce the size of the federal workforce, which he complains is bloated and wasteful.”).

³⁴ Michael A. Cohen, *DOGE’s Mass Firings Will Only Make Government Less Efficient*, MSNBC (Feb. 26, 2025) (available at <https://www.msnbc.com/opinion/msnbc-opinion/elon-musk-doge-mass-firings-government-rcna193563>).

³⁵ Makena Kelly, Leah Feiger, & Zoe Schiffer, *DOGE Is Busier Than Ever-and Trump Says Elon Musk Is ‘Really Not Leaving’*, WIRED (May 30, 2025) (available at <https://www.wired.com/story/doge-elon-musk-really-not-leaving/>) (“Federal workers from at least six agencies tell WIRED that DOGE-style work is escalating in their departments.”).

³⁶ Raphael Satter, *Trump Orders Federal Workers Back to Office, Weakens Job Protections*, REUTERS (Jan. 20, 2025) (“Trump’s Make America Great Again (MAGA) movement has ratcheted the criticism to the next level, with the president calling federal employees “crooked” and “dishonest.”); Tim Reid & Melissa Taylor, *Musk Creates New Power Base in Washington with Takeover of US Agencies*, REUTERS (Feb. 5, 2025) (available at <https://www.reuters.com/world/us/musk-creates-new-power-base-washington-with-takeover-us-agencies-2025-02-05/>) (“Trump has repeatedly said that the federal bureaucracy is bloated and inefficient, and needs to be downsized. He also accuses many federal workers of being liberal ideologues out to thwart his agenda”).

³⁷ U.S. Off. of Pers. Mgmt., *Original Email to Employees*, (available at <https://www.opm.gov/fork/original-email-to-employees/>) (last visited July 12, 2025).

exiting the system.³⁸ The email was widely reported in the press and generated confusion and anxiety across agencies.³⁹

Although the buyout was nominally voluntary, the tone and timing of the message were interpreted by many employees as a veiled threat.⁴⁰ Within hours, the major federal-employee unions blasted out guidance urging members not to respond.⁴¹ The result was a period of organizational paralysis, with employees uncertain about their job security and supervisors unsure how to interpret or implement the directive.⁴²

Beginning on February 22, 2025, DOGE implemented a new performance-monitoring initiative requiring employees to submit weekly reports listing the “five most important things” they had accomplished⁴³ These emails, sent directly from Musk’s office, were framed as a means of increasing transparency and accountability.⁴⁴ However, they were also perceived as intrusive and performative, particularly given the lack of clear evaluation criteria or follow-up.⁴⁵

The initiative sparked internal resistance and external criticism.⁴⁶ Some agencies pushed back, arguing that the emails undermined existing performance review systems and created unnecessary

³⁸ Courtney Kube, Julie Tsirkin, Yamiche Alcindor, Laura Strickler, & Dareh Gregorian, *DOGE Will Use AI to Assess the Responses of Federal Workers Who Were Told to Justify Their Jobs via Email*, NBC NEWS (Feb. 24, 2025) (available at <https://www.nbcnews.com/politics/doge/federal-workers-agencies-push-back-elon-musks-email-ultimatum-rcna193439>).

³⁹ *Id.* (“The initial directive has faced pushback from unions, workers and even some agencies since it was sent, but the effort was praised by President Donald Trump earlier Monday.”).

⁴⁰ Olivia George & Aaron Weiner, *Resign? Stick It Out? Fight? Federal Workers Mull Trump Buyout Offer*, WASHINGTON POST (Jan. 29, 2025) (“A not-so-veiled threat came in Tuesday’s email, which said ‘we cannot give you full assurance regarding the certainty of your position or agency but should your position be eliminated you will be treated with dignity and will be afforded the protections in place for such positions.’”).

⁴¹ David Shepardson & Jarrett Renshaw, *White House Offers 2 Million Federal Employees Financial Incentive To Quit*, REUTERS (Jan. 28, 2025) (“The National Treasury Employees Union, which represents about 150,000 federal workers, warned its members that “the email is designed to entice or scare you into resigning” and said “we strongly urge you not to resign in response.”).

⁴² Eli Stokols, *Federal Workers Reeling over Trump’s ‘Buyout’ Offer: ‘This Is the Last Lifeboat in Town’*, POLITICO (Jan. 30, 2025) (available at <https://www.politico.com/news/2025/01/30/federal-workers-buyout-offer-00201349>) (noting that “upwards of hundreds of thousands of individual employees were struggling with what to do, increasingly uncertain about the stability of their jobs and their agencies.”).

⁴³ Joe Miller & Demetri Sevastopulo, *Elon Musk Demands Federal Workers Explain Their Jobs or Be Sacked*, Financial Times (Feb. 22, 2025) (“A memo sent shortly afterwards from the US government’s human resources department, which was summarised for the Financial Times by several people, orders government staff to respond with approximately five bullet points on what they have achieved by midnight on Monday.”).

⁴⁴ Eric Katz & David DiMolfetta, *Agency Guidance on ‘Five Accomplishments’ E-mail Still Inconsistent*, NEXTGOV FCW (Mar. 10, 2025) (available at <https://www.nextgov.com/people/2025/03/agency-guidance-five-accomplishments-email-still-inconsistent/403617/>) (“Musk has asserted that the regular emails can help agencies measure productivity and weed out staff deemed unsuitable for their roles.”).

⁴⁵ Ellen Mitchell, *Defense Department Ends DOGE-Initiated Weekly Activity Reports*, THE HILL (May 27, 2025) (“OPM leaders also said that the agency did not intend to do anything with the emails that employees sent.”).

⁴⁶ Paulina Smolinski, *DOGE’s Elon Musk Says Federal Employees Must Document Their Work or Resign; Some Agencies Push Back*, CBS NEWS (Feb. 24, 2025) (available at <https://www.cbsnews.com/news/elon-musk-doge-federal-employees-document-work-resign/>).

administrative burdens.⁴⁷ Others expressed concern that the initiative would be used to justify further layoffs or reassignments.⁴⁸

B. Later Removal of Union Protections

After the formation and initial implementation of DOGE, President Trump signed an executive order on March 27, 2025 entitled “Exclusions From Federal Labor-Management Relations Programs.”⁴⁹ This executive order applied to listed agencies and subdivisions that, the executive order indicated, “have a primary function [of] intelligence, counterintelligence, investigative, or national security work.”⁵⁰ This March 27, 2025 executive “terminat[ed] . . . the applicable collective bargaining agreement” for these agencies.⁵¹ Notably, the United States Patent and Trademark Office was not one of the listed agencies. However, on August 28, 2025, President Trump signed an executive order entitled “Further Exclusions From Federal Labor-Management Relations Programs” that amended the earlier executive order and expanded the agencies and subdivisions considered to be under the national security exclusion for labor protections.⁵² This specifically included the “Office of the Commissioner for Patents and subordinate units.”⁵³ The August 28, 2025 executive is referred to, going forward, as the “Union EO”. The acting director of the USPTO, immediately following the issuance of the Union EO, communicated to the USPTO employees that collective bargaining agreements would no longer be recognized and abided by because of the Union EO.⁵⁴

These executive orders sparked a series of lawsuits brought by various federal employee unions.⁵⁵ One lawsuit, filed on September 2, 2025, was brought by the patent examiner’s union.⁵⁶ This lawsuit is currently at the preliminary injunction hearing stage, with the relevant federal court considering the motion for a preliminary injunction to negate the effect of the Union EO.

⁴⁷ Jonathan Landay, Joseph Ax, & Sarah N. Lynch, *Some US Agencies Tell Workers Not To Reply To Musk's 'What Did You Do Last Week' Email*, REUTERS (Feb. 24, 2025) (“Officials at the FBI and State Department sent their staff e-mails telling them not to respond outside their chains of command....”).

⁴⁸ Farrah Tomazin, *Pentagon Shuts Down Musk's 'What Did You Do Last Week' E-mail*, DAILY BEAST (May 29, 2025) (noting that Defense Secretary Hegseth said at the time that “Non-compliance [with the 5 things e-mail] may lead to further review.”).

⁴⁹ See “Exclusions from the Federal Labor-Management Relations Program”, March 27, 2025, available at <https://www.whitehouse.gov/presidential-actions/2025/03/exclusions-from-federal-labor-management-relations-programs/>.

⁵⁰ *Id.* at § 1(a) & (b).

⁵¹ *Id.* at § 6.

⁵² See “Further Exclusions from the Federal Labor-Management Relations Program”, August 28, 2025, available at <https://www.whitehouse.gov/presidential-actions/2025/08/further-exclusions-from-the-federal-labor-management-relations-program/>.

⁵³ *Id.* at § 2(a).

⁵⁴ See Statement of the USPTO Acting Director, available at https://www.reddit.com/r/patentexaminer/comments/1n2npte/exact_language_of_the_abolition_of_union/.

⁵⁵ See *Nat’l Weather Serv. Em. Org. v. Trump*, No. 1:25-cv-02947 (D.D.C. Sept. 2, 2025) (including the patent examiner’s union—the Patent Office Professional Association (“POPA”) as a named plaintiff).

⁵⁶ See *Nat’l Weather Serv. Em. Org. v. Trump*, No. 1:25-cv-02947, No. 32 (D.D.C. Dec. 22, 2025) (indicating, in a minute order, that the proceedings are stayed and the preliminary injunction motion is “held in abeyance”).

C. Organizational Consequences

DOGE's early interventions appeared to have immediate and visible effects on the federal workforce. Reports from multiple agencies described a "brain drain" as senior officials opted for early retirement, leaving critical roles unfilled.⁵⁷ Morale plummeted, with employees describing a workplace culture dominated by fear, confusion, and a desire to "stay out of the line of fire."⁵⁸ These effects also impacted the USPTO, where a federal hiring freeze imposed by the Trump administration prevented the agency from replacing departing staff.⁵⁹ Despite these constraints, the USPTO attempted to "do more with less" by reassigning supervisory examiners to frontline examination roles and offering incentives for increased productivity.⁶⁰ However, these measures were implemented against a backdrop of widespread uncertainty, with non-examiner patent examining staff facing new in-office mandates and reduced telework flexibility.⁶¹

At the USPTO, these dynamics were particularly salient. As a performance-driven agency with a complex internal hierarchy and a mix of different levels of union protection, the USPTO became a natural site for studying how job insecurity affects behavior. The DOGE interventions—especially the announcement of the formation of DOGE and the weekly performance reports—constitute plausibly exogenous shocks that allow for causal identification of changes in productivity and effort.

II. Employee Responses to Layoff Threats and Job Insecurity

To interpret the behavioral responses we observe, we turn to the existing literature on how employees react to job insecurity and layoff threats. There are open questions as to whether DOGE's initial actions improved or inhibited agency efficiency and efficacy.⁶² The scientific literature on employee responses to layoffs and job insecurity reveals a complex interplay among organizational context, individual motivation, and perceived fairness. This section situates our union-buffer account within the broader literature on job insecurity, workplace stability, and employee performance under threat. It synthesizes empirical findings across several domains—employee engagement, productivity, psychological well-being, and strategic behavior—to develop hypotheses about how USPTO employees may have responded to the DOGE interventions. While conventional wisdom holds that threats of reductions in force (RIFs) and rhetoric about making

⁵⁷ Nathaniel Weixel, *DOGE Cuts at Health Agencies Prompt 'Brain Drain' Fears*, THE HILL (Feb. 23, 2025) ("The Trump administration's effort to reshape the federal government through Elon Musk and his Department of Government Efficiency (DOGE) is raising fears among public health experts, researchers and advocacy groups of a massive brain drain and dire impacts to public health.").

⁵⁸ Andrea Swalee & Annetta Stogniew, *What Federal Workers Say About DOGE, Job Cuts and Feelings of Betrayal*, NBC WASHINGTON (March 12, 2025) (available at <https://www.nbcwashington.com/news/local/what-federal-workers-say-about-doge-job-cuts-and-feelings-of-betrayal/3859793/>); see also Sullivan, *supra* note 7.

⁵⁹ See Exec. Order No. 14099, *Extension of the Federal Hiring Freeze* (Apr. 15, 2025) (available at <https://www.whitehouse.gov/presidential-actions/2025/04/extension-of-hiring-freeze/>).

⁶⁰ See Theresa Schliep, *USPTO Tackling Backlog Despite Hiring Freeze, Official Says*, LAW360 (May 21, 2025) (available at <https://www.law360.com/articles/2340339>).

⁶¹ *Id.* (noting that probationary examiners and support staff were subject to new in-office mandates).

⁶² See, e.g., Elaine Kamarack, *How Will We Know if DOGE is Succeeding?*, Brookings Institution (June 18, 2025), <https://www.brookings.edu/articles/how-will-we-know-if-doge-is-succeeding/> (noting that one grounds of evaluation of DOGE's success is whether "agencies able to provide services and benefits that citizens expect").

government “more efficient” often lead to disengagement and reduced effort, the literature suggests that the actual effects can vary depending on the institutional context and the degree of perceived individual vulnerability. In the end, the current literature suggests that DOGE would lead to less productivity for patent employees— particularly those without the institutional protections afforded by strong union membership and collective bargaining agreements.

A. Declines in Engagement and Morale

A consistent finding across organizational studies is that the threat or implementation of layoffs significantly reduces employee engagement and morale.⁶³ Engagement, defined as a worker’s “drive, participation, motivation and commitment to a company,” tends to decline sharply in the face of job insecurity, particularly when layoffs are abrupt or poorly communicated.⁶⁴ A 2024 McKinsey survey found that worker engagement fell to 32%, down 3% from the prior year, with affected employees often performing only the bare minimum.⁶⁵

The Harvard Business Review similarly reports that layoffs in 2023 led to a marked decline in employee confidence in leadership, belief in career opportunities, and overall morale.⁶⁶ Notably, organizations with high pre-layoff engagement levels experienced the steepest declines, suggesting that even well-functioning workplaces are vulnerable to morale shocks when layoffs are perceived as unjust or destabilizing.⁶⁷

These findings are echoed in the public sector. In the context of teacher layoffs, researchers found that even “reduction in force” (RIF) notices that did not result in actual terminations led to increased stress, decreased job commitment, and a shift in focus toward external job searches.⁶⁸ The mere threat of job loss, particularly when communicated through mass notices or ambiguous directives, can induce a state of “survival mode” among employees, undermining both morale and productivity.⁶⁹

⁶³ Sanford M. Jacoby, *Melting Into Air? Downsizing, Job Stability, and the Future of Work*, 76 Chi.-Kent L. Rev. 1195, 1202–05 (2000) (documenting sharp declines in surviving employees’ job satisfaction, commitment, and morale following corporate downsizings).

⁶⁴ Jack Kelly, *How Companies Can Avoid Plummeting Productivity and Employee Engagement Amid Layoffs*, FORBES (Jan. 26, 2024) (available at <https://www.forbes.com/sites/jackkelly/2024/01/26/how-companies-can-avoid-plummeting-productivity-and-employee-engagement-amid-layoffs/>).

⁶⁵ *Id.* “Some Employees Are Destroying Value. Others Are Building It. Do You Know the Difference?” McKinsey Quarterly (Sept. 11, 2023) (available at <https://www.mckinsey.com/capabilities/people-and-organizational-performance/our-insights/some-employees-are-destroying-value-others-are-building-it-do-you-know-the-difference>) (estimating that 32% of the workforce is a typical organization is “mildly disengaged” after a layoff, compared to 3% before the layoff.)

⁶⁶ Didier Elzinga & Amy Lavoie, *Research: The Long-Term Costs of Layoffs*, HARV. BUS. REV. (Oct. 2024) (available at <https://hbr.org/2024/10/research-the-long-term-costs-of-layoffs>).

⁶⁷ *Id.*

⁶⁸ Katharine O. Strunk, Dan Goldhaber, David S. Knight, & Nate Brown, *The Inequitable Effects of Teacher Layoffs: What We Know and Can Do*, 18 EDUC. FIN. & POL’Y 367, 369 (2023).

⁶⁹ Sullivan, *supra* note 7.

B. Productivity Effects: Decline or Strategic Preservation?

The literature also explores how job insecurity can influence productivity, though the direction of the effect is often context-dependent. While many studies document a decline in output following layoff threats,⁷⁰ others suggest that under certain conditions, employees may increase their performance in an effort to preserve their jobs.⁷¹ This “job preservation effort” is most likely to occur when employees perceive that their individual performance is being monitored and may influence retention decisions.⁷²

However, this motivational effect appears to be contingent on two factors: low intrinsic motivation and low perceptions of distributive justice.⁷³ In other words, employees who are not otherwise highly motivated, and who believe that the organization is generally unfair, may paradoxically respond to layoff threats with increased effort—perhaps as a last-ditch attempt to demonstrate value.⁷⁴

In contrast, employees with high intrinsic motivation or strong perceptions of organizational fairness may experience layoffs as a betrayal, leading to disengagement rather than increased effort.⁷⁵ This dynamic may be particularly salient in the federal workforce, where public service motivation and institutional loyalty are often high.⁷⁶

C. Psychological and Behavioral Spillovers

Beyond engagement and productivity, job insecurity can trigger broader psychological and behavioral responses that affect organizational functioning. Laboratory studies have shown that exposure to simulated layoffs reduces motivation, self-esteem, and trust in organizational leadership.⁷⁷ Participants in such studies report heightened anxiety and worry, particularly when layoffs are perceived as arbitrary or unfair.⁷⁸

These psychological effects often manifest behaviorally. In the education sector, teachers who received RIF notices—even when later rescinded—were significantly more likely to transfer

⁷⁰ See, e.g., Strunk, et al., *supra* note 68 at 5.

⁷¹ See Jesse Koen, Jasmine T.H. Low, & Annelies Van Vianen, *Job Preservation Efforts: When Does Job Insecurity Prompt Performance?*, 23 CAREER DEV. INT’L 285, 287 (2018) (available at <https://www.emerald.com/insight/content/doi/10.1108/cdi-04-2018-0099/full/pdf>).

⁷² *Id.* at 302.

⁷³ *Id.* at 291; Rachel Arnow-Richman, *Just Notice: Re-Reforming Employment at Will*, 58 UCLA L. REV. 1 (2010) (proposing a “pay-or-play” rule that obliges employers either to give advance notice of termination or pay wages in lieu of notice, contending that predictable notice reduces the anxiety-driven productivity losses that follow surprise layoffs); Naomi Schoenbaum, *Towards a Law of Coworkers*, 68 ALA. L. REV. 605, 640-45 (2017) (showing that perceived unfairness and job-insecurity shocks damage coworker relational capital, undermining the collaborative effort essential for sustained productivity).

⁷⁴ *Id.* at 302.

⁷⁵ *Id.*

⁷⁶ See Strunk et al., *supra* note 68, at 5.

⁷⁷ See Joel Brockner, Steven Grover, Thomas F. Reed, & Rocki Lee Dewitt, *Layoffs, Job Insecurity, and Organizational Commitment: The Moderating Effect of Job Involvement*, 70 J. APPL. PSYCHOL. 552, 553–54 (1985).

⁷⁸ Kenneth A. Sprang, *After-Acquired Evidence: Tonic for an Employer’s Cognitive Dissonance*, 60 MO. L. REV. 89, 134 n.187 (1995) (collecting empirical studies that tie involuntary job loss to elevated depression, anxiety, and mortality rates).

schools or exit the profession.⁷⁹ Similarly, federal employees facing layoff threats have reported increased absenteeism, reduced collaboration,⁸⁰ and a general reluctance to take initiative.⁸¹

Taken together, these findings suggest that the effects of layoff threats are not limited to those who are ultimately terminated. The broader workforce often experiences a chilling effect, characterized by reduced morale, diminished trust, and strategic withdrawal from discretionary effort.

Recent studies have also explored how job insecurity can lead to unethical pro-organizational behavior, reduced innovation, and diminished flexibility in the workplace.⁸² These findings suggest that the effects of workforce reduction campaigns may extend beyond productivity metrics, influencing the broader organizational culture and employee decision-making.

III. Patent Examination, Examiner Roles, and Union Protections

With this theoretical foundation in place, we now turn to the institutional structure of the USPTO and the roles of its employees. The USPTO is a performance-driven agency responsible for examining patent applications and determining whether they meet the statutory requirements for patentability. The agency's internal structure and labor protections provide a unique opportunity to study how different categories of employees respond to organizational shocks such as those introduced by the Department of Government Efficiency (DOGE).

This section begins with an overview of the patent examination process and the central role played by examiners. We then turn to the contributions of non-examiner patent examining staff at the USPTO, who provide essential support in the evaluation of applications. Finally, we consider the influence of the patent examiner union on examiner workload and broader operational dynamics within the USPTO.

A. Patent Examiners and the Examination Process

Patent examiners are the core professional workforce at the USPTO. As of 2025, the agency employs over 9,000 examiners, with plans prior to DOGE to expand further.⁸³ These employees are responsible for reviewing patent applications, conducting prior art searches, and issuing office actions that determine whether an invention is novel, nonobvious, and adequately disclosed under the Patent Act.⁸⁴

⁷⁹ *Strunk et al.*, *supra* note 68, at 5.

⁸⁰ Schoenbaum, *supra* note 73 at 640-45 (linking job-insecurity shocks to deteriorating coworker relationships and diminished collaboration among “survivor” employees).

⁸¹ *See Sullivan*, *supra* note 7.

⁸² *See, e.g., Xia et al.*, *The Impact of Fear of External Threats on Unethical Pro-Organizational Behavior*, SOC. BEHAV. & PERSONALITY (2023); *see also Zhang & Wang*, *Why and When Job Insecurity Hinders Employees' Taking Charge Behavior*, ECON. & INDUS. DEMOCRACY (2023).

⁸³ United States Patent & Trademark Office Blog, *Quality U.S. Patents Drive Our Economy and Solve World Problems* (available at <https://www.uspto.gov/blog/quality-us-patents-drive-our-economy-and-solve-world-problems>).

⁸⁴ *See infra*, notes 58-78

The patent examination process begins when an applicant submits a complete application to the USPTO.⁸⁵ This submission must include a written description of the invention, known as the specification, at least one claim, and any required drawings.⁸⁶ Upon receipt, the USPTO staff conducts a preliminary review to ensure all necessary documents and fees are in order.⁸⁷ The application is then categorized by subject matter and routed to the appropriate Technology Center (TC), where it is assigned to a specific patent examiner within a technical art unit.⁸⁸ Due to significant backlogs at the USPTO, it typically takes several months or longer before the application arrives on an examiner's docket.⁸⁹

Examiners typically review applications in the order they were filed.⁹⁰ However, there is a significant backlog of applications, over 800,000 at the beginning of 2025,⁹¹ resulting in delays of over eighteen months between patent application filing and a first review by a patent examiner.⁹² The patent examiner then evaluates the selected claims for compliance with statutory requirements, including subject matter eligibility,⁹³ sufficiency of disclosure including enablement,⁹⁴

⁸⁵ Alan C. Marco, Andrew C. Toole, Richard Miller, & Jesse Frumkin, *USPTO Patent Prosecution and Examiner Performance Appraisal*, p. 10 (USPTO Economic Working Paper No. 2017-08, 2017) (available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2995674) (“The examination process begins with the filing of a patent application.”).

⁸⁶ 37 CFR. 1.53 (2025) (specifying that the requirements for a new nonprovisional application) (“The filing date of an application for patent ... is the date on which a specification ... and at least one claim ..., and any drawing required ... are filed in the Patent and Trademark Office.”).

⁸⁷ Marco *et al.*, *supra* note 85 at p.3 (“When the application is received by USPTO, it goes through an extensive pre-examination review to make certain that all necessary forms have been filed, all relevant fees have been paid, and that the application is complete.”).

⁸⁸ Alan C. Marco & Richard D. Miller, *Patent Value, Uncertainty, and Standard Declaration: Implications from Patent Litigation*, p. 7 (available at https://www.law.northwestern.edu/research-faculty/clbe/events/standardization/documents/marco_miller_litigation_dynamic.pdf) (“the application is classified according to its subject matter and forwarded to the relevant Technology Center (TC) for examination. Within the TC, the application is then assigned to an examiner in one of the group art units (GAUs).”)

⁸⁹ Marco *et al.*, *supra* note 85 at p. 3 (“It can take several months to a year or more for an application to be assigned to an examiner (i.e. placed on her docket).”).

⁹⁰ *Id.* (“Examiners generally work on applications in filing date order although they have some discretion in this matter.”)

⁹¹ Eileen McDermott, *Trump Hiring Freeze Leaves USPTO Backlog Attack Plan in Limbo*, IPWATCHDOG (Jan. 23, 2025) (available at <https://ipwatchdog.com/2025/01/23/trump-hiring-freeze-leaves-uspto-backlog-attack-plan-limbo/id=185341/>) (“The current backlog stands at 826,736 unexamined applications...”).

⁹² U.S. Patent & Trademark Office, Patents Pending Data May 2025, <https://www.uspto.gov/dashboard/patents/pendency.html> (last visited July 12, 2025) (reporting First Office Action pendency of 23.4 months as of May 25, 2025).

⁹³ See 35 U.S.C. § 101 (2025) (defining four categories of patentable subject matter). The Supreme Court has issued four opinions on the doctrine of patentable subject matter since 2010), *Bilski v. Kappos*, 561 U.S. 593 (2010); *Mayo Collaborative Services v. Prometheus Labs.*, 566 U.S. 66 (2012); *Association of Molecular Pathology v. Myriad Genetics*, 569 U.S. 576 (2013); *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208 (2014).

⁹⁴ 35 U.S.C. § 112(a) (2025) (“The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains ... to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.”).

definiteness,⁹⁵ novelty,⁹⁶ and non-obviousness.⁹⁷ This involves a search of prior patents and non-patent literature to determine whether the invention is anticipated or rendered obvious.⁹⁸

Following this review, the patent examiner may issue a first substantive response—known as a First Action on the Merits (FAOM)—which could be an allowance, a non-final rejection, or a formal objection.⁹⁹ Most applications receive a non-final rejection at this stage.¹⁰⁰ Applicants typically have three months to respond to a non-final rejection, with extensions up to six months available for a fee.¹⁰¹ Responses may include claim amendments, legal arguments, or additional disclosures. Examiners then reassess the application.¹⁰² If the issues are resolved, the application is allowed.¹⁰³ If not, a Final Rejection may be issued, temporarily closing prosecution.¹⁰⁴ Applicants can then abandon the application, file a Request for Continued Examination (RCE), submit an after-final response, appeal to the Patent Trial and Appeal Board, or file a continuation application to pursue related subject matter.¹⁰⁵ If an RCE is filed, the examination process is

⁹⁵ 35 U.S.C. § 112(b) (2025) (“The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.”).

⁹⁶ 35 U.S.C. § 102 (2025) (detailing the requirements that the invention must be not have previously been patented, described in a printed publication, on sale, in public use, or otherwise available to the public prior to the applicant’s effective filing date).

⁹⁷ 35 U.S.C. § 103 (2025) (“A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed ..., if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains.”).

⁹⁸ Christopher A. Cotropia & David L. Schwartz, *Patents Used in Office Action Rejections as Indicators of Value*, 22 J. EMPIRICAL L. STUD. 76, 77 (2025) (“patent examiners have a duty to search for prior art.”); *see also* U.S. PATENT & TRADEMARK OFFICE, MANUAL OF PATENT EXAMINING PROCEDURE § 706 (9th ed. rev. Jan. 2024) [hereinafter MPEP] (stating that after reading the specification and claims, the examiner searches the prior art and then “determine[s] whether the claims define a useful, novel, nonobvious, and enabled invention that has been clearly described in the specification”).

⁹⁹ Marco *et al*, *supra* note 85 at. p. 4 (“Based on this prior art search and examination, the examiner may either allow all claims that have been examined, or may issue a non-final rejection that rejects or objects to one or more of the claims.⁶ It is also possible for the examiner to issue an Office action (called an Ex parte Quayle) indicating that although the subject matter of the examined claims are allowable, certain formal requirements still remain and must be addressed.”)

¹⁰⁰ *Id.* (“Between 85 and 90 percent of all applications receive a non-final rejection” at initial examination).

¹⁰¹ MPEP § 710.01 provides the statutory period to respond to office actions, and notes that three months is “used in practically all cases.” 35 U.S.C. § 133 (2025) sets the outer bound of six months for responses to any USPTO action.

¹⁰² Marco *et al*, *supra* note 85 at. p. 5 (“The applicant typically responds with some combination of arguments and amendments to the claims to clarify them or to narrow their scope to overcome the prior art. The applicant may also file information disclosure statements, which are used to comply with the applicant’s duty to disclose any information material to patentability.”)

¹⁰³ *Id.* (“If no issues remain, the applicant is informed that the claims are allowable.”).

¹⁰⁴ *Id.* (“Rather than allowing the application, the examiner may find the claims in question and/or the applicant’s arguments are insufficient and choose to issue a Final Rejection.”).

¹⁰⁵ Christopher A. Cotropia & David L. Schwartz, *The Hidden Value of Abandoned Applications to the Patent System*, 61 B.C. L. REV. 2809, 2820 (2020) (“If the claims are rejected, the applicant can appeal to the USPTO’s Patent Trial and Appeals Board or continue prosecuting the application by filing a Request for Continued Examination (RCE), permitting further amendment of the claims and continuation of the prosecution process.”)

reopened, allowing the applicant to continue prosecution of the same application with the same examiner, often with additional amendments or arguments.¹⁰⁶

A patent examiner's performance during the examination process is governed by a production-based system known as the "count system."¹⁰⁷ Examiners are assigned a quota of "counts" to complete during each biweekly pay period.¹⁰⁸ Counts are awarded for specific actions, such as issuing a FAOM (1.25 counts), final rejections (0.5 counts), and processing abandonments or requests for continued examination (RCEs).¹⁰⁹ The number of required counts is a function of the examiner's seniority, the complexity of the technology, and the number of examining hours worked.¹¹⁰

Examiners progress through the General Schedule (GS) pay scale, beginning at GS-5 or GS-7 and advancing through GS-14.¹¹¹ At GS-13, examiners may obtain Partial Signatory Authority (PSA), allowing them to sign non-final rejections. Full Signatory Authority (FSA), typically granted at GS-14, permits examiners to sign all office actions without supervisory review.¹¹² Supervisory Patent Examiners (SPEs), who occupy GS-15 positions, oversee the work of junior examiners but are not themselves part of the bargaining unit.¹¹³

¹⁰⁶ Marco *et al.*, *supra* note 85 at 6 ("Second, the applicant may continue to seek patent protection before the examiner by filing a Request for Continued Examination (RCE). In this case, prosecution of the application is reopened....").

¹⁰⁷ Gaétan de Rassenfosse, *Patent Quality and Examiner Incentives*, p. 5 (SSRN Working Paper, 2025) (available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5257509) ("count system measures patent examiners' productivity by tracking the time spent on examination tasks and allocating credit for various stages of the prosecution process"); *see also* Marco *et al.*, *supra* note 85 at 10 (noting that examiner "[p]roduction performance is based on a quota system generally referred to as the 'count system.'").

¹⁰⁸ de Rassenfosse, *supra* note 107 at n. 21, p. 11 ("Although only quarterly and annual production targets formally matter, examiners often organize their work around biweekly goals ending on *Count Monday* (the first Monday of each new pay period). These soft deadlines shape examiner behavior and create a regular production rhythm."). There is evidence that examiners perform a significant portion of their reviews at the end of each biweekly period. *See* Michael D. Frakes & Melissa F. Wasserman, *Procrastination at the Patent Office?*, 183 J. OF PUB. ECON. 104140 (2020) ("we confirm that examiners complete a substantial percentage of reviews at the end of both bi-weekly and quarterly quotas....").

¹⁰⁹ *See* Harrity LLP, *Unveiling the USPTO's Examiner Production System* (available at <https://harrityllp.com/unveiling-the-usptos-examiner-production-system-strategic-insights-for-patent-prosecutors/>). *See also* de Rassenfosse, *supra* note 107, Table 1 at p. 5.

¹¹⁰ United States Patent & Trademark Office Examination Time and the Production System (available at <https://www.uspto.gov/sites/default/files/Examination%20Time%20and%20the%20Production%20System.pdf>).

¹¹¹ *See* Office of Personal Management, *Special Rates Table No. 0576* (<https://www.opm.gov/special-rates/2025/Table057601012025.aspx>) (detailing the rate table for patent examiners through GS levels); *see also* *Engineers and Scientists Patent Examiner Brochure*, USPTO (https://www.uspto.gov/sites/default/files/documents/USPTO_Patent_examiner_recruiting_brochure.pdf) (depicting the GS level table).

¹¹² *See generally* Naira R. Simmons, *Putting Yourself in the Shoes of a Patent Examiner: Overview of the United States Patent & Trademark Office (USPTO) Patent Examination Production (Count) System*, 17 UIC L. REV. OF INTELLECTUAL PROPERTY L. 32 (2017).

¹¹³ Dennis Crouch, *Most Patent Examiners Protected from USPTO Return-to-Office Mandate (for now) Through Union Agreement*, Patently-O (Feb. 5, 2025) (noting that supervisory patent examiners are not covered by the union agreement); *see also* Patent Office Professional Association, *About Us* (available at <http://popa.org/forms/about-us/>) (identifying *non-supervisory* patent examiners and primary examiners as represented by the union).

B. Non-Examiner Patent Examining Staff

In contrast to examiners, non-examiner patent examining staff play a different but equally essential role in the patent process. Within the agency, the roughly 1,000 non-examining patent staff play a critical role in processing applications, ensuring compliance with formal requirements, and managing administrative workflows.¹¹⁴ The patent staff include employees that evaluates the incoming patent application for compliance with various regulations and internal standards, classifies the application into the correct technological field, assigns that the application to a patent examiner for examination, and ensures the patent application is in proper form for issuance as an actual patent.¹¹⁵ While each staffer's specific tasks vary, they all play a key role in the same patent examination process as the patent examiner.

For example, when a new patent application is filed, non-examiner staff reviews the application to ensure all of the necessary elements are present, informs the patent applicant with a "Notice to File Missing Parts" to correct any deficiencies, and assigns the patent application a filing date.¹¹⁶ The staff also classifies the patent application in the proper technological field and then, when the initial review is complete, forwards the application on to a patent examiner, placing the application in the patent examiner's application queue.¹¹⁷ Non-examiner patent examining staff are also active during the end of patent examination, when a patent application has been allowed. The non-examiner patent examining staff ensures the patent application is ready for publication and issuance and the necessary issuance fee has been paid.¹¹⁸

Unlike examiners, non-examining patent workers are not evaluated under the count system but are instead subject to quality reviews conducted by the Technology Centers and the Office of Patent Quality Assurance (OPQA).¹¹⁹ They are evaluated via performance metrics and reviews, but are not on the count-system that governs patent examiners. A key distinction between these two groups lies in union representation, which we explore next.

¹¹⁴ Wysebridge, *Legal Instruments Examiner – Intellectual Property Terminology Explained* (available at <https://wysebridge.com/lie-or-legal-instruments-examiner-intellectual-property-terminology-explained>).

¹¹⁵ See, e.g., USPTO FY 2024 Agency Financial Report 19-21 (<https://www.uspto.gov/sites/default/files/documents/USPTOFY24AFR.pdf>) (identifying staff performing support for patent examination).

¹¹⁶ Some of these staff sit within the Office of Patent Application Processing (OPAP) and the Applicant Assistance Unit (AAU). See Office of Patent Application Processing (available at <https://www.uspto.gov/about-us/organizational-offices/office-commissioner-patents/patent-application-processing>) and Application Assistance Unit (available at <https://www.uspto.gov/learning-and-resources/support-centers/application-assistance-unit-aaui>)

¹¹⁷ See Stuart Graham, et. al., *The USPTO Patent Examination Research Dataset: A Window on Patent Processing*, 27 J. OF ECON. & MGMT STRATEGY 554, 570 (2018) ("3 As part of this review, the application is classified according to its subject matter and forwarded to the relevant TC for examination. Within the TC, the application is then assigned to an examiner in one of the group art units.").

¹¹⁸ See *id.*, Online Appendix B at 69-70 (available at <https://www.uspto.gov/sites/default/files/documents/PatEx%20Working%20Paper.pdf>) (identifying events such as "Issue Fee Payment Verified" and "Application Is Considered Ready for Issue").

¹¹⁹ United States Patent & Trademark Office Patent Quality Metrics (available at <https://www.uspto.gov/patents/quality-metrics>).

The non-examining patent staff are technically covered by a union, a section of the National Treasury Employees Union (“NTEU”), specifically NTEU 243.¹²⁰ NTEU is an umbrella union that covers a wide variety of different public sector unions across the federal government.¹²¹ Per discussions with stakeholders, this generalist union must serve a wide variety of interests, not all of particular concern or salience to patent staff, resulting in relatively weaker protections. In addition, the non-examining patent staff union signed their collective bargaining agreement on January 15, 2025, leaving them within the thirty-day window targeted by Trump’s January 31, 2025 executive order claiming to invalidate union agreements such as the recent patent staff CBA.¹²² Stakeholders indicated that this “lame duck” executive order was of particular concern to patent staff and brought the validity of their protections into question.

C. The Patent Office Professional Association (POPA)

A key institutional feature of the USPTO is the presence of a strong, professional labor union for patent examiners. The Patent Office Professional Association (POPA) is the exclusive bargaining representative for non-supervisory patent examiners, classifiers, computer scientists, and other technical professionals.¹²³ Although membership is not mandatory, the collective bargaining agreement (CBA) negotiated by POPA applies to all covered employees, consistent with the National Labor Relations Board’s duty of fair representation.¹²⁴ And these covered employees include patent examiners and certain attorneys, specialists, and other professionals across multiple USPTO offices, but do not include non-examiner patent examining staff.

POPA provides its members with a range of workplace protections. Most notably, patent examiners covered by the CBA enjoy robust remote work privileges and heightened procedural safeguards against termination, negotiated through a collective bargaining agreement. These protections were particularly salient during the DOGE reform campaign, which introduced widespread uncertainty and the threat of layoffs across the federal workforce. While staff workers lacked such strong union representation and were more vulnerable to these pressures, particularly in light of the “lame duck” executive order,¹²⁵ examiners, in contrast, retained a degree of insulation due to their protected status. This was particularly true given a revamped, and strengthened CBA was signed outside the thirty-day window of the “lame duck” EO.¹²⁶ This sense of insulation was reinforced by external signals. While the Trump Administration issued an executive order purporting to cancel collective bargaining agreements across many federal agencies,¹²⁷ POPA’s agreement remained in force. The

¹²⁰ See USPTO, National Treasury Employees Union Chapter 243 sign new collective bargaining agreement (available at <https://www.uspto.gov/about-us/news-updates/uspto-national-treasury-employees-union-chapter-243-sign-new-collective-0>).

¹²¹ See, e.g., <https://www.nteu.org/> (detailing the NTEU).

¹²² “Limiting Lame-Duck Collective Bargaining Agreements That Improperly Attempt To Constrain the New President,” 90 Fed. Reg. 9581 (Jan. 31, 2025); see supra note 121 (noting that the CBA was signed on January 15, 2025).

¹²³ Patent Office Professional Association, About Us (available at <http://popa.org/forms/about-us/>).

¹²⁴ National Labor Relations Board, Right to Fair Representation (available at <https://www.nlr.gov/about-nlr/rights-we-protect/the-law/employees/right-to-fair-representation>).

¹²⁵ See “Limiting Lame-Duck Collective Bargaining Agreements That Improperly Attempt To Constrain the New President,” 90 Fed. Reg. 9581 (Jan. 31, 2025).

¹²⁶ *Id.*

¹²⁷ Exclusions from Federal Labor-Management Relations Programs, Exec. Order No. 14,123, 90 Fed. Reg. 18,456 (Mar. 27, 2025).

Commerce Department explicitly acknowledged that DOGE's return-to-office mandates did not apply to patent examiners.¹²⁸ Staff and others were required to return to the office.¹²⁹ Anecdotal reports suggest that many examiners understood themselves to be protected from the most disruptive aspects of DOGE,¹³⁰ further stabilizing their expectations and behavior.

This institutional distinction between these two groups of employees is central to our empirical strategy. By comparing the performance of non-examiner patent examining staff and patent examiners before and after DOGE's interventions, we are able to estimate the causal effect of job insecurity on productivity and assess the buffering role of union protections.

While POPA retained its collective bargaining agreement during the DOGE reforms, other federal unions faced a different reality. The Trump administration issued an executive order excluding over 30 agencies from federal labor-management relations programs,¹³¹ effectively nullifying union protections for many federal employees. This divergence highlights the unique position of POPA and its members, who were able to maintain continuity and stability amid widespread disruption.

POPA eventually lost collective bargaining protection as a result of the Union EO signed by President Trump on August 28, 2025.¹³² As a result, the acting director of the USPTO indicated POPA, and the accompany agreements, would no longer be recognized by the USPTO.¹³³

¹²⁸ U.S. Dep't of Com., Information Memorandum for Department Leadership on Return to In-Person Work (Jan. 24, 2025) (available at https://www.commerce.gov/sites/default/files/2025-01/Information%20Memo%20-%20Return%20to%20In-Person%20Work_0.pdf) (noting that the return to work order “does not apply to the U.S. Patent and Trademark Office”).

¹²⁹ “Email from Vaishali Udupa, Comm'r for Patents, to all Patents Employees (Feb. 4, 2025, 4:02 PM) (available at (https://www.linkedin.com/posts/julie-burke-492264120_patent-fork-ip-activity-7292676941176848384--0mX/)) (“All routine teleworkers should return full-time to USPTO offices, as soon as possible, but no later than Monday, February 10, 2025...Employees whose telework is the result of a collective bargaining agreement...are not covered by this message.”).

¹³⁰ See, e.g., “My fellow PEs, please take a deep breath...”, (available at https://www.reddit.com/r/patentexaminer/comments/lidsn96/my_fellow_pes_please_take_a_deep_breath/) (discussing the protections provided by POPA and the CBA and concluding that “[a]s of right now NOTHING has happened to patent examiners”); “New POPA update,” (available at https://www.reddit.com/r/patentexaminer/comments/1i99cme/new_popa_update/) (discussing the recent POPA updates and patent examiner protections); Patent Office Professional Association, “POPA Update 2/11/25”, (available at <http://popa.org/blog/popa-update-21125/>) (“POPA-covered employees have a Collective Bargaining Agreement (CBA). “); Patent Office Professionals Association, “Fork in the Road email”, (available at <http://popa.org/blog/fork-in-the-road-email/>) (“By now most of us have received the “Fork in the Road” email. POPA’s immediate advice is to NOT resign or respond to the email.”); Patent Office Professionals Association, “Return-To-Office Coverage”, (available at <http://popa.org/blog/return-to-office-coverage/>) (“If you are covered by POPA, you are in a bargaining unit and the CBA covers you.”).

¹³¹ Fact Sheet: President Donald J. Trump Exempts Agencies with National Security Missions from Federal Collective Bargaining Requirements, White House (Mar. 27, 2025), <https://www.whitehouse.gov/fact-sheets/2025/03/fact-sheet-president-donald-j-trump-exempts-agencies-with-national-security-missions-from-federal-collective-bargaining-requirements/>. Litigation over the legality of the Executive Order is ongoing. Reid J. Epstein, *Ninth Circuit Allows Lawsuit Challenging Trump’s Federal Union Order to Proceed*, N.Y. TIMES (Aug. 1, 2025), <https://www.nytimes.com/2025/08/01/us/politics/collective-bargaining-ninth-circuit.html>.

¹³² See *supra* note 16.

¹³³ See *supra* note 16-17.

IV. Study Design

Having established the institutional context, we now describe the empirical study of the effects of DOGE on USPTO employee performance. First, we set forth how we obtained current data on patent employee activity, including both activity by patent examiners and non-examiner patent examining staff. We also obtain data on all separations and additions in early to mid-2025 for both of these sets of employees. We then describe the dataset, including basic summary statistics, including those events before and after DOGE activity. Finally, we describe the main empirical methodology, a difference-in-difference quasi-experimental design, that allows us to make causal estimates of the effects of DOGE.

A. Data Sources and Summary Statistics

To analyze how employee performance responds to a job-insecurity shock, and whether collective bargaining protections buffer that response at the U.S. Patent and Trademark Office (USPTO), we downloaded detailed data on patent examination activities from January 1, 2007 through December 31, 2025. This broad time frame was selected to allow us to observe multiple presidential administration changes and provide a robust baseline period that captures pre-DOGE conditions.

The specific data downloaded came from the USPTO’s “Open Data Portal.”¹³⁴ In particular, the Bulk Datasets of the Patent File Wrapper portion of the USPTO open data were downloaded. These Patent File Wrapper portion was chosen because this subset of data includes all patent application level information and every administrative event, including the date the event occurs, for each application. The data includes the date, event title, and code associated with each action in every patent or published application. These events include micro-level records of patent examination administrative actions, such as patent examiner actions like office actions, rejections, and allowances, and non-examiner patent examining staff actions such as reviews for patent applicant filing completeness, forwarding of applications and applicant correspondence to the proper examiner, and issuance of the patent grant. The Patent File Wrapper also identifies the particular examiner who performed the patent examiner events. The bulk data was used to collect all events in the identified time range— January 1, 2007 through December 31, 2025—for all applications filed from January 1, 2001 to December 31, 2025. This granular, wide swath of data allows us to track individual productivity and performance metrics over time, facilitating a precise analysis of the effects of DOGE interventions.

This full set of data was used to both observe whether examiner and non-examiner patent staff exhibit similar productivity patterns in the past and to capture multiple presidential administration changes. This data set includes 443,838,277 events occurring from January 1, 2007 through December 31, 2025.

¹³⁴ Available at <https://data.uspto.gov/home>.

We also focused more closely on a subset of our data—from 2022 through 2025.¹³⁵ This subset allowed us to avoid confounding effects from the COVID-19 pandemic and major patent law changes, such as the America Invents Act of 2011. This subset included events on 6,380,160 different applications. For these applications, 109,917,730 events occurred between January 2, 2022 through December 27, 2025. This was an average of 109,583 events per day and 552,725 per week.

Our empirical strategy leverages two key dates to identify exogenous shocks—two are early, the DOGE executive order and “five things” requirement, and one much later, the Union executive order:

1. January 20, 2025: On this date, a Monday, President Trump signed an Executive Order establishing DOGE, marking the official start of the agency's reform efforts.
2. August 28, 2025: President Trump signed an Executive Order invalidating the USPTO's union and accompanying protections. This was done under the guise of national security and abolished POPA.

We compare productivity metrics—specifically events performed by examiners or non-examiner patent examining staff workers—before and after these event dates in order to estimate the causal impact of job insecurity of employee performance.

To facilitate this comparison, we classified events in patent examination as being patent examiner generated, non-examiner patent examination staff worker generated, patent applicant generated, or generated by another person (such as the Patent Trial & Appeal Board (PTAB) or the Petitions Branch). There were 1,143 unique event types, and each was examined to determine who performed the event. Documentation from the USPTO assisted with categorizing each event type.¹³⁶ Table 1 sets forth examples of various events, identified by their event description, and which group of USPTO employees performed the event.

¹³⁵ January 2, 2022 is chosen as the start date because that day was the first day of the first week of 2022. December 27, 2025 is chosen as the end date for this subsample because it is an end of a bi-week, which is the typical pay period at the USPTO.

¹³⁶ See *Graham et. al., supra* at note 96 (listing event codes and their details in Appendix B).

Table 1

Examples of Events in USPTO Patent Application Files

Examiner	Applicant	Non-examination Patent Examiner Staff	Petitions Branch	PTAB
Advisory Action (PTOL- 303)	Response after Ex Parte Quayle Action	Adjustment of PTA Calculation by PTO	Petition Decision - Denied	PTAB Decision – Reversal
Final Rejection	Response after Final Rejection	Application Is Considered Ready for Issue	Petition Decision - Dismissed	PTAB Decision - Affirmance
Non-Final Rejection	Response after Non-Final Rejection	Completion of Preprocessing - Released to Assigned GAU	Petition Decision - Granted	PTAB Decision - Affirmance- in-part
Rejection – New Grounds	Supplemental Amendment after Final Rejection	Notice of Formal Drawings Required	Petition to Revive Application - Granted	PTAB Decision: Remand to Examiner (R. 41.77(d))

We also created subcategories for examiner events, including office actions, restrictions, and allowances. We organized the data by event, by date, by week, and by bi-week to align with the federal government pay periods and the patent examiner count system.

Based on this coding, the number of events in our subset of data from January 2, 2022 through December 27, 2025 that were done by examiners, non-examiner staff, the petitions branch, PTAB, and applicants was 69,048,122, leaving 40,869,608 events not assigned to any actor. These events were automated computer actions, such as “mailings” that are just generated emails reporting the previous action, such as “Issue Notification Mailed”.

We also used OPM’s FedScope raw data to determine the changes in employment for both patent examiners and non-examining patent staff from January 2025 to March 2025, the period shortly before and after the DOGE EO.¹³⁷ The table below reports the data, showing a net rise in patent examiners in January, presumably from a set of new hiring made by the end of 2024. Then, starting in February, both sets of employees see a net decrease, with neither category hiring many

¹³⁷ See <https://www.opm.gov/data/datasets/> (listing FedScope Employment data sets through March 2025). Federal employment data is not yet available for April. See OPM, *(Preliminary) March 2025 Employment Dataset*, (available at <https://www.opm.gov/data/datasets/Files/753/19f81b5c-d287-4322-a1ac-a6a4c235674b.pdf>).

employees at all, likely due to the hiring freeze put into effect by the Trump administration upon coming into office.¹³⁸ Then a larger drop in employees is observed in March of 2025. Both categories of employees have a net negative drop in numbers when comparing those in January to March of 2025—the time period in which the DOGE actions took place. The drop in non-examiner patent examination staff is larger—4.42% compared to 0.91%—however neither is dramatic.

Table 2

Net Changes in Employee Count for Patent Examiners and
Non-Examiner Patent Examination Staff

	Dec-24	Jan-25	Feb-25	Mar-25	Total % Drop From Jan to March
Examiners	9,781	9,996	9,959	9,905	
% drop		2.20%	-0.37%	-0.54%	-0.91%
Non-Examiner Patent Examination Staff	1,078	1,063	1,045	1,016	
% drop		-1.39%	-1.69%	-2.78%	-4.42%

B. Empirical Approach

To estimate the causal impact of DOGE’s initial attempts at administrative reform on employee performance at the USPTO, we employ a difference-in-differences (DiD) methodology.¹³⁹ This approach allows us to compare changes in productivity before and after DOGE-related events, relative to the same days, weeks, and bi-weeks in previous years. By using the same relative periods of the year, we account for potential seasonal variations in patent activity, such as slower activity in late November and December that occurs near the end of the calendar year. As noted

¹³⁸ See Presidential Actions, *Hiring Freeze* (Jan. 20, 2025) (available at <https://www.whitehouse.gov/presidential-actions/2025/01/hiring-freeze/>) (“By the authority vested in me as President by the Constitution and the laws of the United States of America, I hereby order a freeze on the hiring of Federal civilian employees, to be applied throughout the executive branch. As part of this freeze, no Federal civilian position that is vacant at noon on January 20, 2025, may be filled, and no new position may be created except as otherwise provided for in this memorandum or other applicable law. Except as provided below, this freeze applies to all executive departments and agencies regardless of their sources of operational and programmatic funding.”).

¹³⁹ Others have used difference-in-difference methodologies to study the USPTO. See, e.g., Frakes & Wasserman, *supra* note 11, at 639; Abrams & Wagner, *supra* note 11, at 520-21; Rohit Asirvatham & Michael Frakes, *Are Constitutional Rights Enough? An Empirical Assessment of Racial Bias in Police Stops*, 116 N.W. L. REV. 1481, 1508-11 (failing to find evidence “that a *Whren*-like standard intensifies racial bias in officers’ decisions to initiate stops); Stephen Rushin & Griffin Edwards, *An Empirical Assessment of Pretextual Stops and Racial Profiling*, 73 STAN. L. REV. 637, 637, 693-95 (2021) (finding that the *Arreola* decision is associated with a statistically significant increase in traffic stops of drivers of color relative to white drivers).

earlier, we analyze a key event date: January 20, 2025, when President Trump signed the Executive Order creating DOGE.

While we have multiple groups of workers performing patent events both before and after DOGE, what sets examiners apart from others at the USPTO is that examiners are part of a strong, professional union and non-examiner patent staff are not. This provides a natural contrast that enhances the validity of our difference-in-differences design.¹⁴⁰

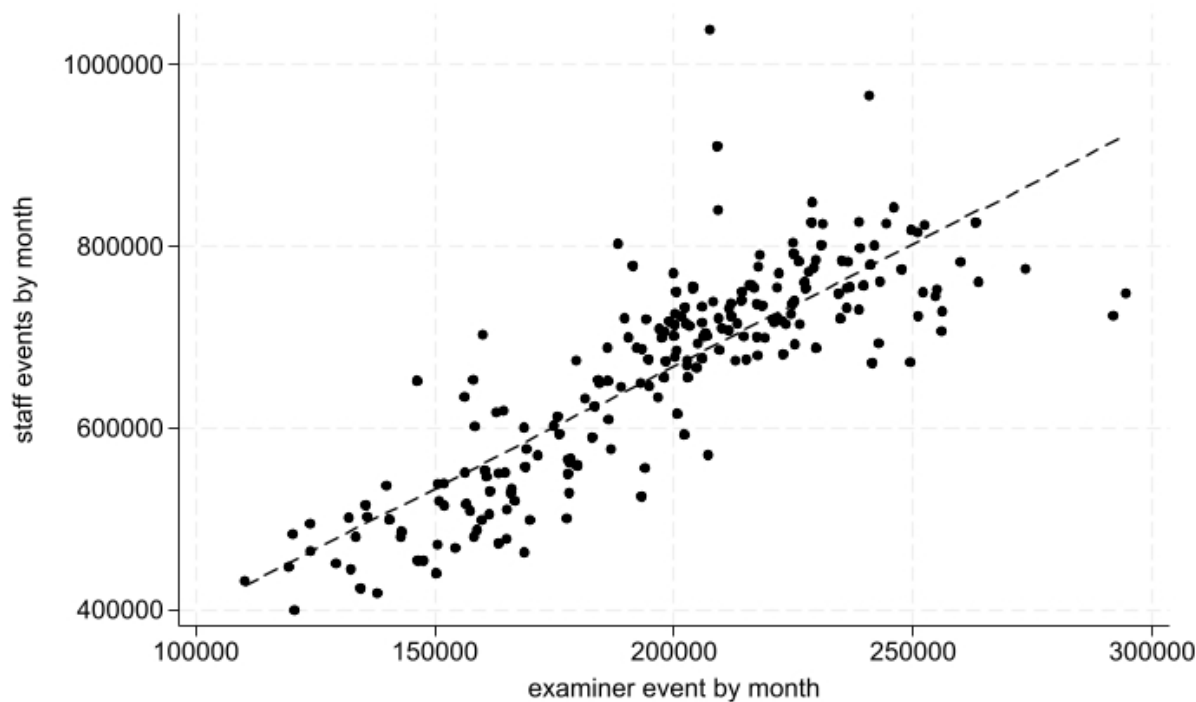
But first, we need to determine whether a difference-in-difference methodology is applicable given the two groups—patent examiners and staff—are arguably different. Optimally, we want the two groups to be as close to identical as possible.¹⁴¹ We first observe that the activity of examiners and staff followed similar trends over time prior to DOGE’s activities of 2025. We used our full set of data, from 2007 through 2024, to determine the relationship between the month year activity of examiner and staff. Figure 1 below depicts that relationship.

¹⁴⁰ See, e.g., Abrams & Wagner, *supra* note 11, at 532-33 (explaining that this situation “is used to control for effects other than” the change being analyzed).

¹⁴¹ *Id.* at 532 (noting that their study decision would want the two groups to be the same—in this study, the same country—but finding that the United States and Canada are “similar in many important ways”).

Figure 1

Non-Examining Staff and Examiner Activity Per Month 2007-2024



As seen in Figure 1, there is a monthly, consistent linear relationship between examiner and staff activity over a long period of time—2007 through 2024. The linear fitted line further emphasizes this relationship. Such a result is not surprising given that both groups work together on the same matters—patent applications—in the same administrative agency—the USPTO. We also correlated their monthly activity, with the results in Table 3 below. Notably, there is a strong, positive linear correlation between examiner and staff activity. This further confirms the results seen in Figure 1.

Table 3

Correlation Between Examiner and
Non-Examiner Patent Examination Staff Monthly Activity (2007-2024)

	Examiner Activity	Non-Examining Staff Activity
Examiner Activity	1.0000	
Non-Examiner Patent Examination Staff Activity	0.8332	1.0000

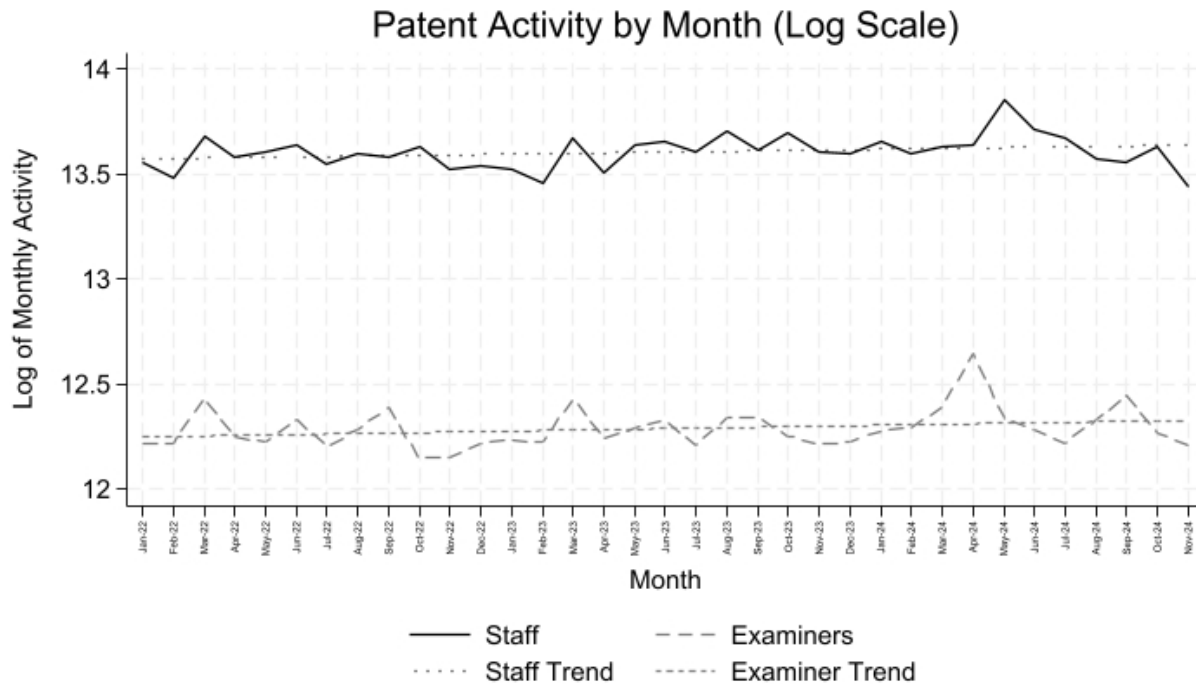
Accordingly, these two groups of workers exhibit similar performance patterns over a long period of time, allowing one to be a good control group for the other.¹⁴²

Not only are their performance patterns similar, we observe no evidence of differential pre-trends prior to DOGE. This can be seen below, in Figure 2, showing the logs of examiner and non-examiner patent examination staff monthly activity in the lead up until the intervention. The fitted linear trends for both groups are statistically indistinguishable from zero, and we detect no meaningful divergence between the groups during the pre-treatment period.¹⁴³

¹⁴² *See id.* at 532 n. 75 (“A good control group must be similar to the treatment group in the absence of the treatment.”). Notably, the results are substantially identical using raw, instead of logs, of activity.

¹⁴³ For examiners, the monthly change coefficient in a linear regression is 0.002 with a p-value of 0.165. For staff, the monthly change coefficient is 0.002 with a p-value of 0.157.

Figure 2



As shown in Figure 2, the two groups exhibit no statistically meaningful divergence in the pre-treatment period.¹⁴⁴ In other words, prior to January 2025, the two groups move together without any systematic widening or narrowing gap. This visual and statistical evidence supports the parallel trends assumption underlying our difference-in-differences (DiD) design.¹⁴⁵ Accordingly, we believe the DiD methodology is appropriate for estimating the causal impact of DOGE-related events on employee productivity.

This allows our analysis to focus on these two groups of USPTO employees: unionized patent examiners, who are protected by the Patent Office Professional Association (POPA), and staff who enjoy less labor protections. Building on prior literature,¹⁴⁶ we hypothesize that DOGE’s layoff threats and cost-cutting rhetoric would reduce employee activity—either through disengagement driven by stress and uncertainty or, alternatively, through increased effort by those seeking to signal value and avoid termination. The reporting suggesting DOGE sought large personnel changes without significant reliance on merit provides further merit to this hypothesis.¹⁴⁷ However,

¹⁴⁴ This is a common way to “operationalize the parallel-trends assumption . . . simple visual inspection.” Rushin & Edwards, *supra* note 139, at 707.

¹⁴⁵ *Id.* (“Unbiased difference-in-differences estimations require the existence of parallel pretrends. Essentially, we want to ensure that both our groups . . . were trending in a similar direction prior to the event in question. Otherwise, any divergence in trends after [the treatment] may simply be a continuation of this underlying difference in existing trends.”).

¹⁴⁶ See Part II, *infra*.

¹⁴⁷ See, e.g., Sam Berger, *Trump Administration’s Mass Layoffs of Federal Workers Are Illegal*, Center on Budget & Policy Priorities (May 2, 2025) (noting that the DOGE “effort began with an attempt to encourage voluntary resignations through the so-called “fork in the road” initiative and continued with the indiscriminate termination of probationary employees.”).

USPTO employees, being protected by union representation (examiners via POPA), may have less concerns about potential layoffs, while less protected employees (non-examining staff workers) are more concerned. The publicly available data and two employee groups subject involved in the same process—patent examination—and subject to the same intervention—DOGE—allows us to test which of these hypothesis is correct.

The DiD methodology offers several advantages. First, it controls for differences between treated and control groups that do not change over time, ensuring that any observed changes are attributable to the intervention rather than pre-existing disparities.¹⁴⁸ Second, it accounts for common trends affecting both groups, isolating the effect of the intervention from broader temporal dynamics.¹⁴⁹ Finally, it provides a straightforward framework for causal inference, leveraging natural experiments to identify treatment effects with minimal assumptions.¹⁵⁰

Another important interaction to consider is that both examiner's and staff's workload can be impacted by changes in applicant behavior. For example, some examiner and staff work can be in direct response to applicant events. To avoid changes in applicant activity interfering with our quasi-experimental design focused on measuring examiner and staff behavior, we also constructed a restricted sample that is limited to a technological area of the USPTO exhibiting a significant backlog between applicant filing and examiner and staff activity. That is, this restricted sample will focus on activity in a portion of the USPTO workforce that exhibits a significant backlog of applications. Specifically, we focus on technology center (TC) 1600, considering patent applications directed to biotechnology applications.¹⁵¹ This TC averaged almost two years from patent application filing to first action by the USPTO.¹⁵² Accordingly for this restricted sample focused on TC 1600 patent applications, there is a significant buffer between applicant activity and USPTO activity—by either examiner or staff. This buffer insulates changes in examiner and staff behavior from changes in applicant behavior. Notably, such a significant time delay between

¹⁴⁸ See, e.g., Frakes & Wasserman, *supra* note 11, at 639 (“Finally, we take the difference in these two separate estimates. This ‘difference-in-difference’ calculation should allow us to net out the effect of unobservable drivers of PTO practices and target our inquiry on the story at hand.”).

¹⁴⁹ See, e.g., Abrams & Wagner, *supra* note 11, at 521 (“However, we note that this drop could be due to general long-term trends (like an increase in R&D funding among larger entities) rather than the priority rule change itself. Thus we use a difference-in-difference technique, which allows us to address any overall trends by using U.S. patenting behavior as a control group.”); Choi, *supra* note 11, at 818 (“By focusing on the difference in differences, the model controls for pre-existing differences between the treatment and control groups, as well as static trends. . . . [T]his method controls for level differences between the groups that persist over time, as well as time trends that apply to all regulations.”).

¹⁵⁰ See, e.g., Rushin & Edwards, *supra* note 139, at 710 (“Because we exploit a policy change, we are able to sidestep some of the ordinary concerns surrounding veil-of-darkness methodologies.”); Choi, *supra* note , at 818 (“By altering the deference regime applicable to one specific category of regulation, *Mayo* created a natural experiment with a treatment group (interpretative tax regulations) and a control group (all other regulations).”); Jonathan Klick & Thomas Stratmann, *Medical Malpractice Reform and Physicians in High-Risk Specialties*, 36 J. LEGAL STUD. 121, 121-22 (2007) (using the differences between doctors in high-risk specialties compared to those in low risk to “control for unobserved effects that correlate with the passage of medical malpractice reforms”).

¹⁵¹ <https://www.uspto.gov/patents/contact-patents/patent-technology-centers-management>.

¹⁵² Specifically, the average pendency to first action by the USPTO from January 2022 through January 2025 is 21.1 months. See Patents Pendency Data January 2026, available at <https://www.uspto.gov/dashboard/patents/first-action-pendency-by-tc.html>.

applicant filing of a new application and USPTO activity exists for all technology centers, although some a less, with TC 2400 averaging 16.9 months.¹⁵³

This approach mirrors the strategy used Bonica, Chilton, Goldin, Rozema, & Sen when studying the influence of clerk ideology on Supreme Court justice voting.¹⁵⁴ A concern raised by their study is that justices are likely to seek out clerks that share their ideology.¹⁵⁵ To address this, they exploit the Supreme Court clerkship hiring process that often results in hiring one to two terms before the clerkship actually begins.¹⁵⁶ As they explain, this lag means that changes in clerk ideology reflect shifts in the justice’s ideology during the prior terms, rather than being a direct response to it. This design helps isolate the causal influence of clerks.¹⁵⁷

Similarly, our restricted subsample focuses on TC1600 technology fields with the largest backlogs until a first office action. Because these applications had been waiting longest for examiner action, applicant activity during the studied period was relatively infrequent—meaning any observed changes in examiner and staff behavior are more plausibly attributable to the factors we aim to study, such as the impact of DOGE, rather than reactions to applicant-driven activity.

The restricted subsample, again covering applications in TC 1600 for years 2022 through 2025, includes 8,604,663 events in total, with 3,342,609 of those events not performed by any identified actor or were events by examiners or staff workers after an action by another in the same window. Table 4 below provides summary statistics for the full and restricted sample, highlighting key metrics for examiner and staff worker activity, as well as activity by others.

¹⁵³ *Id.* Notably, even with those TC’s with smaller backlogs, we observe similar results to those with longer backlogs, such as TC 1600.

¹⁵⁴ See Adam Bonica et. al., “*Legal Rasputins? Law Clerk Influence on Voting at the US Supreme Court.*” 36 J. L., ECON. & ORG. 1 (2019) (detailing methodology).

¹⁵⁵ *Id.* at 2 (explaining concern about shared ideology between justices and clerks).

¹⁵⁶ *Id.* at 13-14.

¹⁵⁷ *Id.*

Table 4Summary Statistics of Dataset by Actor¹⁵⁸

Action	Subsample (2022 to 2025) (Count)	Restricted Subsample (2022 to 2025) (Count)
Examiner – Total	10,445,224 (15.13% of events)	934,359 (17.77% of restricted events)
Examiner – Office Actions	2,607,361 (3.78% of events)	239,141 (4.54% of restricted events)
Staff – Total	36,433,888 (52.79% of events)	2,531,962 (48.12% of restricted events)
Staff – Application Determined Complete	1,805,791 (2.62% of events)	98,031 (1.86% of restricted events)
Applicant	21,296,629 (30.84% of events)	1,677,086 (31.87% of restricted events)

V. Results and Analysis

Before turning to the implications of our findings, we begin this Section by presenting the empirical results of our study. Our examination of the full dataset is divided into two parts. First, we analyze activity surrounding the DOGE EO to assess the initial shock effects of this administrative intervention on both patent examiners and staff. We then examine whether patent examiner activity changes following the subsequent Union EO, which eliminated patent examiners' union protections. The discussion below is organized accordingly.

A. Performance Under Job Insecurity With and Without Collective Bargaining Protections

We first examine how productivity responds to a job-insecurity shock, and whether collective bargaining protections buffer that response. Specifically, we focus on examiner and staff activity beginning on January 2, 2022 through the bi-week ending on April 12, 2025.¹⁵⁹ We then test the robustness of these findings using a restricted sample that isolates employee-initiated actions. Next, we explore alternative explanations, including seasonal variation, workforce attrition, and shifts in task difficulty. Finally, we assess whether similar productivity changes occurred during prior presidential transitions to determine whether the observed effects are unique to DOGE. Together, these analyses provide a comprehensive picture of how institutional disruption and job insecurity shaped employee behavior at the USPTO.

We set out to see if examiners and staff changed their productivity in response to DOGE and, if this response varied amongst the two employee groups. The simplest and most direct way to do

¹⁵⁸ The percentages are the percentage of coded events, not events unassigned to actors.

¹⁵⁹ This date is selected because it provides adequate room to measure changes through 2025 and both before and after the DOGE EO on January 20, 2025 through the five things email requirement that began February 22, 2025 while not getting too far from the DOGE intervention in order to properly measure the intervention's initial shock to USPTO employee activity.

this is to compare the average number of events per day by each actor in our dataset before and after critical dates. In Table 5, the means are compared both before and after the DOGE executive order for both the subsample and the restricted subsample. A two-tailed t-test¹⁶⁰ on the total activity per day, per actor is performed to see if the differences in activity before and after DOGE are statistically significant. We observe similar results, even when focused on a TC of the USPTO where a nearly two-year delay between application filings and examiner and staff activity exists.

Table 5

Mean of Total Activity Per Day in Subsample and Restricted Subsample¹⁶¹

Action	Before DOGE EO	After DOGE EO
Examiner – Subsample	7,081.90	7,296.00
Examiner – Restricted Subsample	614.28	712.69**
Staff – Subsample	25,345.87	16,481.74**
Staff – Restricted Subsample	1,887.97	1,219.65**
Applicant – Subsample	14,883.55	8,216.22**
Applicant – Restricted Subsample	1,260.09	777.39**

These differences amongst employee types could, however, be due to the time of year the DOGE actions are taking place. That is, seasonal variations may simply mean that the end of the calendar year through the beginning of the next year always involves a drop off in activity for certain employees while other’s activity remains constant.

Accordingly, we determined the difference in activity totals, per day, between 2025 and the average of activity for the same relative calendar day in 2022-2024. If there are seasonal effects, this window of analysis would take those into account and there shouldn’t be differences between activity trends in 2022-2024 and 2025, which is impacted by DOGE. These differences, on a day-to-day basis, we done using the subsample focusing on the same window of days—the first week of the year through the second week of April. Below, Figure 3 presents the mean log deviation before and after DOGE for both examiners and staff in the subsample. The graph shows examiner and staff activity in two windows—the first being from October right before the DOGE intervention. The second is starting on January 20 forward. The mean log values are for the given

¹⁶⁰ A two-tailed t-test can be used to determine whether the difference between averages is statistically significant. See, e.g., Clark D. Cunningham et. al., *Plain Meaning and Hard Cases*, 103 YALE L.J. 1561, 1600 (using a two-tailed t-test to see if the average response in survey results were statistically significant).

¹⁶¹ A * means the two-tailed t-test on activity for a given actor before and after DOGE resulted in a p-value < 0.05; ** means a p-value < 0.01.

days before and after these DOGE-related events are shown, including 95% confidence intervals calculated using the t-distribution.¹⁶²

Figure 3

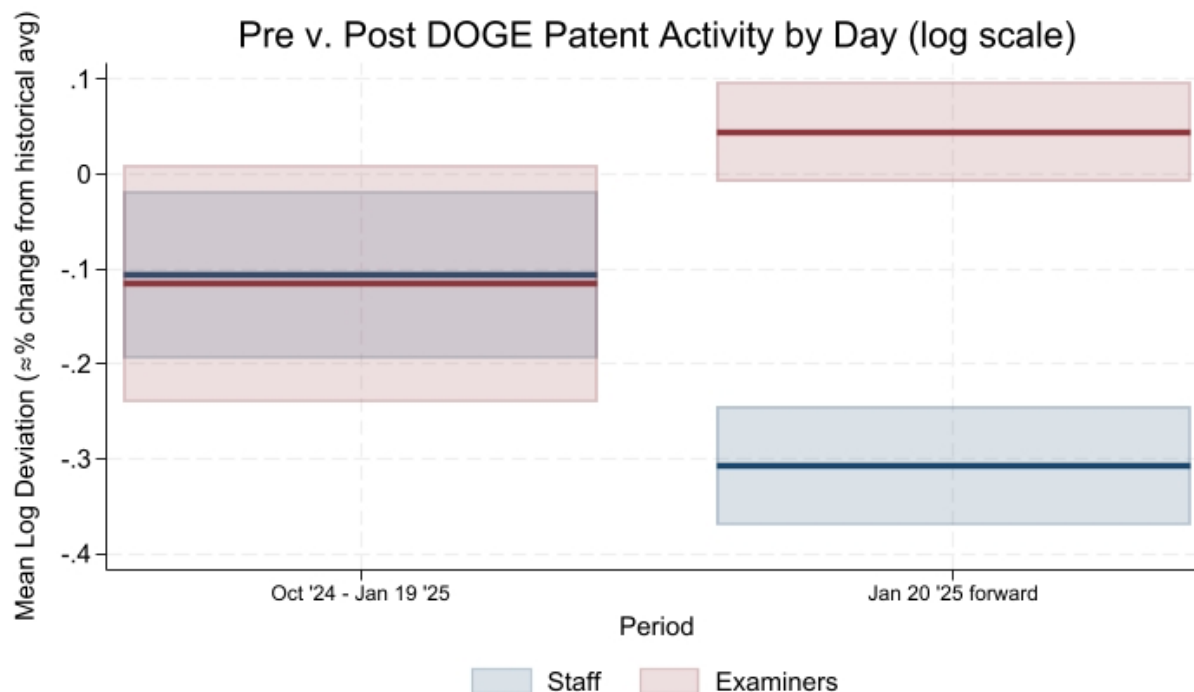


Figure 3 reveals a consistent pattern: the change in mean staff worker activity relatively declined following the DOGE Executive Order across the subsample. In contrast, examiner activity remained stable, with no statistically significant change observed in response to DOGE. This indicates that the two employee groups—differentiated by their access to union-backed job security and telework protections—are reacting differently to the DOGE events, they are not simply seasonal related differences. Put another way, examiner activity confidence intervals overlap before and after DOGE, while staff do not and staff activity decreases.

To further explore whether these differences are attributable to DOGE events, and not other factors, we performed a linear regression in which the dependent variable is total daily activity controlling for month fixed effects. The table below, Table 6, reports the results of such a regression in total daily activity for examiner and non-examining patent staff activity in the subsample. The regression pools both groups—examiners and staff—into a single regression dataset where activity is identified as examiner or not examiner (and therefore staff). The unit of observation is the actor-by-day, and the dependent variable is the total number of events performed

¹⁶² As a robustness check, we exclude observations from January 17–20, 2025 to account for potential anticipatory or transition-period effects surrounding the formal issuance of the DOGE Executive Order. We also re-estimate the models using placebo treatment dates in which the DOGE intervention is coded as beginning several days earlier. The results are substantively unchanged under both specifications.

by that actor group on that day. The regressions below include an interaction term between the staff activity variable and the DOGE event. Errors are clustered by the day.

Table 6¹⁶³

Linear regression models on daily activity

	Activity	Log Activity	TC 1600 Activity Only	TC 1600 Log Activity Only
DOGE_EO	50.10	0.05	94.86**	0.14*
	(245.73)	(0.06)	(22.37)	(0.06)
Staff	19,414.90**	1.39**	1,273.69**	1.12**
	(360.19)	(0.019)	(34.15)	(0.02)
DOGE_EO x Staff	-6,665.02**	-0.36**	-766.73**	-0.55**
	(664.86)	(0.05)	(51.86)	(0.05)
Month	X**	X**	X**	X**
Constant	6,527.99**	8.46**	555.46**	6.03**
R-squared	0.45	0.36	0.38	0.26

Table 6 confirms that the productivity divergence between examiners and staff, seen in the means in graphs previously presented, persists when pooling both groups and introducing fixed effects for the month and year. Staff exhibit a significant decrease in activity relative to examiners following the DOGE Executive Order, even after adjusting for temporal effects. This observation holds true when isolating to a part of the USPTO, TC 1600, that has a significant backlog, and thus buffer, between applicant behavior and examiner and staff behavior. And all of this holds true when controlling for the month and year of observed activity.

Another explanation we explored was whether the changes in activity were due to changes in the number of personnel in the employee categories. Specifically, the decline in staff activity may be due to more staff quitting, retiring, or being fired following the launch of DOGE, relative to patent examiners. To assess this possibility, we examined OPM employment data from January through March of 2025. While there was some attrition among non-examining staff, the percentage who

¹⁶³ * is for $p < 0.05$ and ** for $p < 0.01$. Errors are reported in parenthesis and clustered by day.

left during this period was relatively small—less than 5%—suggesting that workforce reductions alone are unlikely to account for the magnitude of the productivity decline.

In order to explore this further—whether our results are driven by variances in number of employees—we gathered data from OPM’s FedScope for the full USPTO event activity subsample. This includes USPTO employment numbers for examiners and staff from 2021 onward. The older federal employment data is available on FedScope on a quarterly basis and provided at the individual employee level.¹⁶⁴ As summarized in Table 2, both examiner and staff headcounts declined modestly between January and March 2025. Using this data, we totaled the number of examiner and staff for each quarter from 2021 forward. We then determined the number of events, per day, per category of employee for the full subsample. Since we had only quarterly employee numbers, we interpolated the daily employee number between the quarterly reporting periods. Below, in Table 7, we report the average number of events, per day, per employee before DOGE and after DOGE. Notably, and consistent with our main results, there is no statistically significant change on a per employee basis for examiner activity. However, staff activity, per employee, exhibits a statistically significant drop. This decrease is approximately 40%, similar to the 35% decrease observed when just looking at event activity.¹⁶⁵

Table 7

Mean of Total Activity Per Day, Per Employee in Subsample¹⁶⁶

	Before DOGE EO	After DOGE EO
Examiner	0.78	0.73
Staff	25.37	16.77**

To further address concerns that external behavioral changes, such as patent applicant activity, may be driving changes in examiner and/or non-examiner patent examination staff productivity, we leverage the current backlog in patent applications. Because the backlog of unexamined applications exceeds two years,¹⁶⁷ examiner productivity during the study period is driven by previously filed applications already in the queue. This backlog, combined with our analysis above that focuses on TC’s experiencing a very high backlog, allows us to isolate examiner and staff behavior on a per-application basis. Moreover, although all patent examiners are covered by the POPA collective bargaining agreement, probationary examiners do not have the same rights as a

¹⁶⁴ See OPM FedScope, available at <https://www.opm.gov/data/datasets/Index.aspx?tag=FedScope>.

¹⁶⁵ We do not have data on the prior work arrangements of non-examiner staff. Some may have already been working in person, others may have been remote but living locally. Some may have even been remote and living far from the USPTO, requiring relocation. Because we cannot disaggregate these categories, our estimates likely understate the full disruptive impact of DOGE’s return-to-office mandate.

¹⁶⁶ A * means the two-tailed t-test on activity for a given actor before and after the identified date resulted in a p-value < 0.05; ** means a p-value < 0.01.

¹⁶⁷ See *supra* note 92.

non-probationary employee.”¹⁶⁸ Future work could explore whether this subgroup exhibited different behavioral responses. However, overall examiner productivity remained stable, suggesting that any such effects were limited in scope.

A further explanation may be that while productivity did not technically drop for patent examiners, patent examiners shifted from doing hard work to easy work. That is, they kept their numbers up—to meet the count system requirements—but did so in an easier way that was less burdensome.¹⁶⁹ So, both groups of employees were less productive, it’s just that examiner lack of productivity is exhibited in less effort, not less quantity of work.

To test this, we took a more granular look at patent examiner activity prior and after DOGE and calculated the instances where an examiner issued a first-action allowance. That is, the examiner did not reject the patent application for failure to meet the legal requirements for patentability. Instead, the examiner, in their first merits-based determination on the patent application, simply allowed the application. A first-action allowance is commonly seen as evidence of “weak” patent examination—where an examiner simply moves the patent application on to issuance without scrutinizing it. If patent examiners are responding to DOGE by doing the same amount of work, just easier work, then we would observe a difference in first-action allowances after DOGE—they would rise.

As we did when comparing patent examiner and non-examiner patent examining staff activity, we compare the average number of first-action allowances per day in our dataset before and after critical dates. In Table 8, the means are compared both before and after the DOGE executive order. A two-tailed t-test on the total activity per day is performed to see if the differences in activity before and after DOGE events are statistically significant.

¹⁶⁸ See, e.g. Collective Bargaining Agreement Between U.S. Patent & Trademark Office & Patent Office Prof’l Ass’n, Arts. 25 & 31 (Dec. 11, 2024), (available at http://popa.org/static/media/uploads/CBA/popa_agreement.pdf) (noting that only non-probationary employees have Family Medical Leave Act rights and protections against disciplinary and adverse actions based on conduct).

¹⁶⁹ In a different context, Frakes & Wasserman found empirical evidence that when examiners have reduced time to examine an application, the quality of examination decreases. Michael D. Frakes & Melissa F. Wasserman *Is the Time Allocated to Review Patent Applications Inducing Examiners to Grant Invalid Patents?: Evidence from Micro-Level Application Data*, 99 REV. ECON. & STATISTICS 3 (2017) (“Our results suggest that as an examiner is given less time to review an application, the less active she becomes in searching for prior art, the less likely she becomes to make obviousness rejections (which are especially time-intensive exercises), and the more likely she becomes to grant the patent.”).

Table 8Mean of Total Activity Per Day¹⁷⁰

Action	Before DOGE EO	After DOGE EO
First-Action Allowance	359.85	276.84*

As seen in Table 8, the introduction of DOGE events reduces the average first-action allowances and this difference is statistically significant. This suggests that patent examiners did not shift to easy counts—simply allowing patent applications—to maintain productivity.

To further explore this question, a linear regression introducing month year fixed effects on first-action allowances was performed. This allowed us to observe whether first-action allowances changed after the DOGE EO while also controlling for temporal effects. Table 9 below reports the results.

Table 9¹⁷¹

Linear regression models on first-action allowances by examiners

DOGE EO	-0.011**
	(0.001)
Month-year	X**
Constant	0.078**
R-squared	0.001

Notably, the DOGE executive order is negatively correlated with first-action allowances. This means that DOGE is associated with a decrease in “easier” productivity for patent examiners, not an increase. These findings, combined with those showing maintenance, if not increase in patent examiner activity after the DOGE events, indicate that patent examiners are not shifting to simply rubber-stamping patent applications to maintain productivity.

¹⁷⁰ A * means the two-tailed t-test on activity for a given actor before and after DOGE only and the activity before and after the “five things” email resulted in a p-value < 0.05; ** means a p-value < 0.01.

¹⁷¹ * is for p<0.05 and ** for p<0.01. Errors are reported in parenthesis.

Another question is whether we are simply observing changes that occur when any new presidential administration takes office. That is, when presidents change, administrative agencies, such as the USPTO, go through changes of their own around these transitions. Accordingly, we are not observing the DOGE-effect, we are observing a general, administrative change over effect.

To answer this question, we turn back to our full dataset that covers all activity from 2007 to present. We use that dataset to perform a “triple-differences” analysis¹⁷² and isolate whether our results are simply from the change in administration. That is, we evaluate whether the lower staff productivity is an occurrence whenever a new presidential administration comes to power or, to be more specific, correlated with President Trump in general, not the second term of President Trump that coincides with DOGE.

We leverage the fact that our full dataset includes four administration changes¹⁷³—Obama in 2009, Trump 1 in 2017, Biden in 2021, and Trump 2 in 2025—to see if we observe examiner or non-examiner patent examination staff productivity changes during those transitions. Accordingly, we defined 180-day windows around each first day in office for these four administrations and determined whether total daily activity by examiners or staff changed across administration transitions. However, our triple-difference analysis¹⁷⁴—using prior administrative transitions as controls—yields consistent results, suggesting that the observed effects stem from the specific threat of job insecurity posed by DOGE or the unique dynamics of President Trump’s second term, rather than routine political turnover. The results are reported in Table 10 below.

¹⁷² See, e.g., Klick & Stratmann, *supra* note 150, at 5128-29 (employing a triple-differences analysis to find that “only noneconomic damage caps have a consistently statistically significant effect on the number of doctors per capita in high-risk specialties who are practicing in a state”).

¹⁷³ This is the additional observed fact—administrative changes—that facilitates a triple differences approach. See, e.g., Frakes & Wasserman, *supra* note 11, at 659-660.

¹⁷⁴ A triple-differences analysis, controls for another layer of potential confounding factors—here being a change in administration—is a valuable tool when natural experiments provide the necessary data structure, as they do in this instance. See, e.g., Frakes & Wasserman, *supra* note 11 at 659-60 (utilizing the additional, observed fact of patent applicant company size, in their ‘triple differences’ specification).

Table 10¹⁷⁵

Linear regression models on examiner and staff activity per day

	Obama—2009		Trump 1—2017		Biden—2021		Trump 2—2025	
	Examiner	Staff	Examiner	Staff	Examiner	Staff	Examiner	Staff
Inauguration Day & After	661.989	569.560	779.341	1703.253	645.09	1180.176	699.945	-3068.011*
	(754.264)	(1270.73)	(579.038)	(1953.82)	(543.856)	(1958.907)	(592.550)	(1461.27)
Constant	4883.571**	13024.45**	6762.10**	20484.98**	6633.418**	21124.75**	6446.714**	16694.26**
R-Squared	0.004	0.001	0.005	0.004	0.002	0.002	0.002	0.024

The only negative and statistically significant coefficient is during the 90-day window after President Trump took office in 2025, during his second term. This is also the same window, starting on January 20, 2025, that begins with the DOGE Executive Order. None of the other administration changes, including President Trump’s first term in office, coincide with a negative coefficient or a statistically significant change from the 90 days prior to the administration change. This further confirms that the difference in staff activity is unique to President Trump’s second term in office, which is also when DOGE takes effect.

B. Later Patent Examiner Union Protection Loss

We now leverage the remaining data from later in 2025 to examine the impact of the Union EO on patent examiner activity. This analysis helps assess whether union protections insulated examiners from DOGE-related concerns, enabling them to maintain consistent levels of activity following the DOGE reforms. Specifically, we examine the period beginning after the DOGE EO on January 20, 2025, through the issuance of the Union EO on August 28, 2025, and extending to the end of the final bi-weekly period in the dataset on December 27, 2025. This structure yields two analytical windows: (1) the period between the DOGE EO and the Union EO (January 20–August 28), and (2) the period following the Union EO (after August 28–December 27). We first report the means of activity for both periods—both before and after the Union EO—in Table 11 below.

¹⁷⁵ * is for $p < 0.05$ and ** for $p < 0.01$. Errors are in parentheses. We note that the level of significance observed is less for staff before and after Trump’s second inauguration when compared to our earlier, more targeted models regarding staff activity after DOGE. This is likely due to the difference in the window of observation—90 days before and 90 days after inauguration. This difference is driven by a shift in analysis in the robustness check taking place in Table 12—querying whether the change in administration, not DOGE and the “Five Things” email, is correlated with the change in performance.

Table 11

Mean of Total Activity Per Day in Subsample sample before and after Union EO¹⁷⁶

Action	DOGE EO only Period¹⁷⁷	Union EO and DOGE EO
Examiner –Subsample	7,592.81	6,668.81*

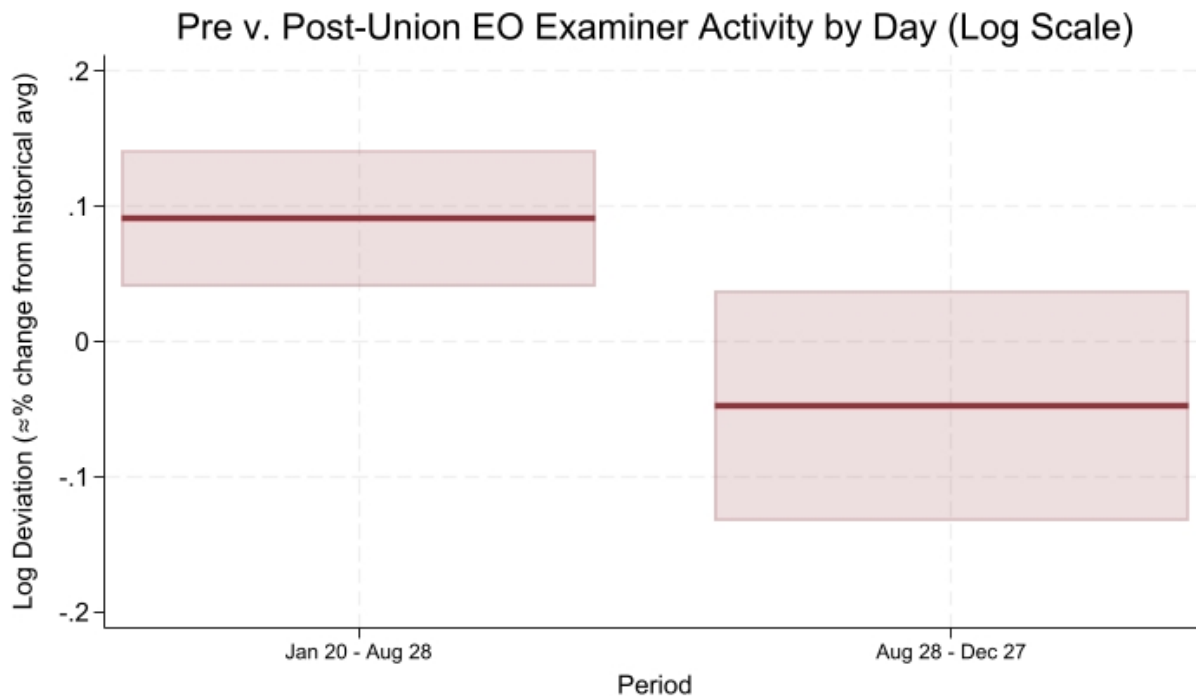
Notably, examiner activity decreases following the Union EO. After losing POPA protections, examiner activity declines by roughly 15 percent, and this decrease is statistically significant. By contrast, as shown in Table 5 above, examiner activity exhibits a slight increase following the DOGE EO, and that change is not statistically significant. Taken together, these results reinforce one another by suggesting that the removal of union protections—rather than the earlier DOGE reforms themselves—is associated with meaningful reductions in USPTO employee activity, be it by examiner or staff.

These results are also visualized in Figure 4, which graphs the log of daily examiner mean activity level in the post-DOGE period, comparing activity before and after the Union EO.

¹⁷⁶ A * means the two-tailed t-test on activity for a given actor before and after DOGE only and the activity before and after the “five things” email resulted in a p-value < 0.05; ** means a p-value < 0.01.

¹⁷⁷ This is the period from the DOGE EO up to the issuance of the Union EO. Accordingly, it captures the period in which patent examiners still had POPA protections.

Figure 4



While the differences in examiner activity were above zero shortly after DOGE, there is a negative difference after the Union EO. Examiners, on average, performed less once union protection was removed by executive order.

VI. Implications

Contrary to the conventional wisdom that all federal employees would be adversely affected, our difference-in-differences analysis reveals that employees with lesser union protections experienced a 35% average decline in productivity per day, following the DOGE announcements, while strongly unionized patent examiners showed no significant change.¹⁷⁸ Then, when examiners lose union protections, their productivity decreases as well, by roughly 15%. These results have significant implications for understanding the effects of administrative reforms, particularly those such as DOGE, on the federal workforce more broadly and for evaluating the role of unions, particularly specialized and professional based unions, in insulating employees from institutional shocks and periods of uncertainty during transitions.

The findings from our empirical analysis carry three central implications for administrative reform, institutional design, and the evaluation of workforce protections. First, reforms driven by abrupt announcements, unclear mandates, and high-salience political messaging—such as those implemented by DOGE—can impose significant productivity costs, especially among employees lacking institutional insulation. While implementation style likely plays a key role, the observed

¹⁷⁸ See Part V, *infra*.

effects may also reflect the real and immediate fear of a reduction in force, which can disrupt performance even in the absence of formal layoffs. Second, the observed stability among unionized examiners challenges the conventional narrative that public-sector unions hinder efficiency, instead revealing how such protections may, in certain circumstances, help sustain performance during episodes of uncertainty and disruption.¹⁷⁹ Third, our within-agency comparative design offers a methodological contribution for studying institutional reforms: by exploiting differences in union coverage among otherwise similarly situated employees, we demonstrate a replicable approach to evaluating the real-world consequences of reform. These three implications are explored more below.

A. Administrative Costs of “Shock-Based” Reform

First, our findings suggest that administrative reforms such as DOGE, that are shaped by sudden announcements of RIFs, demands for further accountability, and general uncertainty can harm administrative productivity. Our results demonstrate that administrative reforms characterized by abrupt intervention and institutional ambiguity—exemplified by DOGE’s early implementation—can degrade public-sector productivity.

These findings resonate with longstanding concerns in administrative law about the fragility of agency performance under conditions of procedural instability. As Christopher Walker has argued, the Administrative Procedure Act (APA) was designed to provide a stable, quasi-constitutional framework for agency behavior, but it has evolved largely through judicial innovation rather than legislative modernization.¹⁸⁰ Walker highlights how the absence of clear, updated statutory guidance has allowed the administrative common law to proliferate, which in turn has created uncertainty about the procedural expectations agencies must meet.¹⁸¹ In this light, DOGE’s abrupt implementation strategy—marked by sudden directives, ambiguous mandates, and disregard for established norms—can be seen not only as disruptive in practice but also as symptomatic of a broader failure to modernize the APA to meet the demands of the contemporary administrative state.¹⁸²

This theoretical concern is borne out in our empirical findings. In particular, we observe a 35% decline in daily productivity among non-examiner patent examination staff following DOGE’s workforce reduction campaign, stark contrast to the relative stability among strongly unionized patent examiners. This divergence underscores how abrupt, top-down reforms can disproportionately disrupt segments of the workforce that lack institutional protections. These

¹⁷⁹ While our findings suggest that unionized examiners maintained stable productivity during DOGE’s reforms, we caution against interpreting this as definitive evidence that union membership enhances efficiency. In this case, union status was closely tied to other institutional protections—most notably, the ability to continue remote work—which may have insulated examiners from the disruptive effects of DOGE’s rollout. It is possible that the observed performance differences reflect the benefits of physical and psychological distance from the reform effort, rather than a generalizable “union effect.” Moreover, we cannot rule out the possibility that examiners might have been even more productive in the absence of union constraints.

¹⁸⁰ Christopher J. Walker, *Modernizing the Administrative Procedure Act*, 69 ADMIN. L. REV. 629, 630–31 (2017) (describing the APA as a “superstatute” that has remained largely unchanged since 1946); Jon D. Michaels, *Running Government Like a Business . . . Then and Now*, 128 HARV. L. REV. 1152, 1160 (2015).

¹⁸¹ *Id.* at 636–38 (discussing the rise of administrative common law and the judiciary’s dominant role in shaping agency procedure).

¹⁸² *Id.* at 644–46 (arguing for bipartisan legislative reform to clarify and stabilize agency rulemaking procedures).

findings complicate the prevailing assumption that all employees will respond uniformly to performance-oriented reform efforts. Rather than motivating greater efficiency, sudden reforms that generate anxiety, threaten job loss, and lack implementation clarity can impair employees' capacity to maintain productivity and deliver on their core responsibilities. They may even prompt agency-level resistance or “administrative nullification,” as Evans and Short describe, where bureaucracies effectively negate reform through noncompliance.¹⁸³

Our study indicates that these effects are not merely seasonal blips. As detailed in Part V above, the decline in non-examiner patent examination staff performance persisted across both the unrestricted and restricted datasets and is not explained by a reduction in staff or simple changes in administration, suggesting a robust and sustained effect. The regression reported in Table 7 show that even after controlling for time and seasonality, non-examiner patent examination staff experienced statistically significant and substantial productivity declines post-DOGE EO and “Five Things” email. This pattern was not observed during any other presidential transition (Table 9), reinforcing that it was DOGE’s (or Trump’s second term’s) distinctive style—rather than generic political change—that drove the decline. DOGE’s tactics resemble what Robert Tsai terms a “manufactured emergency,” in which exaggerated crises are used to justify exceptional administrative disruption.¹⁸⁴

Theoretically, these findings resonate with models of organizational disruption that stress the importance of procedural fairness, communication clarity, and institutional continuity in preserving morale and effort during reform.¹⁸⁵ In a setting, such as the USPTO, where federal agencies rely heavily on consistent and procedural work (e.g., form-checking, routing, classification), unpredictability appears to not be a tool for efficiency but a liability. Such disruption mirrors past bureaucratic overhauls like the Department of Homeland Security’s creation which yielded confusion and weakened agency function.¹⁸⁶ Scholars of public administration have long warned that “shock-and-awe” strategies tend to incur long-term performance costs, even when they yield short-term attention. Our results give empirical weight to this claim: abrupt reforms like DOGE may generate headlines, but they risk undercutting the very functions they aim to improve.

These findings also add another dimension to Nicholas Bednar’s recent scholarship on Presidential control over the administrative state.¹⁸⁷ Bednar finds that Presidents need not only control over administrative agencies to implement their policy goals, but also for those agencies to have the necessary capacity to fulfill those goals.¹⁸⁸ This “administrative capacity” “embodies the expertise and experience of the workforce, the material resources available to the agency, and the processes

¹⁸³ Riley Doyle Evans & Stefen R. Short, *Administrative Nullification and the Precarity of Carceral Reform*, 138 HARV. L. REV. F. 182, 185–86 (2025) (defining administrative nullification as the agency-level suspension of reform statutes through contrary implementation or refusal to act).

¹⁸⁴ Robert L. Tsai, *Manufactured Emergencies*, 129 YALE L.J. F. 590, 594–95 (2020) (arguing that fabricated or exaggerated crises enable executives to bypass democratic norms and suspend institutional constraints).

¹⁸⁵ See Part III, *infra*.

¹⁸⁶ Eli Nachmany, *Legislative Hurdles and Unintended Consequences: Potential Pitfalls of Vice President Biden’s Interest in Cabinet Restructuring*, U. CHI. L. REV. ONLINE *1, *2–3 (2020) (detailing the disorder and implementation failures following the rapid creation of the Department of Homeland Security).

¹⁸⁷ See Bednar, *supra* note 9.

¹⁸⁸ *Id.* at 830-31 (finding empirically that “capacity has a significant effect on rulemaking initiation and completion”).

that promote efficiency and teamwork within the agency.”¹⁸⁹ Bednar even notes that sometimes these two levers—control and capacity—can work against each other, with an increase in presidential control reducing an agencies’ capacity.¹⁹⁰

Our results add further nuance to the interaction between presidential control and administrative capacity Bednar discusses. We find evidence of the “double-edge sword”¹⁹¹ of increased presidential control, with DOGE’s immediate push for reforms, a form of control, reducing the USPTO’s staff’s capacity to carry out the agency’s mission. DOGE events reduce non-examiner patent examining staff productivity, a form of reduced capacity. However, we also find that public sector union protections—those enjoyed by patent examiners—can prevent the control versus capacity tradeoff. As the President seeks to exercise more control over agencies, via DOGE, the capacity for union protected employees does not appear to decrease. Our findings build upon Bednar’s insights and offer further complexity to the administrative control and capacity discussion.

Taken together, these findings suggest that the costs of “shock-based” administrative reform are not merely operational—they are structural. They reflect what K. Sabeel Rahman has termed the erosion of the “pax administrativa,” where destabilizing reforms undercut the administrative state’s capacity and legitimacy as a democratic institution.¹⁹² By undermining the procedural stability and institutional trust that enable agencies to function effectively, such reforms risk hollowing out the very capacity they purport to enhance. As policymakers and scholars continue to debate the future of administrative governance, our study underscores the need for reform strategies that prioritize clarity, continuity, and respect for institutional safeguards. Without these, even well-intentioned efforts at control may erode the administrative foundations necessary for durable and effective governance.

B. Reframing the Role of Public Sector Unions

Second, our findings challenge prevailing assumptions about the role of unions, particularly public sector unions and more broadly about the value of institutional protections that promote job security and workplace stability. While much of the debate centers on union membership, our results suggest that protections typically secured through collective bargaining—such as insulation from abrupt termination and control over work modality—can play a critical role in preserving employee performance during periods of administrative disruption. These protections, whether provided through union agreements or other mechanisms, may serve as stabilizing forces that help agencies maintain continuity and resilience amid reform.¹⁹³

¹⁸⁹ *Id.* at 847-48 (describing administrative capacity being discussed).

¹⁹⁰ *Id.* at 831-32 (explaining that “[r]eforms aimed at increasing presidential control are double-edged swords.”).

¹⁹¹ *Id.* at 833.

¹⁹² K. Sabeel Rahman, *Reconstructing the Administrative State in an Era of Economic and Democratic Crisis*, 131 HARV. L. REV. 1671, 1674-75 (2018) (explaining how bypassing internal administrative checks undermines the legitimacy and effectiveness of agencies as instruments of democratic governance).

¹⁹³ See, e.g., Michael L. Wachter, *Labor Unions: A Corporatist Institution in a Competitive World*, 155 U. PA. L. REV. 581, 627 (2007) (“As long as unions raise labor costs in competitive sectors of the economy, unionized firms will continue to lose market share, managers in the nonunion sectors will continue to strongly resist unionization, and labor law reforms that facilitate unionization will remain unpopular.”).

The contrast between POPA and other federal unions during the DOGE rollout is particularly instructive. While POPA's agreement remained in force, shielding examiners from abrupt changes, other unions saw their collective bargaining rights suspended or undermined. Once such protections are removed, examiners are also subject to production reduction effects of these reforms. This selective preservation of protections underscores the political dimensions of union targeting and suggests that the stabilizing role of unions may depend not only on their structure but also on their political insulation.

A pressing question for public sector unions in particular is whether they serve as obstacles to reform initiatives.¹⁹⁴ This issue is especially salient in public administration, where organizational reforms are often needed to meet evolving policy and performance demands.¹⁹⁵ Unions may restrict not only internal administrative reforms but also broader policy objectives set by governmental agencies. This debate over public sector unions has gained renewed urgency in the wake of *Janus v. American Federation of State, County, and Municipal Employees*, a landmark Supreme Court decision that disrupted the financial stability of such unions by prohibiting mandatory membership and dues.¹⁹⁶ The *Janus* ruling has sparked a broader inquiry: can public sector unions remain viable in a post-*Janus* landscape?¹⁹⁷

Our findings on POPA, a public sector, professional union focused on a specific work-force, and the covered patent examiners' ability to maintain productivity in light of massive uncertainty and pushes for reform provide some insights into these discussions and questions. These findings support a broader theoretical account in which unions do more than resist reform—they buffer frontline employees from arbitrary managerial behavior, preserve routinized expectations, and enable consistent output in volatile environments.¹⁹⁸ In this view, unions operate as a form of institutional insurance. Where managerial incentives are misaligned, or where executive disruption is driven by political symbolism rather than operational logic, unions preserve the functioning of

¹⁹⁴ See, e.g., Benjamin Levin, *What's Wrong with Policy Unions?*, 120 COLUM. L. REV. 1333, 1338-39 (2020) (discussing whether arguments that police unions inhibit policing reform is unique to police unions or endemic to public sector unions in general); Richard Michael Fischl, *"Running the Government Like A Business": Wisconsin and the Assault on Workplace Democracy*, 121 YALE L.J. ONLINE 39, 67 (2011); Anne Marie Lofaso, *In Defense of Public-Sector Unions*, 28 HOFSTRA LAB. & EMP. L.J. 301, 308 (2011) ("[U]nions, including public-sector unions, are vital to a well-functioning democracy and therefore should be protected."); John O. McGinnis & Max Schanzbach, *The Case Against Public Sector Unions*, Hoover Inst. (Aug. 1, 2010), <http://www.hoover.org/research/case-against-public-sector-unions>.

¹⁹⁵ See, e.g., Levin, *supra* note 194, at 1338 ("Much criticism of police unions focuses on their obstructionist nature and how they prioritize the interests of their members over the interests of the public at large and the communities they police"); Fisk & Richardson, *supra* note 13, at 713-22 (describing police union's self-interests as counter to publicly beneficial reforms).

¹⁹⁶ *Janus v. Am. Fed'n of State, Cty. & Mun. Emps., Council 31*, 585 U.S. 878 138 S. Ct. 2448, 2486 (2018).

¹⁹⁷ See Aaron Tang, *Life After Janus*, 119 COLUM. L. REV. 677, 680-81, 694 ("Rather than relitigating *Janus*, the questions it asks are instead forward looking: What comes next? Is there life for public-sector unions after *Janus*? And if so, what might it look like?"). This is part of a broader question of whether unions, in general, are still of significance in the United States workforce. See Kate Andrias, *The New Labor Law*, 126 YALE L.J. 2, 5 (2016) ("American labor unions have collapsed. While they once bargained for more than a third of American workers, unions now represent only about a tenth of the labor market and even less of the private sector.").

¹⁹⁸ See, e.g., Charles B. Craver, *Why Labor Unions Must [And Can] Survive*, 1 U. PA. J. LAB. & EMP. L. 15, 20 (1998) (detailing the many protections provided by unions and collective bargaining agreements).

public service delivery.¹⁹⁹ This shifts the reform conversation: unions are not necessarily antithetical to performance but may be essential to sustaining it during periods of organizational stress. In particular, the combination of job security and control over work modality—both typically secured through collective bargaining—appears to have buffered unionized employees from the destabilizing effects of DOGE’s reforms.

These results have immediate implications for current changes being implemented by the Trump administration, particularly the recent executive order excluding multiple agencies from federal labor-management relations programs.²⁰⁰ The executive order purports to strip collective bargaining and union rights from workers across the federal government in more than 30 agencies.²⁰¹ The propriety of this executive order is currently under litigation²⁰² Furthermore, the USPTO’s new hiring announcements explicitly exempt patent examining, as well as trademark examining, position from collective bargaining.²⁰³ Our findings on the benefits of public unions in maintaining productivity during periods of transition are particularly relevant to these moves to exclude federal workers from union protection and hire more without such protections.

Regarding the USPTO specifically, while prior scholarship²⁰⁴ and policy-oriented research²⁰⁵ have often portrayed POPA as impediments to efficiency and reform, our results suggest a more nuanced reality. Some patent scholars have argued that the examiner count system—shaped in part

¹⁹⁹ See, e.g., Catherine L. Fisk & Erwin Chemerinsky, *Political Speech and Association Rights After Knox v. SEIU, Local 1000*, 98 CORNELL L. REV. 1023, 1074-76 (“[P]ublic employee unionization and bargaining enhances the transparency and accountability of government.”)

²⁰⁰ Exec. Order No. 14,123, 90 Fed. Reg. 20,456 (Mar. 27, 2025), (available at <https://www.whitehouse.gov/presidential-actions/2025/03/exclusions-from-federal-labor-management-relations-programs/>).

²⁰¹ *Id.*

²⁰² *National Treasury Employees Union v. Trump*, No. 25-0935-PLF (D.D.C.).

²⁰³ See, e.g., Patent Examiner (Physics), USAJobs, available at <https://www.usajobs.gov/job/839346800> (identifying “Bargaining unit status” as “No”).

²⁰⁴ See e.g., Mark A. Lemley, *Fixing the Patent Office*, 13 INNOVATION POL’Y & ECON. (2013) (“Patent reform efforts to date have not focused sufficient attention on examiner behavior and incentives. But implementation may be politically difficult, both because the powerful examiners’ union resists changes to the way examiners are evaluated...”); Ronald J. Mann, *The Idiosyncrasy of Patent Examiners*, 92 TEX. L. REV. 2149, 2159 (2014) (in discussing why supervisors do not re-allocate work, the article notes that “in an office with a strong union presence, line-level examiners emphasized that no such practice could persist without detection or survive its discovery.”); Jonathan Masur, *Patent Inflation*, 121 YALE L.J. 470, 480-81 (2011) (discussing pushes to reform the USPTO by hiring “more and better examiners”).

²⁰⁵ See e.g., Julie Samuels, *Congressional Hearing Highlights Troubling Practices at the Patent Office*, Engine (Nov. 30 2014) (“There have been efforts to reform the count system, however any real change has gotten mired in negotiations with the Patent Office Professional Association, otherwise known as the Patent Examiners Union.”).

by union negotiations—has contributed to the issuance of low-quality or overly broad patents.²⁰⁶ Current scholarship by Gaétan de Rassenfosse provides a detailed analysis of this system, highlighting how its structure can incentivize allowances and discourage deeper scrutiny, thereby affecting patent quality.²⁰⁷

Recent findings by the Government Accountability Office (GAO) reinforce the concerns raised by our study regarding the examiner count system and its impact on patent quality.²⁰⁸ The GAO's 2025 report concluded that the USPTO's current performance appraisal system places disproportionate emphasis on output over quality, incentivizing examiners to prioritize quantity of work rather than thoroughness of examination.²⁰⁹ This structural imbalance—long criticized by scholars and practitioners—was echoed by examiners themselves, who reported that time constraints and count-based pressures often precluded comprehensive prior art searches and careful claim analysis.²¹⁰ These findings underscore the need for systemic reform of the count system, not only to improve patent quality but also to ensure that performance metrics align with the agency's statutory mission. Our results suggest that strong, specialized union protections may help buffer examiners from the most destabilizing effects of these pressures, but they do not eliminate the underlying structural incentives that may compromise examination rigor.

Yet our findings complicate this critique. We show that employees who are protected by a collective bargaining agreement—and who also operate under clear, performance-based evaluation systems—can maintain stable productivity even amid extreme uncertainty and institutional disruption. In the case of the USPTO, the POPA agreement not only shielded examiners from the most destabilizing aspects of DOGE's implementation (such as mandatory in-person work and layoff threats), but also preserved the integrity of the patent examination process

²⁰⁶ See e.g., NAT'L ACAD. OF PUB. ADMIN., U.S. PATENT AND TRADEMARK OFFICE: TRANSFORMING TO MEET THE CHALLENGES OF THE 21ST CENTURY 102 (2005) (arguing that the examiner productivity schedule is “highly biased toward early allowances”); Michael D. Frakes & Melissa F. Wasserman, *Does the U.S. Patent & Trademark Office Grant Too Many Bad Patents? Evidence from a Quasi-Experiment*, 67 STAN. L. REV. 613, 619 (2015) (noting that some “argue [the USPTO] is hamstrung by the strength of its patent examiner union”); Mark A. Lemley, *Can the Patent Office Be Fixed?*, 15 MARQUETTE I.P. L. REV. 295, 297 (2011) (“The so-called “count” system gave credit to examiners for certain acts; patent lawyers often complain that examiners “make” them file continuations in order to boost their counts.”); Eric B. Cohen, *Conflicting Objectives: The Patent Office's Quality Review Initiative and the Examiner Count System*, 10 NORTH CAROLINA J. OF L. & TECH. 28 (2008) (“an analysis of the examiner production goals (i.e., examiner quotas or the “count system”) suggests that coexistence of such production goals with the recent enhanced quality review initiative is the underlying cause of many of the challenges confronting the USPTO.”); Henry Metro, Arya Mashiri, & Matthew Avery, *The Myth of “Bad” Patents: Impact of Prosecution Length on Patent Litigation Outcomes*, 38 HARV. J. L. & TECH. 227 (2024) (arguing that “the count system may be incentivizing examiners to issue a notice of allowance” rather than issuing a warranted office action.).

²⁰⁷ de Rassenfosse, *supra* note 107. De Rassenfosse's article argues that while the count system promotes efficiency, it also creates structural incentives that may compromise examination rigor—favoring allowances, discouraging second non-final rejections, and encouraging strategic behavior to meet production targets. These findings underscore the significance of our results: despite operating within a system that often rewards throughput over scrutiny, unionized examiners did not shift toward easier tasks or exhibit signs of gaming in response to DOGE's reforms. Their performance stability suggests that institutional protections, such as those provided by collective bargaining agreements, may help buffer against both external political shocks and internal incentive distortions.

²⁰⁸ U.S. Gov't Accountability Off., GAO-25-107218, *Patent Office Should Strengthen Its Efforts to Address Persistent Examination and Quality Challenges* (Apr. 2025) (report to the Chairman, Subcomm. on Intell. Prop., S. Comm. on the Judiciary).

²⁰⁹ *Id.* at 6-8.

²¹⁰ *Id.* at 6-7.

during a period of widespread administrative upheaval. This resilience is all the more striking given the USPTO's well-documented struggles with internal management constraints, including limited procedural authority and a rigid examiner count incentive system that has historically complicated reform efforts.²¹¹

While our findings strongly suggest that the collective bargaining agreement played a central role in insulating examiners from the productivity declines experienced by staff, we cannot isolate which specific provisions were most responsible. The collective bargaining agreement includes multiple protections²¹²—such as safeguards against termination, exemptions from in-person work mandates, and the count-based performance system—all of which may have contributed to examiner stability. Because these features are bundled within the collective bargaining agreement, our design does not allow us to disentangle their individual effects. Future research could explore which of these protections are most salient in buffering employees from institutional shocks.

The stability of examiner performance is especially notable given that these employees are typically the public face of bureaucratic inefficiency critiques. Many other scholars and commentators call out unions such as POPA as the cause of many USPTO failings. Yet under the pressure of DOGE's reforms, examiners' performance did not falter. Indeed, our additional analyses in Part V show no systematic shift away from “hard” tasks such as rejections toward “easy” ones like first-action allowances. This suggests that examiners did not merely game the count system in response to perceived threats but instead continued to execute their duties with professional consistency.

C. Methodological Lessons for Evaluating Administrative Reforms

Our final implication is methodological: intra-agency comparisons between varying levels of unionized workers offer a powerful framework for evaluating public-sector reforms. Our study demonstrates that comparing varying levels of unionized employees within the same agency can greatly assist in evaluating the impact of administrative reforms.²¹³ This within-agency, difference-in-difference approach offers a model for future studies that seek to disentangle the true effects of reform from confounding factors like media attention, external applicant behavior, or seasonal work fluctuations. By leveraging the unique labor structure at the USPTO, we were able to hold constant agency-specific factors—mission, leadership, public visibility—while isolating the differential effects of institutional protections. However, because job security and telework privileges were bundled together for unionized employees, we cannot fully disentangle the effects of job protection from those of remote work. As federal agencies continue to experiment with

²¹¹ Arti K. Rai, *Growing Pains in the Administrative State: The Patent Office's Troubled Quest for Managerial Control*, 157 U. PA. L. REV. 2051, 2060–67 (2009) (describing how structural limitations, including union dynamics and outdated performance metrics, have historically hindered the USPTO's ability to implement managerial reforms).

²¹² See COLLECTIVE BARGAINING AGREEMENT BETWEEN U.S. PATENT & TRADEMARK OFFICE & PATENT OFFICE PROF'L ASS'N, *supra* note 168.

²¹³ Inter-agency protection differences brought on by a judicial decision has been leverage by other scholars to measure union effects. See Dharmapala et al, *supra* note 13, 1-2 (using a Florida Supreme Court decision that conferred collective bargaining rights on sheriff offices, but not police departments, to observe that “collective bargaining rights led to a substantial increase in violent incidents of misconduct”).

restructuring efforts, this approach provides a replicable framework for assessing the real-world consequences of reform initiatives like DOGE.

This methodology was particularly crucial in addressing alternative explanations. For example, it allowed us to rule out that productivity drops were driven by attrition, as personnel counts declined only modestly (Table 2 and Table 8), or that observed patterns reflected routine political transitions (Table 11). Each of these analyses converged on the same conclusion: DOGE-style reforms disproportionately impacted unprotected workers, while unionized employees remained insulated from the resulting disruption.

From a policy perspective, this suggests that agencies and reformers should treat labor structure not as a constraint to work around but as a variable to design reforms through. If policymakers seek to improve productivity without degrading morale or institutional capacity, reforms should be accompanied by clear procedural guidance, transparency in expectations, and safeguards that avoid wholesale panic. This is not simply a matter of ethics—it is a pragmatic insight grounded in observable behavior. Reform efforts like DOGE may overestimate the motivational power of threat and underestimate the stabilizing value of institutional trust. Our empirical framework offers a template for distinguishing between these competing logics.

Conclusion

Together, these findings underscore the importance of both institutional design and labor protections in shaping how federal employees respond to reform. Our analysis also suggests that the success of future efficiency initiatives may depend not only on the content of the reforms, but on how they are implemented—and on whether employees are given the stability and clarity needed to continue performing their core functions.

Accordingly, the implementation of DOGE at the USPTO provides a rare empirical window into how different categories of federal employees respond to institutional change, disruption, and uncertainty. While workers enjoying less labor protections experienced significant declines in productivity following DOGE's early actions, unionized patent examiners remained relatively unaffected. They experience the effects only when they also lose union protection. This divergence highlights how job protections and institutional structure can shape employee behavior in the face of reform efforts.

Whether DOGE's reforms were primarily intended to drive efficiency, encourage attrition, or achieve broader political goals, our study demonstrates that reform outcomes are deeply contingent on the institutional context in which they unfold. As future administrations consider changes to the federal bureaucracy, our results suggest that the presence or absence of such protections can meaningfully influence agency performance, resilience, and public service delivery during periods of transition.