Supplementary Materials for Executive Coalition Building

Contents

List of Tables

List of Figures

A Agencies in Analysis

The following agencies are included in the analysis. Bold agencies are those included in the main analyses.

Table A.1: Agencies in Analysis

Agriculture Department	**Labor Department**
Commerce Department	**Merit Systems Protection Board**
Commodity Futures Trading Commission	**National Aeronautics and Space Administration**
Consumer Product Safety Commission	National Credit Union Administration
Defense Department	**National Labor Relations Board**
Education Department	**National Science Foundation**
Energy Department	**National Transportation Safety Board**
Environmental Protection Agency	**Nuclear Regulatory Commission**
Equal Employment Opportunity Commission	Peace Corps
Export-Import Bank	Pension Benefit Guaranty Corporation
Farm Credit Administration	**Personnel Management Office**
Federal Communications Commission	**Railroad Retirement Board**
Federal Deposit Insurance Corporation	Securities and Exchange Commission
Federal Election Commission	Selective Service System
Federal Labor Relations Authority	**Small Business Administration**
Federal Trade Commission	Smithsonian Institution
General Services Administration	**Social Security Administration**
Health and Human Services Department	**Transportation Department**
Housing and Urban Development Department	**Treasury Department**
Interior Department	**Homeland Security Department**
International Trade Commission	**Veterans Affairs Department**
Justice Department	

Note: **Bolded** agencies are those used in the main analysis, all agencies are used in the analyses in appendix C.2.

B Power Dependency

Some literature in the public administration tradition argues that strong agents force weaker ones into coalitions to further the goals of the stronger ones (see, *e.g.,* Hjern and Porter 1983). Systematic analysis shows no support for the claim that more politicized agencies, agencies ideologically aligned with the President, or large agencies are more likely to be central in the network, contrary to the power dependency model of networked

implementation (Hjern and Porter 1983). The power dependency theory predicts powerful agencies important to or aligned with the President, those with more political capital and power, will induce agencies with less political capital to collaborate in order to further the goals of the more powerful agencies. Each of these three variables reasonably proxies for political importance to the President and political capital generally. Politicization affords agencies a more direct line to the President and the President generally politicizes those agencies important to their political success (Lewis 2010), ideological alignment with the President may provide leverage in negotiations with other agencies, and a large workforce affords agencies greater capacity. However, I find no evidence to suggest power dependency explains agency decisions to collaborate.

Table B.1: Centrality and Political Capital, 1998-2012

| | *Dependent variable:* | | | | | |
| | Degree | | Betweenness | | Logged Strength | |
	(1)	(2)	(3)	(4)	(5)	(6)
Politicization	−0.034	−0.132	0.009	0.038	−0.135	−0.037
	(0.409)	(1.241)	(0.016)	(0.024)	(0.229)	(0.211)
Ideological Proximity	1.205	0.711	0.072	0.066	0.347	0.188
to President	(1.717)	(1.591)	(0.063)	(0.063)	(0.527)	(0.305)
Logged Employees	0.961***	−6.437*	0.040*	−0.002	0.431***	−0.885
	(0.126)	(2.641)	(0.016)	(0.049)	(0.081)	(0.631)
Mean & St. Dev. of	3.357		0.085		1.379	
Dependent Variable	(5.563)		(0.228)		(1.703)	
Observations	465	465	465	465	465	465
Agencies	32	32	32	32	32	32
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Agency FEs	No	Yes	No	Yes	No	Yes
Adjusted R^2	0.471	0.532	0.111	0.531	0.332	0.809

$^*p<0.05; ^{**}p<0.01; ^{***}p<0.001$

Note: Unit of analysis is the agency-year. Heteroskedasticity-corrected standard errors clustered by agency reported in parentheses.

Table B.1 displays estimates from least squares models regressing measures of centrality on each agency's *politicization* ratio (the ratio of political appointees to careerists),[1] *ideological proximity to the President* (the negative Euclidean distance between the Presi-

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[1]I measure politicization as the ratio of political appointees over the number of career senior executive service members following previous work (see, *e.g.*, Lewis 2010; Lowande 2019).

dent's DW-NOMINATE ideal point estimate and the agency's Chen and Johnson (2015) ideal point estimate), the *logged count of employees* within that agency, and fixed effects for year in all models and agency in even models. *Degree* is measured as the number of other agencies each agency has promulgated at least one joint rule with, *betweenness* is a measure of how well each agency connects other agencies to the network,[2] and *strength* is a measure of the total count of rules each agency has promulgated with other agencies. I normalize *betweenness* within-year to lie between zero and one and take the natural logarithm of *strength*.

Table B.1 shows no evidence of a positive relationship between any of the measures of and centrality and is thus inconsistent with the power dependency hypothesis. The *logged count of employees* is the only variable with a consistently positive and significant relationship with network centrality with a standard deviation increase in employees resulting in effects of 0.33 standard deviations of *degree*, 0.35 standard deviations of *betweenness*, and 0.05 of *logged strength*. The relationship does not hold when including agency fixed effects and therefore leveraging only within-agency variation in employment.

Last, in the main regression analysis in the text, the coefficients on the control variables further cast doubt on the ability of power dependency theory to explain coalition formation. The agency-level analysis in table B.1 showed that measures of political capital do not predict network centrality, and the dyad-level analysis presented in the main analysis in the manuscript shows that differences in these measures of political capital (politicization and employment) do not predict the promulgation of joint rules. If the power dependency

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[2]Formally, betweenness is calculated as:

$$B(v) = \sum_{s \neq v \neq t} \frac{\sigma_{st}(v)}{\sigma_{st}}$$

where σ_{st} is the number of shortest paths between nodes s and t and $\sigma_{st}(v)$ is the number of those paths that pass through node v. I then normalize the measure within-year:

$$\text{normal}(B_t(v)) = \frac{B_t(v) - \min(B_t)}{\max(B_t) - \min(B_t)}$$

theory did explain the data, we might expect small agencies to collaborate often with large ones, and non-politicized agencies to collaborate often with politicized ones, which would suggest the larger more politicized agencies inducing or coercing cooperation. Instead, the strategic theory presented here better explains the data.

C   Robustness Checks

C.1   Reanalysis with Logit Estimator

I justify in the text why I use a linear probability model, but table C.1 shows that main results on the interaction are robust to a logit specification as well. The number of observations is lower since the logit estimator drops any dyads that always or never formed a coalition due to the fixed effects.

Table C.1: Reanalysis with Logit Estimator

		Dependent variable:		
		Coalition Formation		
	(1)	(2)	(3)	(4)
Agency Alignment	2.711 (1.575)	1.966 (1.696)	−4.223 (2.861)	−5.814 (3.357)
Presidential Misalignment	−2.541 (1.594)	−2.867 (1.656)	−7.502** (2.516)	−8.578** (2.958)
Agency Alignment × Pres. Misalignment		10.526* (5.153)		19.409* (8.211)
Overlapping Laws			−0.039 (0.060)	−0.069 (0.065)
Presidential Attention			−1.352* (0.568)	−1.379* (0.582)
House Misalignment			−30.061 (15.362)	−29.109 (14.946)
Court Misalignment			37.516** (13.487)	38.598** (13.375)
Log(Total Rules)			−6.395*** (1.588)	−7.159*** (1.592)
Employment Difference			−0.240 (0.892)	−0.361 (0.929)
Politicization Difference			−1.020 (1.989)	−1.445 (1.925)
Average Politicization			−2.292*** (0.591)	−2.101*** (0.570)
Observations	858	858	858	858
Dyad & Term FEs	Yes	Yes	Yes	Yes
Log Likelihood	−303.529	−300.979	−219.893	−215.488
Note:				*p<0.05; **p<0.01; ***p<0.001

Note: Unit of analysis is the dyad-year. Heteroskedasticity-corrected standard errors clustered by dyad reported in parentheses.

C.2 Reanalysis with All Dyads

The main text reports results culling dyads to only those that are politically relevant, that is, likely able to form coalitions in the first place. Those agencies were selected by eliminating any agencies that did not employ at least one career Senior Executive Service manager from 1996–2012. The results in table C.2 shows that the results hold when using all agencies. Expanding the dataset to irrelevant dyads deflates the mean of the dependent variable to 0.154 with a standard deviation of 0.361.

Table C.2: Reanalysis with All Dyads

| | *Dependent variable:* | | | |
| | Coalition Formation | | | |
	(1)	(2)	(3)	(4)
Agency	0.036	0.021	0.040	0.009
Alignment	(0.032)	(0.033)	(0.041)	(0.044)
Presidential	−0.065	−0.096	−0.113*	−0.128*
Misalignment	(0.049)	(0.051)	(0.056)	(0.056)
Agency Alignment ×		0.466***		0.429**
Pres. Misalignment		(0.134)		(0.141)
Overlapping			−0.009***	−0.009***
Laws			(0.002)	(0.002)
Presidential			−0.010	−0.011
Attention			(0.013)	(0.013)
House			0.175	0.100
Misalignment			(0.130)	(0.135)
Court			−0.121	−0.044
Misalignment			(0.093)	(0.100)
Log(Total Rules)			−0.023	−0.024
			(0.018)	(0.018)
Employment			−0.002	−0.005
Difference			(0.026)	(0.026)
Observations	3,570	3,570	3,570	3,570
Dyad & Term FEs	Yes	Yes	Yes	Yes
Adjusted R^2	0.460	0.462	0.479	0.481

*p<0.05; **p<0.01; ***p<0.001

Note: Unit of analysis is the dyad-year. Heteroskedasticity-corrected standard errors clustered by dyad reported in parentheses.

C.3 Year-Level Analysis

The analyses in the main text aggregate data to the presidential term level, but I indicated in the text that all results are robust to year-level analyses. Table C.3 displays results from the same specifications as the main analysis in the text but with a dyad-year dataset. The politicization ratio for some agencies is undefined in certain years because they employed no career Senior Executive Service managers, leading to an undefined politicization ratio.

Table C.3: Reanalysis at the Year Level

		Dependent variable:		
		Coalition Formation		
	(1)	(2)	(3)	(4)
Agency Alignment	0.053 (0.029)	0.050 (0.029)	−0.060 (0.039)	−0.089* (0.040)
Presidential Misalignment	−0.042 (0.040)	−0.055 (0.041)	−0.057 (0.042)	−0.087* (0.044)
Agency Alignment × Pres. Misalignment		0.245* (0.112)		0.643*** (0.126)
Overlapping Laws			−0.019*** (0.004)	−0.020*** (0.004)
Presidential Attention			−0.040*** (0.009)	−0.041*** (0.009)
Court Misalignment			0.243*** (0.067)	0.302*** (0.070)
House Misalignment			−0.105 (0.064)	−0.132* (0.065)
Log(Total Rules)			−0.061*** (0.013)	−0.067*** (0.013)
Employment Difference			0.007 (0.013)	0.003 (0.013)
Politicization Difference			0.009 (0.019)	0.010 (0.018)
Average Politicization			−0.018 (0.018)	−0.015 (0.018)
Observations	7,750	7,750	6,867	6,867
Dyad & Term FEs	Yes	Yes	Yes	Yes
Adjusted R^2	0.385	0.385	0.390	0.393

*p<0.05; **p<0.01; ***p<0.001

Note: Unit of analysis is the dyad-year. Heteroskedasticity-corrected standard errors clustered by dyad reported in parentheses.

C.4 Count Dependent Variable

The analyses in the main text use a binary measure of *coalition*, but I reported that all analyses were robust to a count measure of the coalition formation. Table C.4 displays results from estimating the same models as the main text but where the dependent variable is the logged count (plus one) of the number of joint rules promulgated by each agency dyad-term. The mean of the dependent variable is 0.307 and the standard deviation is 0.702.

Table C.4: Reanalysis with Count Dependent Variable

	Dependent variable:			
	Logged Count of Joint Rules			
	(1)	(2)	(3)	(4)
Agency Alignment	0.088 (0.078)	0.085 (0.077)	−0.176 (0.111)	−0.210 (0.116)
Presidential Misalignment	−0.093 (0.105)	−0.136 (0.108)	−0.070 (0.104)	−0.123 (0.105)
Agency Alignment × Pres. Misalignment		0.626* (0.288)		1.111*** (0.315)
Overlapping Laws			−0.011*** (0.003)	−0.011*** (0.003)
Presidential Attention			−0.0001 (0.023)	−0.001 (0.022)
House Misalignment			−0.284 (0.374)	−0.388 (0.383)
Court Misalignment			0.741* (0.301)	0.885** (0.315)
Log(Total Rules)			−0.118** (0.045)	−0.135** (0.044)
Employment Difference			0.006 (0.051)	−0.003 (0.051)
Politicization Difference			−0.125 (0.074)	−0.126 (0.075)
Average Politicization			−0.003 (0.017)	0.003 (0.017)
Observations	1,953	1,953	1,953	1,953
Dyad & Term FEs	YES	YES	YES	YES
Adjusted R^2	0.716	0.717	0.731	0.733

*p<0.05; **p<0.01; ***p<0.001

Note: Unit of analysis is the dyad-year. Heteroskedasticity-corrected standard errors clustered by dyad reported in parentheses.

C.5 Reanlysis on Agencies with at Least One Overlapping Law

The analyses in the main text subset the data only to those dyads where each agency employed at least one career Senior Executive Service manager from 1996–2012. An alternative subsetting of the data to cull the analysis to only politically relevant dyads is to only include dyads where at least one significant law since 1947 delegates to both agencies. The results in table C.5 shows that the results hold when using only agencies with at least one overlapping law.

Table C.5: Reanalysis with Agencies with Overlapping Laws

	Dependent variable:			
	Coalition Formation			
	(1)	(2)	(3)	(4)
Agency Alignment	0.131 (0.100)	0.091 (0.102)	−0.144 (0.115)	−0.211 (0.117)
Presidential Misalignment	−0.558*** (0.136)	−0.614*** (0.137)	−0.511*** (0.144)	−0.572*** (0.144)
Agency Alignment × Pres. Misalignment		1.015** (0.321)		1.468*** (0.330)
Overlapping Laws			−0.005* (0.002)	−0.005** (0.002)
Presidential Attention			−0.072** (0.026)	−0.072** (0.025)
Court Misalignment			1.511*** (0.397)	1.569*** (0.395)
House Misalignment			−1.185* (0.475)	−1.159* (0.469)
Log(Total Rules)			−0.149** (0.056)	−0.180*** (0.055)
Employment Difference			−0.006 (0.052)	−0.015 (0.052)
Politicization Difference			−0.055 (0.093)	−0.069 (0.093)
Average Politicization			−0.026 (0.022)	−0.014 (0.023)
Observations	1,584	1,584	1,584	1,584
Dyad & Term FEs	YES	YES	YES	YES
Adjusted R^2	0.448	0.452	0.477	0.485

*p<0.05; **p<0.01; ***p<0.001

Note: Unit of analysis is the dyad-presidential term. Heteroskedasticity-corrected standard errors clustered by dyad reported in parentheses.

C.6 Reanlysis with Alternative Operationalization of Presidential Misalignment

The analyses in the main text use the average distance between each agency forming a dyad and the president in a given term. To show that the results are not driven by quirks in using an average as an independent variable, table C.6 estimates the same models as in the main analysis, but operationalizes presidential misalignment as the ideological distance between the agency closest in ideological space to the President and the President.

Table C.6: Reanalysis with Alternative Operationalization of Presidential Misalignment

	Dependent variable:			
	rule			
	(1)	(2)	(3)	(4)
Agency Alignment	0.197** (0.074)	−0.043 (0.102)	0.109 (0.102)	−0.282 (0.144)
Presidential Misalignment	−0.192 (0.099)	−0.250* (0.100)	−0.207* (0.100)	−0.262** (0.102)
Agency Alignment × Pres. Misalignment		0.774** (0.241)		1.074*** (0.255)
Overlapping Laws			−0.010*** (0.002)	−0.010*** (0.002)
Presidential Attention			−0.044* (0.020)	−0.047* (0.020)
House Misalignment			0.293 (0.265)	0.100 (0.279)
Court Misalignment			0.086 (0.219)	0.302 (0.237)
Log(Total Rules)			−0.105** (0.040)	−0.119** (0.040)
Employment Difference			−0.007 (0.044)	−0.013 (0.043)
Politicization Difference			−0.071 (0.066)	−0.059 (0.065)
Observations	1,953	1,953	1,953	1,953
Dyad & Term FEs	YES	YES	YES	YES
Adjusted R^2	0.453	0.455	0.478	0.483

*p<0.05; **p<0.01; ***p<0.001

Note: Unit of analysis is the dyad-presidential term. Heteroskedasticity-corrected standard errors clustered by dyad reported in parentheses.

C.7   Delete-a-Group Jackknife

This section shows the distribution of coefficients for the interaction term between *agency alignment* and *presidential misalignment* estimated from models with the same specification as Model 4 in the main text when dropping one dyad at a time one agency at a time. With grouped data, this process allows me to check whether results are driven by one agency or dyad.
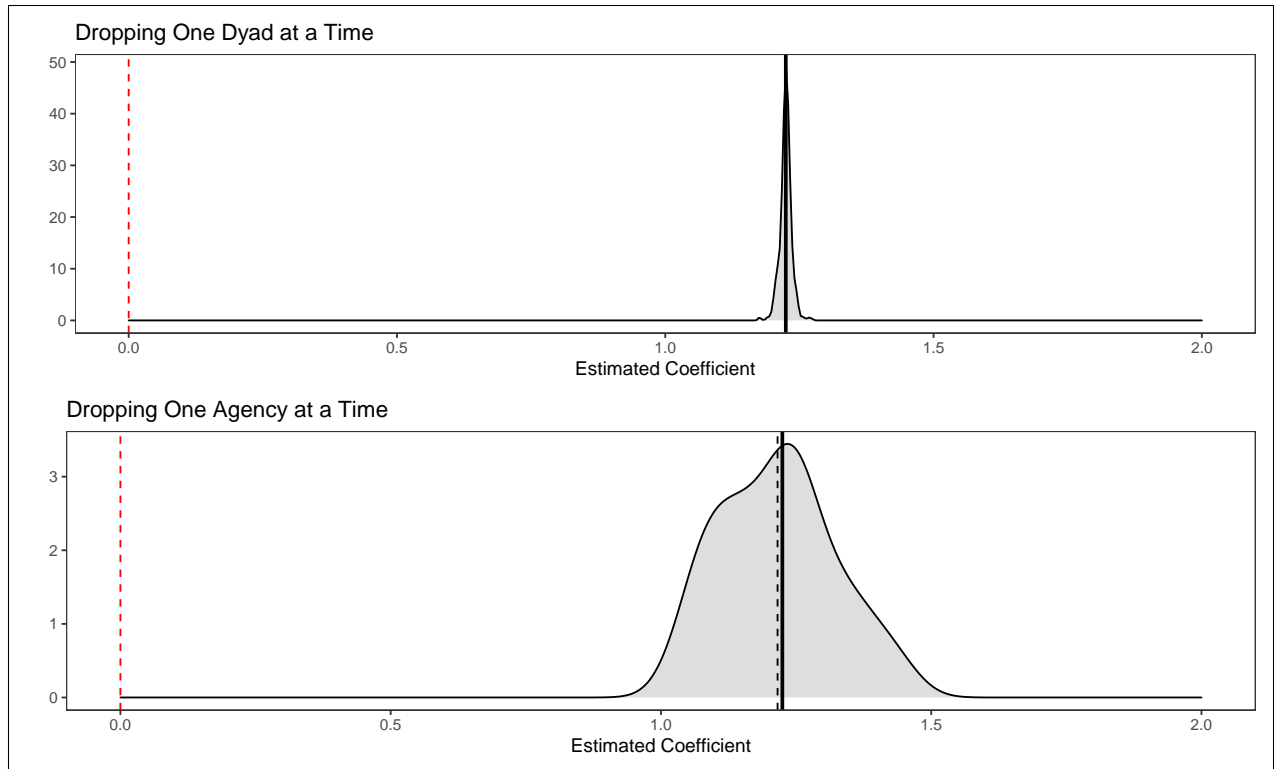

Figure C.1: Delete-a-Group Jackknife Distribution. Each panel displays the distribution of coefficients estimated using the same specification as model 4 in the main text but dropping either one dyad or agency at a time.

Figure C.1 displays the distributions of coefficients estimated from these specifications. Solid black lines display the main coefficient reported in the text and dotted black lines display the mean value of the distribution coefficients recovered from using delete-a-group jackknife resampling. The two lines are almost identical in each panel. Taken together, these analyses indicate that the results I report in the main text are not driven by certain dyads or agencies. Figure C.2 displays the estimated coefficients and 95% confidence

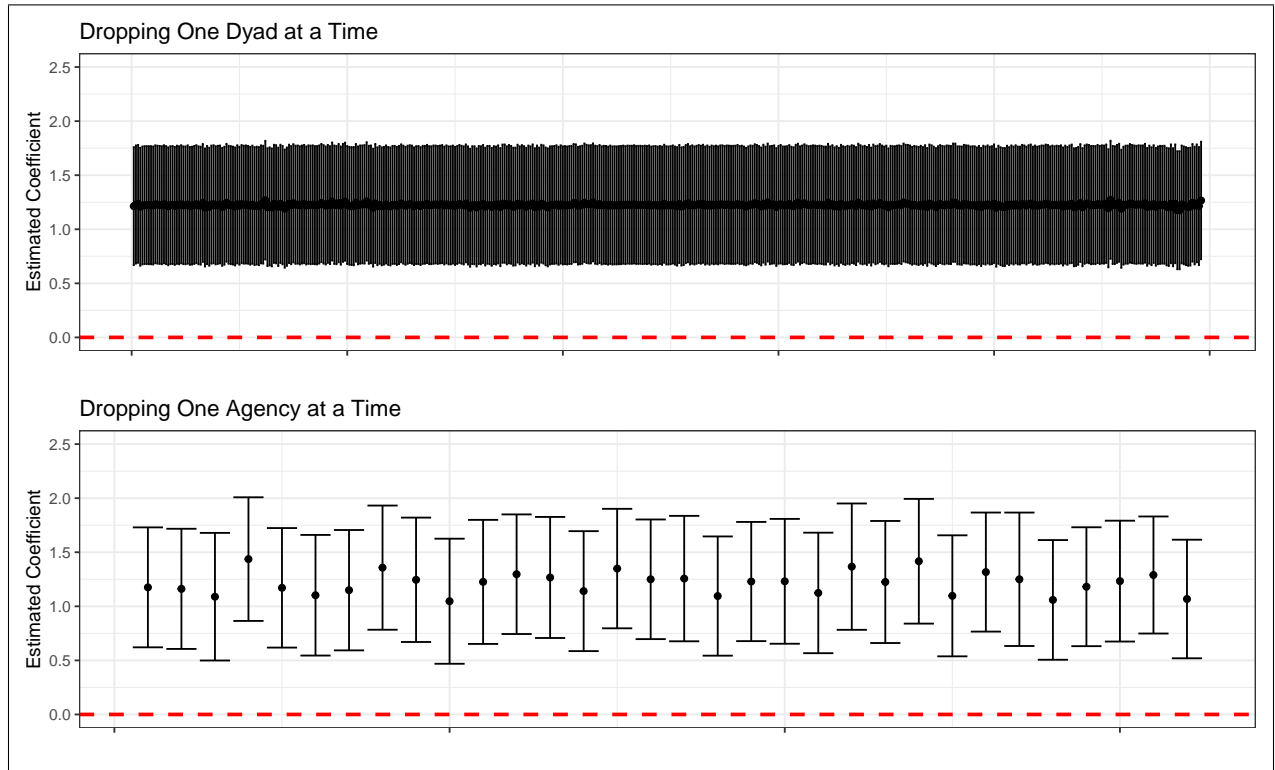intervals recovered from the models dropping one dyad or agency at a time.

Figure C.2: Delete-a-Group Jackknife Coefficients. Each panel displays the coefficients and 95% confidence intervales estimated using the same specification as model 4 in the main text but dropping either one dyad or agency at a time.

D   Fixed Effects Adjustments

When drawing inferences about the substantive effects of some independent variable using panel data, it is especially important to consider how the independent variable is distributed *within* units in order to avoid drawing inferences from extrapolation. In order to identify a plausible counterfactual change in *agency alignment* and *presidential misalignment*, I follow the procedure outlined by Mummolo and Peterson (2018). First, I compare the distributions of the independent variables before and after absorbing variation from the dyad and year fixed effects. Figure D.1 displays the original distributions in grey and the distributions after absorbing variation from the fixed effects in red. *Agency alignment* experiences a small reduction in variance when adjusting for the fixed effects, while more

of the variation in *presidential misalignment* can be explained by the dyad and year fixed effects, suggesting attenuation of the substantive effects, like I report in the main text.
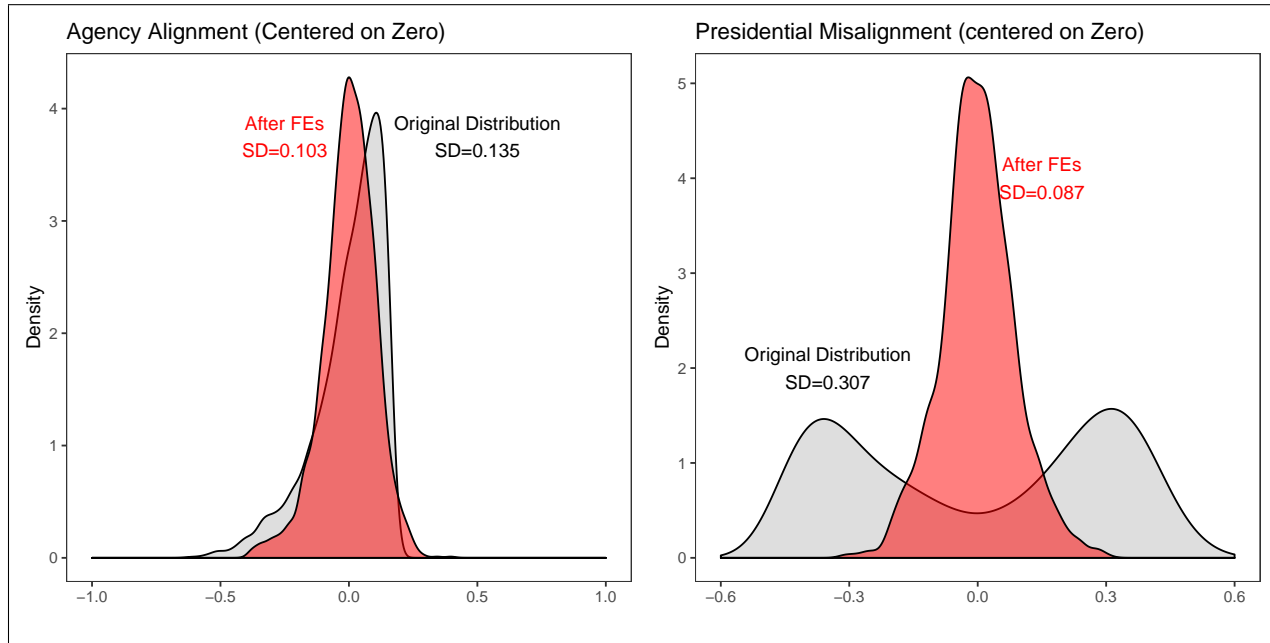

Figure D.1: Independent Variable Distributions. The gray plots display the distribution of agency alignment (left) and presidential misalignment (right) without accounting for the dyad and year fixed effects, while the red plots display the distribution of the independent variables after adjusting for the dyad and year fixed effects by residualizing the variables with respect to the fixed effects (Mummolo and Peterson 2018).

Identifying an appropriate counterfactual is aided by one further step: finding the average, within-unit range in the independent variables. Figure D.2 displays the distribution of within-dyad ranges in the independent variables. The left panel shows that the median within-dyad range in *agency alignment* is about 0.21, and the right panel shows that the median within-dyad range in *presidential misalignment* is about 0.72. Thus, each coefficient in the main tables can be multiplied by these values in order to estimate the effect of the median, maximum within-unit shift in the independent variables.
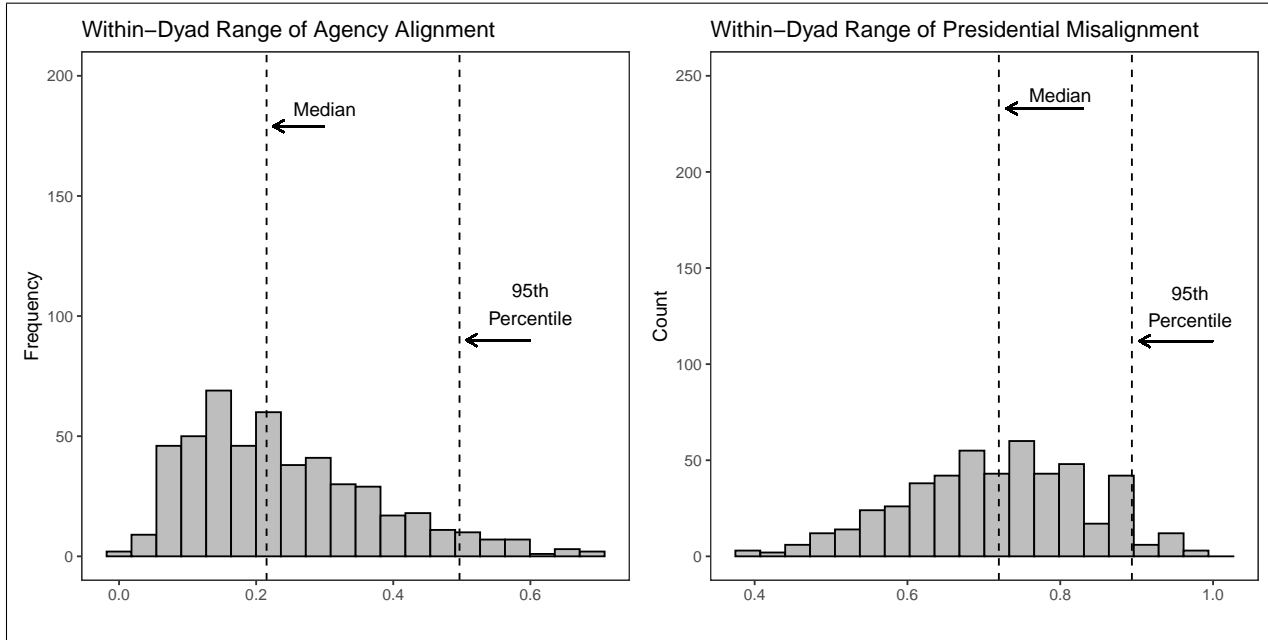
Figure D.2: Within-Dyad Ranges of Independent Variables. The distributions here do not account for the dyad and year fixed effects, but they do display the distribution of within-dyad ranges of agency alignment (left) and presidential misalignment (right), thus providing a useful counterfactual with which to estimate substantive effects (Mummolo and Peterson 2018). Dotted lines represent the median and 95th percentiles of the distribution to allow readers to determine an appropriate counterfactual if the one discussed in the text (median) is unconvincing.
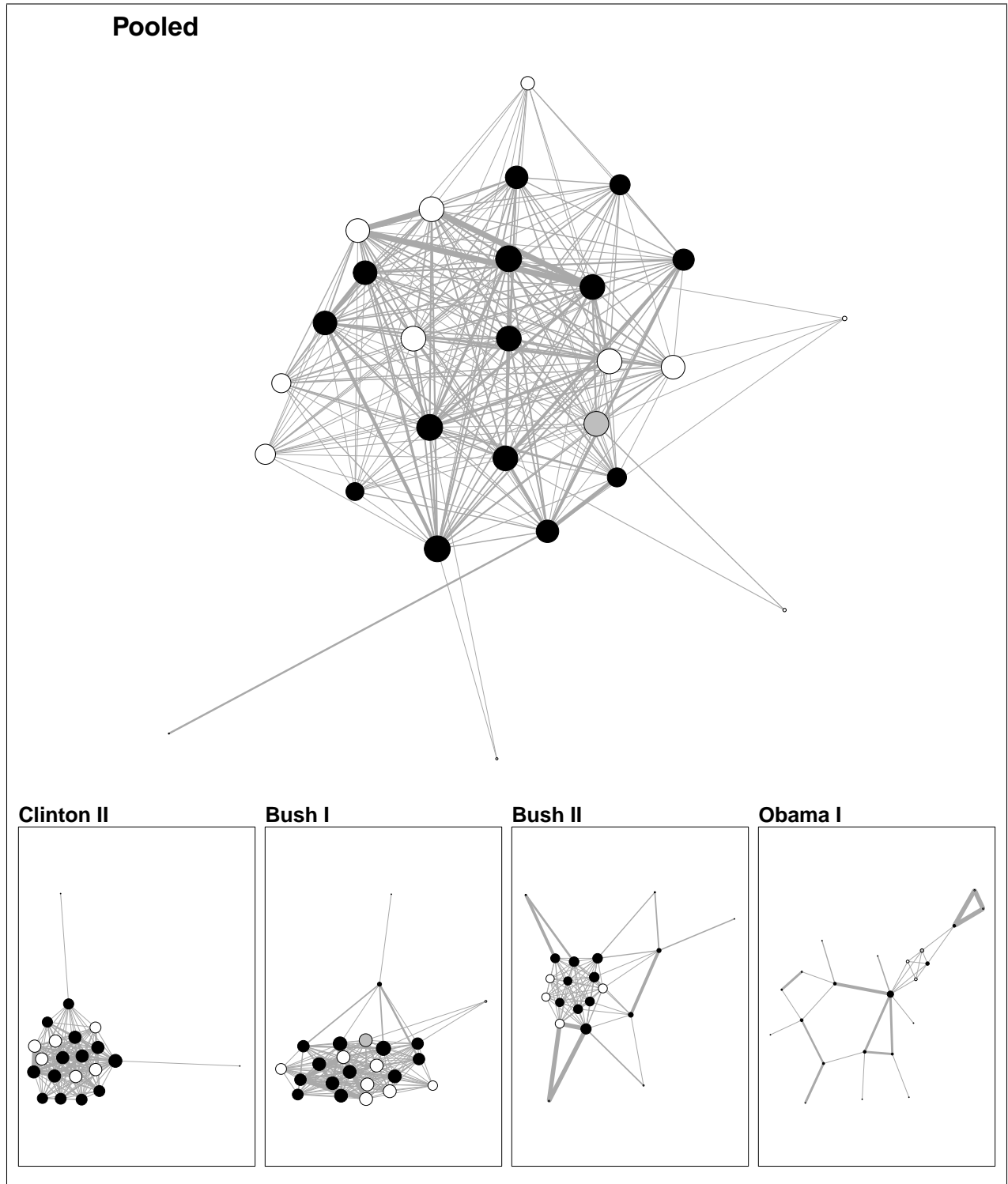
E   Network Figure

Figure E.1: Agency Coalition Networks, 1997–2012. Edge thickness is a function of the number of jointly promulgated rules between the two node agencies forming a coalition between 1997 and 2012, and node size is a function of the degree measure—the number of unique agencies with which an agency forms at least one coalition—for each agency. Black nodes are cabinet departments, grey nodes are agencies in the Executive Office of the President, and white nodes are independent agencies. Figure does not include the eight agencies that never formed a coalition.

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