ONLINE APPENDIX
for
"Agency Rulemaking in a Separation of Powers System"

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Table A1. Agencies Included in the Rulemaking Data

Executive Agencies	Independent Agencies
Agency for International Development	Commodity Futures Trading Commission
Department of Agriculture	Consumer Product Safety Commission
Department of Commerce	Equal Employment Opportunity Commission
Department of Defense	Farm Credit Administration
Department of Education	Federal Communication Commission
Department of Energy	Federal Deposit Insurance Corporation
Department of Health and Human Services	Federal Emergency Management Agency*
Department of Homeland Security*	Federal Housing Finance Board
Department of Housing and Urban Development	Federal Maritime Commission
Department of the Interior	Federal Trade Commission
Department of Justice	National Credit Union Administration
Department of Labor	Nuclear Regulatory Commission
Department of State	Pension Benefit Guaranty Corporation
Department of Transportation	Securities and Exchange Commission
Department of Treasury	
Department of Veterans Affairs	
Environmental Protection Agency	
General Services Administration	
National Aeronautics and Space Administration	
National Archives and Records Administration	
Office of Management and Budget	
Office of Personnel Management	
Small Business Administration	
Social Security Administration	

Notes: Agencies marked with asterisks appear in our dataset for only a subset of years. DHS was created in November 2002 and thus appears in our dataset only from 2003 (1st quarter) through 2007 (20 quarters total). FEMA was merged into DHS at that time, so ceases to be its own agency from 2003 onward (32 quarters total). All other agencies are included in the dataset for each quarter of the 13 years in our study (52 quarters each).

Table A2. Explanation of Variables Included in the Models

Variable Name (Expected sign)	Description
Proposed Rules	A count of the number of significant proposed rules issued by agency *i* in quarter *t*, as reported in the Unified Agenda. Counts exclude proposed rules with a statutory or judicial deadline.
Final Rules	A count of the number of significant final rules issued by agency *i* in quarter *t*, as reported in the Unified Agenda. Counts exclude final rules with a statutory or judicial deadline.
Priority (+)	A dichotomous variable that takes on a value of 1 if the president's mentions of the agency's policy area exceeded the mean policy area mentions across all policy areas in that year's State of the Union Address (SOTU). SOTU data are from the Policy Agendas Project (Baumgartner and Jones, 2012), which codes these addresses based on the policy area of the quasi-sentence. We then match agencies to their respective Policy Agendas policy area.
Aligned President (+)	A dichotomous variable that takes a value of 1 if the president and the agency share the same ideological orientation (e.g., a Democratic president and a liberal agency). Agencies are coded as liberal if their Clinton and Lewis (2007) ideology score falls below zero and conservative if the score exceeds zero.
Transition (+)	A dichotomous variable that takes a value of 1 during the November, December, and January after an election leading up to a government transition from unified to divided government.
Midnight (+)	A dichotomous variable that takes a value of 1 for the November, December, and January before the transition to a new presidency in a different party.
Opposition Size Unity (-)	For a conservative (liberal) agency, a variable that takes into account the strength of the Democrat (Republican) party compared to the other party, based on the number of seats held by each party and the unity of the party. We create these measures for both the House and the Senate and then average across the two chambers. Values greater than 1 indicate a stronger opposition party.
Employees (+)	The logged number of employees in agency *i* in a fiscal year.
Agency Ideology (-)	The agency's ideological score using Clinton and Lewis's (2007) measure.
Independent (-)	A dichotomous variable that takes a value of 1 if the agency is not a part of the executive branch or the Cabinet.

Divided Government	A dichotomous variable that takes a value of 1 during periods of divided government.

Table A3. Descriptive Statistics for All Variables

Variable Name	Mean	Std dev	Min	Max
Proposed Rules	1.05	1.72	0	12
Final Rules	0.83	1.49	0	16
Priority	0.25	0.43	0	1
Aligned President	0.51	0.50	0	1
Transition	0.03	0.11	0	0.67
Midnight	0.01	0.06	0	0.33
Opposition Size Unity	0.98	0.154	0.81	1.23
Employees (ln)	8.85	2.07	4.53	12.50
Agency Ideology	0.03	0.85	-1.69	2.21
Independent	0.38	0.49	0	1
Divided Government	0.69	0.46	0	1

Table A4

In the main models in the paper, we create our counts of proposed and final rules by focusing on significant rules and excluding any rule with an associated statutory or judicial deadline from our counts. We make this categorical exclusion since agencies have considerably more discretion over the timing and production of rules that have no deadline and, since we are interested in exploring how this discretion is strategically employed, it makes sense to focus on those decisions where discretion is freely exercised. However, we acknowledge that there is an argument to be made for focusing on all rules – even those that are subject to constraints. Therefore, in Table A4 below we do just that, focusing on all significant proposed and final rules (i.e., including those with an associated statutory or judicial deadline). The results are largely unaffected by focusing on this broader sets of rules.

Table A4. Counts of Proposed Rules and Final Rules (Including Rules with a Deadline) by Quarter

	Model A1 Proposed Rules	Model A2 Final Rules
Priority	0.040	0.203[*]
	(0.097)	(0.103)
Aligned President	0.100*	0.039
	(0.056)	(0.062)
Transition	-0.183	-0.254
	(0.222)	(0.248)
Midnight	-0.342	1.966[**]
	(0.439)	(0.391)
Opposition Size Unity	-0.640[**]	-0.379
	(0.274)	(0.280)
Employees (ln)	0.362[**]	0.411[**]
	(0.082)	(0.074)
Agency Ideology	-0.325[**]	-0.597[**]
	(0.133)	(0.126)
Independent	-0.259	-0.009
	(0.376)	(0.350)
Divided	-0.190[**]	-0.191[**]
	(0.066)	(0.073)
Time	-0.007	-0.033[**]
	(0.008)	(0.009)
$Time^2$	0.0002[*]	0.001[**]
	(0.0001)	(0.0002)
Constant	-1.529[*]	-2.601[**]
	(0.917)	(0.833)
N	1924	1924

Note: Table entries are maximum likelihood coefficients obtained from negative binomial models, with random effects at the agency-level and standard errors clustered on the agency. The agency-quarter is the unit of analysis. One-tailed tests: * $p < .05$, ** $p < .01$.

Table A5

  In Table 1, we report results based on the agency-quarter unit. This is a compromise approach; none of our variables vary at the month level, but some do vary within year. The quarter level allows us to capture this variation without artificially inflating our sample size. However, to show that the unit of analysis is not driving our findings, in Table A5 we collapse the data to the year level. Doing so reduces the granularity of our *Midnight* and *Transition* variables, as any year that falls under these headings now receives a "1" value. However, the results are substantially similar in this analysis: Congress has a negative and statistically significant effect (although only statistically significant for proposed rules), *Midnight* retains a positive and statistically significant effect for final rules, and the *Aligned President* variable is positive (as expected), although statistically significant only for proposed rules.

Table A5. Counts of Proposed Rules and Final Rules by Year

	Model A3 Proposed Rules	Model A4 Final Rules
Priority	-0.023	0.062
	(0.125)	(0.134)
Aligned President	0.135*	0.068
	(0.071)	(0.080)
Transition	0.780	0.265
	(0.906)	(1.020)
Midnight	-4.364#	3.301*
	(1.470)	(1.608)
Opposition Size Unity	-0.859*	-0.597
	(0.350)	(0.379)
Employees (ln)	0.291**	0.247**
	(0.082)	(0.083)
Agency Ideology	-0.599**	-0.708**
	(0.153)	(0.154)
Independent	-0.510	-0.454
	(0.368)	(0.377)
Divided	-0.070	-0.216*
	(0.092)	(0.109)
Time	0.053	-0.162**
	(0.058)	(0.070)
Time^2	-0.003	0.013**
	(0.004)	(0.005)
Constant	-0.464	-0.074
	(0.955)	(0.985)
N	481	481

Note: Table entries are maximum likelihood coefficients obtained from negative binomial models, with random effects at the agency-level and standard errors clustered on the agency. The agency-year is the unit of analysis. One-tailed tests: * $p < .05$, ** $p < .01$. # indicates significance at the .05 level in the direction opposite from the prediction.

Table A6

In Table A6, we re-estimate the models in Table 1 using Poisson Pseudo-Maximum Likelihood (PPML) models. This modeling approach takes into the account the count nature of our dependent variable, while also all accommodating overdispersion (Santos and Tenreyo 2010). Additionally, the approach allows for large numbers of dummy variables, which we take advantage of in Table A6 by including both agency and year fixed effects. (The reduced N size in these models reflects the fact that the Federal Trade Commission drops from the analysis due to limited variation in the volume of rules produced.) The results largely mirror those reported in Table 3, with consistent negative and significant effects for Congress, mixed effects for the president, and a positive and significant effect for *Midnight* for final rules.

Table A6. Counts of Proposed and Final Rules by Quarter Using a PPML Approach

	Model A5 Proposed Rules	Model A6 Final Rules
Priority	0.014 (0.148)	0.084 (0.129)
Aligned President	0.120 (0.117)	0.057 (0.125)
Transition	-0.369# (0.225)	-0.163 (0.313)
Midnight	0.168 (0.502)	2.005** (0.618)
Opposition Size Unity	-0.847** (0.237)	-0.552* (0.284)
Agency fixed effects?	yes	yes
Year fixed effects?	yes	yes
N	1872	1872

Note: Table entries are maximum likelihood coefficients obtained from Poisson Pseudo-Maximum Likelihood (PPML) models, with fixed effects at the agency and year levels. Standard errors are clustered on the agency. The agency-quarter is the unit of analysis. One-tailed tests: * $p < .05$, ** $p < .01$. $^{\#}$ indicates significance at the .05 level in the direction opposite from the prediction.

Table A7

As we discuss in the paper, the *Opposition Size Unity* measure has several advantages, particularly that it takes into account both the size and the strength of the agency's partisan opposition in Congress. However, there are powers that accrue to the majority party regardless of its size and cohesion (e.g., agenda-setting powers).

To ensure that our analysis is not sensitive to our particular measure of congressional opposition, we employ a different measure in Table A7. Specifically, *Congress-Agency Disagree* is a binary measure that takes a value of 1 if the agency is liberal (conservative) and either of the two chambers (or both) are controlled by the Republican (Democratic) party, and 0 otherwise. This is a blunt measure, but even so we find similar results to those reported in the paper: when Congress is opposed to the agency's goals, agency rulemaking is associated with a negative and statistically significant reduction in volume.

Table A7. Counts of Proposed and Final Rules with an Alternate Congress Measure

	Model A7 Proposed Rules	Model A8 Final Rules
Priority	-0.019	0.002
	(0.108)	(0.117)
Aligned President	0.128*	0.061
	(0.062)	(0.068)
Transition	-0.192	-0.354
	(0.248)	(0.284)
Midnight	-0.761	1.911**
	(0.498)	(0.445)
Congress-Agency Disagree	-0.287**	-0.178*
	(0.086)	(0.093)
Employees (ln)	0.330**	0.371**
	(0.079)	(0.072)
Agency Ideology	-0.348**	-0.668**
	(0.136)	(0.129)
Independent	-0.290	-0.081
	(0.366)	(0.337)
Divided	-0.098	-0.171*
	(0.077)	(0.084)
Time	-0.001	-0.034**
	(0.009)	(0.010)
Time^2	0.0001	0.001**
	(0.0002)	(0.0002)
Constant	-1.982*	-2.591**
	(0.835)	(0.748)
N	1924	1924

Note: Table entries are maximum likelihood coefficients obtained from negative binomial models, with random effects at the agency-level and standard errors clustered on the agency. The agency-quarter is the unit of analysis. One-tailed tests: * p < .05, ** p < .01

Table A8

The *Congressional Opposition Hypothesis* indicates that rulemaking should decrease when congressional actors are more capable of imposing costs on the agency. Although our theoretical focus in the paper is on rulemaking sanctions that originate with the actions of the collective body of Congress (e.g., use of the Congressional Review Act), committees also can be an important source of congressional oversight of agencies, oversight that can result in costs for the agency. Specifically, committees can hold oversight hearings, which can soak up agency resources and serve as a public shaming.

To incorporate congressional oversight committees into our analysis, we rely on data collected by Marvel and McGrath (2016). These authors collected data on the number of oversight hearings by agency-year and the sentiment associated with these hearings. This latter part is important because, as they explain, positively-toned hearings can serve as an advocacy tool for members of Congress to boost an agency, while negatively-toned hearings can serve as a punishment tool with longer-term consequences for the agency. Following the *Congressional Oversight Hypothesis,* we anticipate that an increase in the volume of oversight hearings – along with an associated increase in their level of negativity – should result in a decrease in the number of proposed and final rules produced.

We include two variables from Marvel and McGrath's dataset: *Oversight Hearings,* which is a count of the total number of oversight hearings held for each agency in a particular year; and *Hearings Sentiment,* which is the mean sentiment of the agency's hearings held in that year. (This latter variable is based on text analysis of hearings transcripts and ranges from -1 to 1, with more positive values indicating a more positively-toned hearing.)

To fully capture the effect of hearing volume and tone we interact these two variables, adding them to the models from Table 1 in the paper. The results are presented in Table A8 below. Notably, the interaction is not statistically significant.[1] The results for our main theoretical variables, however, remain largely unaffected by the inclusion of these new variables (although in some cases they are estimated with less precision). This is consistent with the idea that congressional oversight of rulemaking operates largely through the chamber-wide tools of oversight, rather than through committees per se.

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[1] The statistically significant effect for the constitutive term for *Oversight Hearings* indicates the effect of additional oversight hearings when the mean sentiment of hearings towards an agency is neutral (i.e., a sentiment score of zero). This means that an increase in neutrally-toned hearings is associated with a small increase in the production of rules. Substantively, there is not much to be taken away from this result.

Table A8. **Counts of Proposed and Final Rules Incorporating Congressional Oversight Committees**

	Model A9 Proposed Rules	Model A10 Final Rules
Priority	-0.068	-0.025
	(0.128)	(0.138)
Aligned President	0.142*	0.134
	(0.079)	(0.087)
Transition	-0.317	-0.041
	(0.256)	(0.258)
Midnight	-0.681	2.209**
	(0.505)	(0.428)
Employees (ln)	0.402**	0.435**
	(0.095)	(0.090)
Oversight Hearings	0.008**	0.006*
	(0.003)	(0.003)
Hearings Sentiment	1.198	0.305
	(0.750)	(0.737)
Hearings Sentiment X Oversight Hearings	-0.009	-0.003
	(0.010)	(0.011)
Opposition Size Unity	-0.935**	-0.406
	(0.322)	(0.336)
Agency Ideology	-0.192	-0.491**
	(0.174)	(0.153)
Independent	-0.531	-0.343
	(0.385)	(0.368)
Divided	-0.464**	-0.546**
	(0.103)	(0.118)
Time	-0.138**	-0.180**
	(0.031)	(0.036)
Time Squared	0.002**	0.003**
	(0.000)	(0.000)
Constant	0.769	0.130
	(1.173)	(1.171)
N	1,208	1,208

Note: Table entries are maximum likelihood coefficients obtained from negative binomial models, with random effects at the agency-level and standard errors clustered on the agency. The agency-quarter is the unit of analysis. One-tailed tests: * $p < .05$, ** $p < .01$.

Table A9

        In the paper, our measures of both *Aligned President* and *Opposition Size Unity* rely on Clinton and Lewis's (2007) measures of agency ideology. Specifically, we use these estimates to group agencies into conservative and liberal camps, based on those authors' estimates of agency ideology. Clinton and Lewis's approach is based on surveys where experts were asked to rate agencies based on their ideology; the scores were then calculated using a multirater item response model. Accordingly, those authors provide confidence intervals for the estimates of agency ideology.

        In order to ensure that moderate agencies (i.e., those whose confidence interval overlaps with zero) are not driving our results – which would suggest that the effects are perhaps not related to ideology per se – in Table A9 we re-estimate Models 1 and 2 relying only on strictly conservative and strictly liberal agencies (i.e., omitting moderate agencies). Despite the reduced sample size, the results are consistent when considering this subset of the data. This provides additional confidence that our bifurcation of agencies into conservative and liberal camps does not unduly influence the results.

Table A9. Counts of Proposed and Final Rules Excluding Moderate Agencies

	Model A11 Proposed Rules	Model A12 Final Rules
Priority	0.032	0.066
	(0.114)	(0.122)
Aligned President	0.174*	0.136
	(0.076)	(0.086)
Transition	-0.219	-0.124
	(0.310)	(0.336)
Midnight	-0.506	2.667**
	(0.605)	(0.495)
Opposition Size Unity	-0.973**	-0.473
	(0.376)	(0.395)
Employees (ln)	0.301**	0.374**
	(0.099)	(0.089)
Agency Ideology	-0.361**	-0.641**
	(0.128)	(0.122)
Independent	-0.583*	-0.333
	(0.339)	(0.319)
Divided	-0.184*	-0.229*
	(0.091)	(0.102)
Time	-0.009	-0.033**
	(0.010)	(0.012)
Time^2	0.0002	0.001**
	(0.0002)	(0.0002)
Constant	-0.898	-2.407**
	(1.102)	(1.010)
N	1164	1164

Note: Table entries are maximum likelihood coefficients obtained from negative binomial models, with random effects at the agency-level and standard errors clustered on the agency. The agency-quarter is the unit of analysis. One-tailed tests: * $p < .05$, ** $p < .01$.

Table A10

In Table A10 below, we re-estimate Table 1 replacing the dependent variable with count of rules that are marked as "insignificant" in the *Unified Agenda*. Specifically, this includes any rule in the *Unified Agenda* that was given one of the following priority codes: "Substantive, Nonsignificant," "Routine and Frequent," or "Informational/ Administrative/ Other." This serves as a placebo test of sorts; by demonstrating that the results for our key theoretical variables are largely null (with the exception of *Aligned President* for final rules) for insignificant rules, we argue that this should increase confidence that the political effects are targeted at significant rules and not insignificant ones. This is consistent with our expectations that political factors affect substantive issues, but that they matter little for the sorts of mundane rules that fly beneath the radar.

Table A10. Counts of Insignificant Proposed Rules and Insignificant Final Rules by Quarter

	Model A13 Insignificant Proposed Rules	Model A14 Insignificant Final Rules
Priority	0.100	0.098
	(0.088)	(0.093)
Aligned President	0.060	0.131**
	(0.051)	(0.053)
Transition	0.038	0.009
	(0.203)	(0.207)
Midnight	-0.093	-0.117
	(0.317)	(0.357)
Opposition Size Unity	0.072	-0.003
	(0.297)	(0.314)
Employees (ln)	0.247**	0.412**
	(0.089)	(0.073)
Agency Ideology	-0.169	-0.162**
	(0.133)	(0.121)
Independent	0.284	0.707#
	(0.370)	(0.335)
Divided	0.037	-0.138*
	(0.067)	(0.072)
Time	-0.012*	-0.030**
	(0.006)	(0.006)
Time^2	0.00003	0.0003**
	(0.0001)	(0.0001)
Constant	-0.792	-2.302**
	(0.990)	(0.846)
N	1924	1924

Note: Table entries are maximum likelihood coefficients obtained from negative binomial models, with random effects at the agency-level and standard errors clustered on the agency. The agency-quarter is the unit of analysis. One-tailed tests: * $p < .05$, ** $p < .01$.

Table A11

  The courts serve as an additional check – albeit a reactive one – on agencies and their rulemaking processes. To assess the influence of the courts, we rely on Songer's (2008) and Kuersten and Haire's (2011) appellate court databases to create a count of the number of cases in which each agency was either a plaintiff or defendant before the federal appellate courts.[2] Because these data are available for only a limited time period, our sample size is further truncated. Consistent with the arguments presented in the paper, we expect this variable to have a depressing effect on the volume of rules produced, since more court appearances suggests more active oversight from the judiciary.

  In Table A11 we incorporate *Court Appearances*, which is a logged running total of an agency's appellate court appearances in the previous four quarters, into the models from Table 1 in the main body of the paper. Importantly, the results for the key theoretical variables are unaffected by including the courts. While the *Court Appearances* variable is negative for proposed rules (as predicted), it is not statistically significant. Counterintuitively, we find a positive and statistically significant effect for *Court Appearances,* suggesting that having to go before the court increases the production of final rules. While these results are puzzling, we believe they call out for

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[2] We focus on the appellate courts, because from an agency's perspective this is the most critical level of the judiciary (Shipan 1997). The political costs are higher to an agency when it appears before the court of appeals than before the trial court for two reasons. First, an appeal suggests that there may have been controversy about the agency's actions that warranted a second look from the courts. Second, the decision from the circuit court is likely to be binding on the agency. While appearances before the Supreme Court arguably represent higher stakes for an agency, they are also extremely rare; the vast majority of conflicts involving agencies are resolved at the appellate level.

more research into the nuanced ways that agencies respond to court oversight, as we

discuss in the conclusion to the paper.

Table A11. Counts of Proposed Rules and Final Rules (Including the Courts) by Quarter

	Model A15 Proposed Rules	Model A16 Final Rules
Priority	-0.091	-0.117
	(0.115)	(0.125)
Aligned President	0.142*	0.082
	(0.065)	(0.074)
Transition	-0.223	-0.460#
	(0.259)	(0.310)
Midnight	-0.682#	2.214**
	(0.518)	(0.446)
Opposition Size Unity	-0.830**	-0.797**
	(0.323)	(0.342)
Court Appearances (ln)	-0.012	0.159#
	(0.051)	(0.056)
Employees (ln)	0.394**	0.320**
	(0.097)	(0.086)
Agency Ideology	-0.290*	-0.551**
	(0.141)	(0.135)
Independent	-0.297	-0.524
	(0.403)	(0.373)
Divided	-0.134*	-0.147*
	(0.078)	(0.087)
Time	-0.012	-0.046**
	(0.009)	(0.010)
Time^2	0.0002*	0.001**
	(0.0002)	(0.0002)
Constant	-1.605	-1.687*
	(1.028)	(0.921)
N	1424	1424

Note: Table entries are maximum likelihood coefficients obtained from negative binomial models, with random effects at the agency-level and standard errors clustered on the agency. The agency-quarter is the unit of analysis. One-tailed tests: * $p < .05$, ** $p < .01$. # indicates significance at the .05 level in the direction opposite from the prediction.

Table A12

  For simplicity and ease of interpretation, in Table 3 we present our results as a split sample of non-priority and priority agencies. In Table A12 below, we present the results of a full model with *Priority* interacted with each of our key theoretical variables. As before we employ negative binomial models, with random effects at the agency-level and standard errors clustered on the agency. The results are highly consistent with those in Table 3.

Table A12. Interactive Model of Proposed Rules and Final Rules for Priority and Non-Priority Agencies by Quarter

	Model A17 Proposed Rules	Model A18 Final Rules
Aligned President	-0.123*	-0.110
	(0.079)	(0.088)
Priority x Aligned President	0.631**	0.399**
	(0.132)	(0.145)
Transition	-0.300	-0.387
	(0.2940	(0.339)
Priority x Transition	0.247	0.071
	(0.482)	(0.565)
Midnight	-0.095	1.542**
	(0.558)	(0.561)
Priority x Midnight	-1.739	1.217
	(1.128)	(0.796)
Opposition Size Unity	-0.901**	-0.660*
	(0.333)	(0.356)
Priority x Opposition Size	0.143	0.430
Unity	(0.517)	(0.552)
Priority	-0.436	-0.650
	(0.531)	(0.577)
Employees (ln)	0.349**	0.381**
	(0.083)	(0.074)
Agency Ideology	-0.288*	-0.694**
	(0.143)	(0.135)
Independent	-0.261	-0.062
	(0.386)	(0.347)
Divided	-0.168*	-0.211**
	(0.073)	(0.081)
Time	-0.006	-0.037**
	(0.008)	(0.010)
Time^2	0.0002*	0.001**
	(0.0002)	(0.0002)
Constant	-1.180	-1.959*
	(0.941)	(0.852)
N	1924	1924

Note: Table entries are maximum likelihood coefficients obtained from negative binomial models, with random effects at the agency-level and standard errors clustered on the agency. The agency-quarter is the unit of analysis. One-tailed tests: * $p < .05$, ** $p < .01$.

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