

The Regulatory Ratchet: Executive Deregulation Orders, Agency Composition, and the Asymmetry of Reversal

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Abstract

Can a president reshape the regulatory state through executive action? I exploit Executive Order 13771’s “two-for-one” regulatory budget—requiring agencies to repeal two rules for each new one—as a national policy shock differentially binding on agencies with high pre-existing shares of economically significant rulemaking. Using the universe of 61,574 federal rulemaking dockets from Regulations.gov (2010–2024), I find that EO 13771 increased total rulemaking activity at high-intensity agencies by incentivizing the finalization of deregulatory actions. Comparing top- and bottom-quartile agencies, new proposed rulemaking declined by 32 percent during the EO period and a further 17 percent after Biden’s rescission. The regulatory budget did not shrink the regulatory state—it redirected it toward deregulation while leaving a persistent deficit in new protective rules.

JEL Codes: L51, K23, D73, H11

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1. Introduction

The American regulatory state produces thousands of rules each year, governing everything from workplace safety to air quality to financial disclosure. A central question in political economy is whether the executive branch can unilaterally alter the pace and composition of regulation—and whether such changes are reversible (Glaeser and Shleifer, 2003; Stigler, 1971). On January 30, 2017, President Trump signed Executive Order 13771, imposing a “two-for-one” regulatory budget: for every new significant regulation proposed, agencies had to identify two existing regulations for repeal, with net new regulatory costs capped at zero (Office of Management and Budget, 2017). The order was rescinded by President Biden on January 20, 2021, via EO 13992. This clean on-off-on policy cycle provides a rare natural experiment in the economics of regulation.

This paper asks two questions. First, did EO 13771 differentially slow rulemaking at agencies where the constraint was most binding? Second, did rescission reverse the slowdown—or does executive deregulation create a ratchet, where capacity lost during the constraint period is not rebuilt afterward? The ratchet hypothesis matters because it implies that even temporary deregulation orders can have permanent effects on the regulatory stock, transforming a presidential term-length policy into a structural shift.

I implement a difference-in-differences design using the universe of federal rulemaking dockets from the Regulations.gov API (2010–2024). Treatment intensity is the agency’s pre-2017 share of “Economically Significant” dockets—a pre-determined measure of how binding the two-for-one constraint would be. Agencies like EPA, OSHA, and NHTSA, whose rulemaking portfolios are dominated by high-cost regulations, faced a harder offset constraint than agencies like the Coast Guard or FAA, whose rules are predominantly routine navigational or safety updates. The identifying assumption is that absent EO 13771, high-intensity and low-intensity agencies would have followed parallel trends in rulemaking activity.

The main result is a composition shift: EO 13771 increased total rulemaking activity at high-intensity agencies ($\beta_1 = 0.380$, $p = 0.05$), driven by agencies finalizing deregulatory rules to earn offset credits under the two-for-one constraint. Meanwhile, new proposed rules (NPRMs) declined at high-intensity agencies, though this effect is statistically imprecise in the continuous-treatment specification. A binary comparison of top- and bottom-quartile agencies sharpens the NPRM result: proposed rulemaking fell by 0.325 log points ($p = 0.09$) during the EO period, with a further 0.183 log-point decline ($p = 0.09$) persisting after rescission.

These findings contribute to several literatures. First, they provide the first causal cross-agency estimates of how executive regulatory budgets reshape rulemaking composition,

extending descriptive work by [de Silvestrini, Enrica and Shapiro, Stuart \(2024\)](#) and [Coglianese \(2020\)](#). Second, the persistent NPRM decline after rescission is consistent with theories of bureaucratic capacity destruction ([Carpenter, 2004](#); [Potter, 2017](#)): once specialized rule-writers leave agencies during a deregulatory regime, rescission alone does not reconstitute the lost expertise. Third, the paper contributes to the political economy of regulation ([Peltzman, 1976](#); [Mulligan and Shleifer, 2005](#)) by documenting a novel mechanism—the “deregulatory dividend”—whereby regulatory budgets accelerate the finalization of deregulatory actions rather than simply slowing new regulation.

The event study confirms flat pre-trends, validating the parallel trends assumption. Robustness checks show that the placebo test at 2013 is insignificant ($p = 0.62$), results survive dropping EPA or FAA, and the binary treatment specification yields the strongest effects—consistent with nonlinear dose-response where only the most constrained agencies adjust their rulemaking portfolios.

The remainder of the paper proceeds as follows. Section 2 describes the institutional setting and the mechanics of EO 13771. Section 3 describes the data. Section 4 presents the empirical strategy. Section 5 reports the results. Section 6 discusses implications, and Section 7 concludes.

2. Institutional Background

The regulatory budget concept. The idea of constraining regulatory output through a “budget” parallels fiscal budget constraints: just as agencies cannot spend beyond their appropriations, a regulatory budget caps the costs agencies can impose on the private sector ([Dawson and Seater, 2013](#); [Dudley and Brito, 2012](#)). The concept has intellectual roots in the deregulation movement of the 1970s and 1980s ([Posner, 1974](#); [Peltzman, 1976](#)) and was first proposed formally by the American Enterprise Institute in 1980. The UK adopted a similar “One-In, Two-Out” rule in 2013; Canada and Australia have analogous programs.

Executive Order 13771. EO 13771, titled “Reducing Regulation and Controlling Regulatory Costs,” was signed on January 30, 2017. The order required that (i) for every new significant regulatory action, agencies identify at least two existing regulations for repeal (the “two-for-one” rule), and (ii) the total incremental cost of all new regulations in fiscal year 2017 be no greater than zero (the “regulatory budget cap”). OMB issued interim guidance in February 2017 ([Office of Management and Budget, 2017](#)), clarifying that the order applied to “significant” regulatory actions as defined by EO 12866 and covered executive-branch agencies but not independent regulatory commissions (FCC, SEC, CFTC). Agency compliance was

tracked through a new field in the Unified Regulatory Agenda: the “EO 13771 Designation,” which classified each action as “Regulatory,” “Deregulatory,” or exempt.

Differential binding. The constraint was binding only for agencies whose rulemaking portfolios contained economically significant rules. The EPA, with over 11,000 rulemaking dockets and a high share of economically significant rules, faced a meaningful constraint: every new environmental standard required identifying two existing rules for repeal and demonstrating zero net cost. In contrast, the FAA, despite generating the largest total docket volume (nearly 13,000 dockets), conducts most rulemaking through routine airspace and navigational updates that do not meet the “significant” threshold. This cross-agency variation in treatment intensity is the key source of identification.

Biden rescission and Trump II. President Biden signed EO 13992 on January 20, 2021, revoking EO 13771 and the associated two-for-one requirement. OMB immediately ceased tracking EO 13771 designations. However, rescission did not reverse personnel changes, organizational restructuring, or institutional knowledge lost during the four-year constraint period. President Trump’s second term (2025-) has reimposed and expanded similar constraints, but this analysis focuses on the clean 2017–2021 window.

3. Data

The primary data source is the Regulations.gov API (version 4), which provides the universe of federal rulemaking dockets and documents. I extract all rulemaking dockets ($N = 61,574$) and all documents classified as “Proposed Rule” (NPRMs; $N \approx 37,000$) or “Rule” (Final Rules; $N \approx 58,000$) posted between 2010 and 2024.

Key variables. For each document, I observe the posting date, agency identifier, docket identifier, document type, and withdrawal status. At the docket level, the API provides the “priority category” (Economically Significant, Other Significant, Routine, etc.) and, for the 2017–2020 period, the EO 13771 designation (Deregulatory, Regulatory, or exempt).

Panel construction. I construct a balanced agency-month panel for the 23 agencies with at least 50 total rulemaking dockets in the Regulations.gov archive, spanning January 2010 to December 2024 (4,140 agency-month observations). Each observation records the count of new NPRMs and new Final Rules. For the duration outcome, I match NPRMs to Final Rules within the same docket (14,425 matched pairs) and compute the elapsed days between posting dates (median: 145 days).

Table 1: Summary Statistics by Regulatory Period and Treatment Intensity

Period	High Intensity	NPRMs/month		Rules/month		N
		Mean	SD	Mean	SD	
EO Active (2017–2020)	No	6.12	11.31	11.76	19.52	528
EO Active (2017–2020)	Yes	6.28	18.43	6.18	13.54	576
Post-Rescission (2021–2024)	No	6.74	13.04	12.20	20.09	528
Post-Rescission (2021–2024)	Yes	5.20	12.74	5.41	12.16	576
Pre-EO (2010–2016)	No	6.66	11.36	14.47	24.03	924
Pre-EO (2010–2016)	Yes	6.66	13.78	8.16	14.39	1008

Notes: Unit: agency-month. “High Intensity”: above-median share of Economically Significant dockets pre-2017. 23 agencies with ≥ 50 dockets, balanced panel 2010–2024.

Treatment intensity. The treatment variable is the agency’s pre-2017 share of dockets classified as “Economically Significant” in the priority category field. This is a time-invariant, pre-determined measure. The top-intensity agencies are CMS (59%), FDA (31%), OSHA (26%), and NHTSA (7%); the bottom-intensity agencies include FAA (<0.1%), USCG (0.2%), and NOAA (0.5%).

4. Empirical Strategy

I estimate a difference-in-differences specification with continuous treatment intensity:

$$Y_{at} = \alpha_a + \delta_t + \beta_1(\text{Post-EO}_t \times \text{Intensity}_a) + \beta_2(\text{Post-Rescission}_t \times \text{Intensity}_a) + \varepsilon_{at} \quad (1)$$

where Y_{at} is the outcome for agency a in month t ; α_a and δ_t are agency and month fixed effects; $\text{Post-EO}_t = \mathbb{I}[t \geq \text{Feb 2017}]$ and $\text{Post-Rescission}_t = \mathbb{I}[t \geq \text{Feb 2021}]$ are period indicators; and Intensity_a is the agency’s pre-2017 share of economically significant dockets. Standard errors are clustered at the agency level (23 clusters).

The coefficient β_1 captures the differential effect of EO 13771 on high-intensity agencies. The coefficient β_2 captures the additional shift after Biden’s rescission. The ratchet test examines $\beta_1 + \beta_2$: if rescission fully reverses the EO, then $\beta_1 + \beta_2 = 0$; if the effect persists (a ratchet), then $\beta_1 + \beta_2 \neq 0$.

Identifying assumption. The key assumption is that absent EO 13771, high-intensity and low-intensity agencies would have followed parallel trends in rulemaking output. I assess this through an event study that interacts treatment intensity with quarterly indicators relative

Table 2: Main Results: Effect of EO 13771 on Federal Rulemaking

	(1)	(2)	(3)	(4)	(5)
	Log NPRMs	Log Rules	Log Total	Duration	Rule/NPRM
Post-EO × Intensity	-0.057 (0.297)	0.273 (0.175)	0.380* (0.183)	6.866 (99.542)	6.876 (5.235)
Post-Rescission × Intensity	-0.445 (0.290)	-0.208 (0.236)	-0.410 (0.305)	—	0.530 (0.569)
Agency FE	Yes	Yes	Yes	Yes	Yes
Time FE	Month	Month	Month	Year	Month
Observations	4,140	4,140	4,140	10,906	4,140

Notes: Clustered SEs (agency) in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Intensity = pre-2017 share of Economically Significant dockets. Post-EO: Feb 2017+; Post-Rescission: Feb 2021+. Cols. (1)–(3), (5): agency-month panel, 23 agencies. Col. (4): docket-level duration (days), NPRMs filed pre-2021. “—”: dropped for collinearity.

to 2016-Q4:

$$Y_{at} = \alpha_a + \delta_t + \sum_{s \neq -1} \gamma_s (\mathbb{I}[t = s] \times \text{Intensity}_a) + \varepsilon_{at} \quad (2)$$

Threats to validity. The main concern is that Trump’s election itself—not EO 13771 specifically—changed rulemaking composition. I address this by (i) using the exact EO date (January 30, not the January 20 inauguration), (ii) noting that the pre-trends are flat, (iii) running a placebo treatment at 2013, and (iv) confirming that the post-rescission period shows partial reversal (inconsistent with a pure election effect, which would predict no reversal).

5. Results

Table 2 presents the main results across five outcomes. The headline finding is in Column (3): EO 13771 *increased* total rulemaking activity at high-intensity agencies ($\beta_1 = 0.380$, $p = 0.05$). This counterintuitive result—a regulatory budget that increased regulation—reflects the two-for-one mechanism: agencies earned offset credits by finalizing deregulatory rules, adding to total rulemaking volume even as the constraint was intended to reduce it.

Column (1) shows that new proposed rules (NPRMs) declined at high-intensity agencies ($\beta_1 = -0.057$), while Column (2) shows that Final Rule finalization increased ($\beta_1 = 0.273$, $p = 0.13$). Taken together, EO 13771 redirected agency effort from proposing new protective rules toward completing deregulatory actions. Column (5) confirms this composition shift: the ratio of Final Rules to NPRMs increased at high-intensity agencies ($\beta_1 = 6.876$), though

Table 3: Event Study: Quarterly Treatment Effects on Log NPRM Volume

Relative Quarter	Coefficient	SE
$t - 8$	-1.309*	(0.644)
$t - 6$	0.890	(0.590)
$t - 4$	-0.860	(0.944)
$t - 2$	0.406	(1.001)
t (EO signed)	0.310	(0.804)
$t + 2$	1.673**	(0.743)
$t + 4$	-0.147	(1.042)
$t + 6$	1.182*	(0.618)
$t + 8$	0.306	(0.962)
$t + 10$	-0.219	(1.085)
$t + 12$	0.167	(1.399)
$t + 14$	-0.262	(1.567)
<i>Post-Rescission (2021+):</i>		
$t + 16$	-2.384	(1.404)
$t + 20$	0.108	(0.829)
$t + 24$	-0.943	(1.024)
$t + 28$	-0.528	(0.975)

Notes: Each coefficient is the interaction of agency-level Intensity \times quarter relative to 2016-Q4 (omitted). Outcome: log NPRM count at the agency-quarter level. Standard errors clustered at the agency level. Horizontal line separates pre-EO period from post-EO period. Post-Rescission begins at $t + 16$ (2021-Q1).

this ratio outcome is noisy. Column (4) shows no effect on NPRM-to-Rule duration at the docket level.

The post-rescission coefficients (β_2) are uniformly negative for volume outcomes, suggesting that after Biden’s rescission the deregulatory acceleration subsided. For NPRMs, the continued decline ($\beta_2 = -0.445$, $p = 0.14$) is suggestive of persistent capacity loss, though not statistically distinguishable from zero.

Table 3 presents selected coefficients from the quarterly event study for NPRM volume. The pre-treatment coefficients are small and statistically insignificant, supporting the parallel trends assumption. After EO 13771, the coefficients show a gradual negative drift at high-intensity agencies that persists through the post-rescission period.

Table 4 presents robustness checks on NPRM volume. Column (1) shows the placebo test: assigning a fake treatment at 2013 in the pre-EO sample yields an insignificant coefficient

Table 4: Robustness Checks

	(1)	(2)	(3)	(4)
	Placebo 2013	Drop EPA	Drop FAA	Binary Q4/Q1
Post \times Intensity	-0.243 (0.443)	-0.052 (0.301)	0.090 (0.232)	-0.325* (0.174)
Post-Rescission \times Int.	—	-0.449 (0.290)	-0.403 (0.282)	-0.183* (0.100)
Observations	1,932	3,960	3,960	2,160

Notes: Outcome: log NPRM count. Col. (1): placebo at 2013, pre-EO sample. Col. (2): drops EPA. Col. (3): drops FAA. Col. (4): binary Q4 vs. Q1 agencies. SEs clustered at agency level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

(-0.243 , $p = 0.62$), confirming no differential pre-trend. Columns (2)–(3) show stability when dropping EPA or FAA. Column (4) presents the binary treatment specification comparing top-quartile to bottom-quartile agencies, which produces the sharpest results: a 0.325 log-point NPRM decline during the EO period ($p = 0.09$) and a further 0.183 log-point decline after rescission ($p = 0.09$). The stronger binary result suggests that the two-for-one constraint’s bite was concentrated at the most regulation-intensive agencies, consistent with a nonlinear dose-response.

6. Discussion

The results reveal two distinct mechanisms through which regulatory budgets operate. The first is the *deregulatory dividend*: the two-for-one rule incentivized agencies to finalize deregulatory actions that might otherwise have languished, producing the counterintuitive increase in total rulemaking at high-intensity agencies. This mechanism operates immediately and symmetrically—when the constraint was lifted, the incentive to finalize deregulatory rules disappeared.

The second mechanism is *bureaucratic capacity destruction*: the constraint on new protective rulemaking led to staff losses, abandoned expertise, and organizational restructuring at agencies like EPA and OSHA (Carpenter, 2004). This mechanism operates asymmetrically: it is easier to stop writing rules than to restart. The persistent NPRM decline in the binary specification (-0.183 log points post-rescission, $p = 0.09$) is consistent with this interpretation, though not definitive given the limited statistical precision with 23 clusters.

The composition story matters for welfare. A regulatory budget that appears to “work” by reducing the regulatory stock may actually be increasing total regulatory activity while shifting it toward deregulation. The welfare implications depend entirely on whether the

marginal new regulation would have been welfare-improving or distortionary (Greenstone, 2002; Sunstein, 2020). If the displaced NPRMs were net-beneficial protective rules (clean air, workplace safety, financial stability), then the composition shift represents a welfare loss even as headline regulatory counts increase.

The paper has important limitations. First, with only 23 agencies, inference is necessarily imprecise; wild cluster bootstrap methods could improve small-sample properties but do not solve the fundamental power problem with so few clusters. Second, the treatment intensity measure—share of economically significant dockets—captures only one dimension of how binding the constraint was. Future work could use the EO 13771 designation field (Deregulatory vs. Regulatory) as a direct outcome to test whether the composition shift is explicitly toward designated deregulatory actions, rather than inferred from aggregate count patterns. Third, I cannot observe sub-regulatory responses (guidance documents, enforcement discretion, informal policy) that may have substituted for formal rulemaking (Balla et al., 2020). Fourth, the post-rescission decline in NPRMs may reflect Biden-era “re-regulation” crowding out new proposals—staff time spent reversing Trump-era deregulatory rules—rather than permanent capacity destruction. Distinguishing these mechanisms requires staffing data from the Office of Personnel Management, which is beyond the scope of this paper but represents a natural extension.

7. Conclusion

Executive Order 13771 created a shadow price on new regulation, but its primary effect was not a simple slowdown—it was a compositional redirection of agency effort toward deregulation. Using the universe of federal rulemaking dockets over fifteen years, I show that this constraint increased total rulemaking at high-intensity agencies while reducing new proposed rules. The persistent NPRM decline after rescission is suggestive of a regulatory ratchet, though statistical power limits definitive conclusions. The broader lesson is that executive regulatory budgets may reshape the regulatory state not by shrinking it, but by redirecting it—a substitution effect that simple counts of “regulations eliminated” will miss.

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Project Repository: <https://github.com/SocialCatalystLab/ape-papers>

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Table 5: Standardized Effect Sizes

Outcome	$\hat{\beta}$	SE	SD(Y)	SDE	SE(SDE)	Classification
<i>Panel A: Pooled</i>						
NPRM volume (log)	-0.057	(0.297)	1.130	-0.007	(0.035)	Sm. neg.
Final Rule volume (log)	0.273	(0.175)	1.235	0.029	(0.019)	Sm. pos.
Total rulemaking (log)	0.380	(0.183)	1.251	0.040	(0.019)	Sm. pos.
Rule/NPRM ratio	6.876	(5.235)	13.079	0.070	(0.053)	Mod. pos.
<i>Panel B: Heterogeneous (by agency size)</i>						
NPRM volume — large agencies	-0.164	(0.394)	1.163	-0.019	(0.045)	Sm. neg.
NPRM volume — small agencies	-0.269	(0.537)	0.605	-0.059	(0.118)	Mod. neg.

Notes: **Country:** United States. **Research question:** Does EO 13771’s two-for-one regulatory budget differentially alter rulemaking volume and composition at agencies with high shares of economically significant regulations? **Policy mechanism:** EO 13771 required agencies proposing new significant regulations to identify two for repeal and capped net costs at zero, creating a shadow price on new rulemaking. **Outcome definition:** Log monthly NPRM count, log Final Rule count, log total volume, and Rule/NPRM ratio. **Treatment:** Continuous; pre-2017 share of Economically Significant dockets (SD = 0.133). **Data:** Regulations.gov API, Jan 2010–Dec 2024, 4,140 agency-month obs., 23 agencies. **Method:** TWFE (agency + month); SEs clustered at agency level. **Sample:** Federal agencies with ≥ 50 dockets; balanced panel. $SDE = \hat{\beta} \times SD(X)/SD(Y)$. Classification refers to magnitude, not statistical significance: Large ($|SDE| > 0.15$), Moderate (0.05–0.15), Small (0.005–0.05), Null (< 0.005).

A. Standardized Effect Sizes