Supplementary appendices for **Graeme T. Boushey and Robert J. McGrath. N.d. (forthcoming). "Experts, Amateurs, and Bureaucratic Influence in the American States."** ***Journal of Public Administration Research and Theory.***

Appendix A: Descriptive Statistics

Table A1: Descriptive Statistics for Primary Estimation Sample

	count	mean	sd	min	max
Proposed Rules	861	285.5	252.2	0	2351
Proposed Rules (affecting multiple sections of state code)	861	197.5	248.2	0	2308
Adopted Rules	861	291.7	249.7	0	1837
Adopted Rules (affecting multiple sections of state code)	861	189.9	230.0	0	1798
Difference in Salary (in thousands)	861	57.6	17.6	-13.1	96.9
Difference in Salary (in thousands) – excl. Gov. and Cabinet	861	53.7	17.7	-18.1	93.4
Executive Salary (in thousands)	861	86.9	13.8	54.7	131.6
Executive Salary (in thousands) – excl. Gov. and Cabinet	861	83.0	12.4	54.2	115.9
Legislative Salary (in thousands)	861	30.4	23.0	0.10	156.2
Legislative Session Length	861	158.2	98.7	39	549.5
Legislative Expenditures (per Legislator)	861	708.8	820.2	57.3	5523.1
Term Limits Enacted	861	0.33	0.47	0	1
Term Limits Impact	861	0.17	0.37	0	1
Divided Government	861	0.57	0.50	0	1
Democratic Governor	861	0.45	0.50	0	1
First Year of New Governor	861	0.15	0.36	0	1
Number of Bills Enacted (in hundreds)	861	3.86	3.05	0	23.2
Leg. Out of Session	861	0.050	0.22	0	1
Size of State Workforce (Log)	861	10.9	0.78	9.18	12.8
State Population (Log)	861	15.1	0.96	13.1	17.4
State Per Capita Income (in thousands)	861	34.4	3.96	24.6	47.5

Note: Proposed and adopted rules data for all rules, and then for only those rules that affect multiple sections of a state's code of regulations. The latter measure is an attempt to identify more important/consequential rules. Legislative and executive salaries adjusted for inflation (to year 2000 dollars). Executive compensation is an average across 55 high-level state executives for each state. This includes the governor, lieutenant governor, secretary of state, etc., along with individual agency heads. Alternatively, the "no governor, no cabinet" measure excludes the governor, lieutenant governor, secretary of state, attorney general, and treasurer. Legislative salaries are for rank and file members and include per diem allotments multiplied by the number of days in session.

Table A2: Distribution of Rule Topics (Adopted Rules), 1994-2005

Topic	1994-2005	1994-1999	2000-2005
Agriculture	3.7%	3.8%	3.6%
Business and Corporations	13.8%	12.4%	15.8%
Chemicals	2.8%	2.6%	2.9%
Communication and Information	6.3%	5.3%	7.8%
Consumer Affairs	0.8%	0.7%	0.8%
Education	7.9%	7.8%	7.9%
Energy	2.1%	2%	2.3%
Environment	6.2%	6.8%	5.3%
Financial Institutions	2.3%	2.3%	2.3%
Food and Beverages	1%	1%	1%
Health and Social Services	24.8%	25.6%	23.5%
Insurance	2.1%	2.3%	2%
Labor and Employment	5.3%	5.5%	5%
Law and Justice	3.3%	3.4%	3%
Politics and Government	4.3%	4.3%	4.3%
Real Estate and Construction	2.9%	2.7%	3%
Recreation and the Arts	2.7%	3.2%	2%
Resource Management and Preservation	3.9%	4.3%	3.3%
Taxation	0.2%	0.3%	0.2%
Transportation	2.3%	2.5%	2%
Utilities	1.2%	0.7%	1.8%

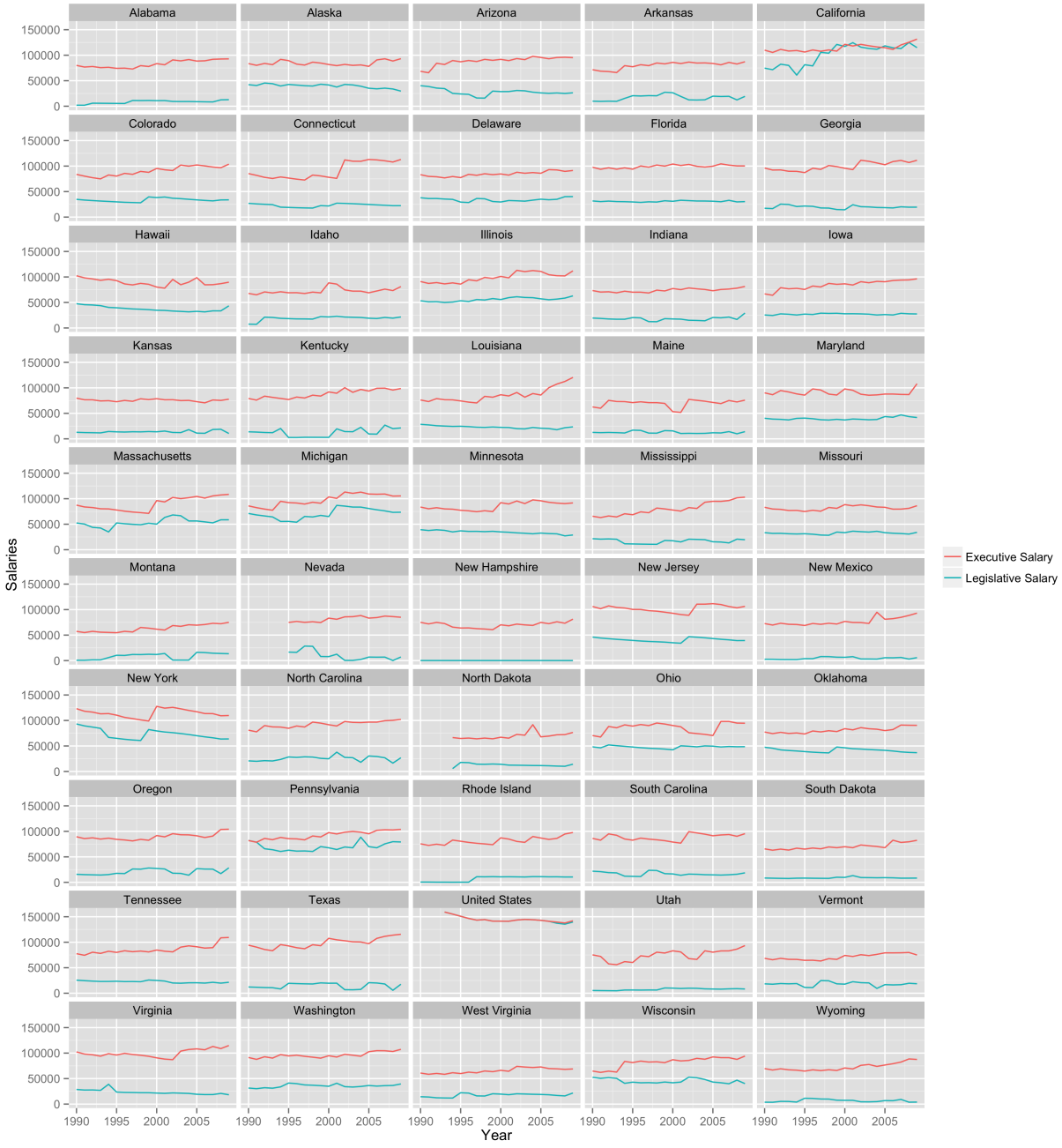
Note: Topics come from Lexis Nexis major topic codes, which are only available in a consistent format from 1994-2005. Cell entries are the percentage of all rules that pertain to each topic. Columns may not add to 100% due to rounding.

Table A3: Time to Rule Adoption (in days), by State

State	Mean	SD	Max	State	Mean	SD	Max
All States	112.99	100.23	2,755	Missouri	133.59	40.98	672
Alabama	68.79	34.48	614	Montana	77.59	42.31	434
Alaska	174.57	165.15	2,755	Nevada	130.71	121.87	1,323
Arizona	183.71	112.07	1,876	New Hampshire	139.62	80.20	2,268
Arkansas	93.48	98.01	1,027	New Jersey	115.59	90.86	777
California	214.85	132.13	1,426	New Mexico	102.89	108.04	1,216
Colorado	60.76	50.22	677	New York	117.27	98.79	1,184
Connecticut	247.78	172.45	1,533	North Carolina	169.86	114.99	924
Delaware	84.24	81.77	1,126	North Dakota	192.14	139.39	1,825
Florida	75.14	65.14	1,228	Ohio	100.69	102.91	1,820
Georgia	69.49	57.49	563	Oklahoma	140.27	81.86	1,280
Hawaii	184.74	171.73	937	Oregon	79.87	85.74	2,586
Idaho	250.96	118.49	822	Pennsylvania	306.75	239.91	1,588
Illinois	154.30	80.15	502	Rhode Island	93.64	101.21	1,011
Indiana	164.30	79.53	939	South Carolina	271.27	130.70	1,071
Iowa	67.89	40.01	583	South Dakota	64.00	26.44	385
Kansas	114.17	93.65	1,133	Tennessee	248.16	222.06	2,146
Kentucky	109.94	66.70	1016	Utah	57.41	42.24	351
Louisiana	118.71	61.52	1,371	Vermont	163.46	98.24	1,060
Maine	104.76	73.49	1,104	Virginia	180.17	149.31	1,594
Maryland	79.40	58.15	826	Washington	64.35	46.30	773
Massachusetts	100.14	126.81	1,334	West Virginia	231.59	145.90	1,270
Michigan	250.92	186.99	1,066	Wisconsin	213.88	164.78	1,842
Minnesota	147.84	68.64	461	Wyoming	143.00	123.21	1,066
Mississippi	58.97	75.67	997				

Note: Time to adoption calculated for each rule that was eventually adopted (N: 292,568).

Figure A1: Legislative and Executive Salaries, by State



Note: Legislative and executive salaries adjusted for inflation (to year 2000 dollars). Executive compensation is an average across 55 high-level state executives for each state. This includes the governor, lieutenant governor, secretary of state, etc., along with individual agency heads. Legislative salaries are for rank and file members and include per diem allotments multiplied by the number of days in session. Nebraska excluded.

Appendix B: Using All Available Data

For all of the results presented in the body of the text, we use a truncated sample, manually eliminating observations where we have doubts regarding data completeness. As an example, our Lexis Nexis searches returned 32 proposed and 82 adopted rules for Alabama in 1990, but subsequent years never have fewer than 200 proposed or adopted rules. We have therefore concluded that the 1990 data is incomplete. These cases of incomplete data usually occur at the beginning of our time series (1990-1994), or at the very end. An example here is the 0 proposed rules in Virginia in 2010, after there were 224 in 2009. We made these decisions subjectively and were naturally concerned that we might wrongly conclude that a year with little rulemaking activity was a year with missing data. As such incorrect coding would be systematic, we wanted to make sure that including these marginal cases as correct data does not affect our results. To check the validity of our decisions and examine the robustness of our results, we reexamine the models from Table 1 with the full dataset. Table B1 demonstrates that our results maintain when we use all available data. Ultimately, we are convinced that, on the whole, our coding decisions are sound and that our data accurately capture rulemaking activities of state agencies.

Table B1: OLS Models of Proposed and Adopted Rules in the States, 1990-2010 — All Data

	(1) Proposed Rules	(2) Adopted Rules
Difference in Salary (in thousands)	0.958**	0.946**
	(0.451)	(0.457)
Legislative Session Length	0.061	0.079*
	(0.051)	(0.045)
Legislative Expenditures (per Legislator)	-0.001	0.017
	(0.038)	(0.027)
Divided Government	10.239	10.590
	(10.101)	(9.535)
Democratic Governor	1.130	2.246
	(12.600)	(10.435)
First Year of New Governor	-22.554**	-27.066**
	(9.548)	(11.783)
Number of Bills Enacted (in hundreds)	2.160	0.981
	(2.234)	(2.374)
Leg. Out of Session	36.209*	54.327**
	(18.277)	(26.264)
Size of State Workforce (Log)	4.664	-14.542
	(99.861)	(80.323)
State Population (Log)	-92.683	-69.100
	(155.754)	(92.138)
State Per Capita Income	-1.490	-1.219
	(2.782)	(2.363)
Proposed Rules (Lag)	0.545***	
	(0.031)	
Adopted Rules (Lag)		0.478***
		(0.048)
(Constant)	1477.620	1313.694
	(2226.757)	(1311.937)
Year FE	Yes	Yes
State FE	Yes	Yes
Observations	939	939
R2	0.873	0.887
rMSE	93.367	86.815
Clusters	48	48

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$

Note: Entries are linear regression coefficient estimates and standard errors, clustered by state. The dependent variable in model (1) is the total number of administrative rules proposed in each state-year, the dependent variable in model (2) is the total number of administrative rules adopted in each state-year. State and year fixed effects are included where indicated but not reported. Nebraska and Texas are excluded from all models. Legislative and executive salaries adjusted for inflation (to year 2000 dollars) before creating the *Difference in Salary* measure.

Appendix C: Alternative Specifications

In the main text, we have reported results from models with state fixed effects (FE) and lagged dependent variables (LDV). As we note, this strategy is recommended in an influential article by Beck and Katz (2004) for longer panels ($t \gtrapprox 20$). Yet, in their discussion of the suitability for FE and LDV designs to identify causal effects in panel data, Angrist and Pischke (2008) suggest estimating both specifications. They aver that doing so allows for a "bracketing" interpretation: if the true model is LDV and you estimate a FE model, the estimated effect will tend to be too large; if the true model is FE and you estimate LDV, the effect will tend to be too small; therefore, it is logical to think that the true effect lives somewhere between these two estimates (see Guryan 2001 for a more formal statement of this approach). We do this and present results in Table C1 below.

Taking the bracketing approach, the estimated effect of a $1,000 increase in *Difference in Salary* on rulemaking is an increase in proposed rules of between .77 and .94 and in adopted rules of between .75 and .89 rules per year. These effects, while smaller than the estimates in the main text, each indicate a statistically significant and substantively strong relationship. In addition, the estimates of the LDV models (the lower bound of the bracket) do not take into account the over-time dynamics of the true effects. That is, an expertise gap leads to some level of rulemaking, which then feeds into the next period through the lagged term. Static coefficients do no capture the aggregate over time effects and can misrepresent the true substantive effects. In a recent paper, Williams and Whitten (2012) suggest a process of "dynamic simulation" for creating meaningful substantive interpretations of LDV models of time-series cross-sectional data, taking into account such long-term effects. In Figure C1, we present a plot of these long-term effects on proposed rulemaking,[a] with 90% confidence intervals, for different levels of *Difference in Salary*.

We see that if a state were to maintain mean levels of the *Difference in Salary* variable over time, there is essentially no dynamic change in proposed rulemaking—in fact, the middle line in the figure is almost exactly flat. However, for the highest levels of *Difference in Salary* (the top line in the figure), we can see that there is a clear long-term change in the aggregate effect of an expertise gap on rulemaking. In particular, the predicted number of proposed rules is significantly larger at the end of the simulated time period (period 20, corresponding to the year 2010 in the actual data) than it is at the beginning. This largely corroborates the substantive effects found in the FE models from the main text and Table C1. In particular, after 20 years of affecting rulemaking both directly and through its effect on the lagged value of rulemaking, maximum change in *Difference in Salary* has a simulated long-term substantive effect of 150 or so new rules a year over the simulated early-term effect. These findings are consistent with those presented in the body of the paper and assure us of the robustness of the results.

We measure *Difference in Salary* contemporaneously to proposed and adopted rulemaking in the main body of the paper. Yet, it might be the case that it takes time for changes in *Difference in Salary* to manifest into theoretically relevant changes in the balance of expertise between branches. To assess this possibility and further scrutinize the robustness of our results, we alternatively measured *Difference in Salary* with lagged values and used these

[a] A figure for adopted rules would look extremely similar, so we suppress its presentation here.

alternative measures in our empirical tests. We begin, in Table C2 below, by measuring the midpoint between *Difference in Salary* in time t and *Difference in Salary* in time $t-1$, under the assumption that this captures some combination between contemporaneous salary and the recruiting effects that salary can have, especially for executive branch officials. We see that our results are strongly confirmed by modeling this lagged relationship. We additionally lagged *Difference in Salary* by a whole year and included it as our main theoretically relevant regressor. Table C3 shows that these effects, while not as large as with the midpoint strategy, are statistically significant and consistent with our overall argument.

Table C4 shows that our results are robust to measuring the balance of expertise by taking the natural log of *Difference in Salary*, which may more accurately capture the true functional form of the relationship between interbranch balance and rulemaking activity. These results confirm what we have presented in text, yet we prefer the untransformed variable due to its ease of interpretation.

For Table C5, we alternatively measured executive compensation excluding governors and their elected cabinets (the lieutenant governor, secretary of state, attorney general, and treasurer). These positions earn the highest salaries and we were concerned that their inclusion could bias the *Difference in Salary* measure towards the executive. Theoretically, we prefer the measure including the governor and cabinet, as they direct the bureaucracy, and their salaries are tied to the expertise of their agencies. It is thus heartening to see that our results are robust to their exclusion (see Table C5).

In Table C6, we estimate the baseline models from Table 1, while additionally controlling for the possibility that rulemaking volume is subject to across-state dependencies, or "diffusion" (e.g., Walker 1969, Berry and Berry 1990, Shipan and Volden 2008, Boushey 2010, Hertel-Fernandez 2014). To control for the possibility of geographical diffusion, the most common type tested in the literature, we create measures of the mean number of adopted and proposed rules for each state's contiguous neighbors in each year and include this "spatial lag" as a regressor. Table C6 confirms that our results are robust to the inclusion of this variable and indicates that spatial diffusion of rulemaking volume is likely not present in our data.

Table C7 replicates the main analyses using alternative dependent variables. In particular, we were concerned that, in using the full sample of rules, we were not distinguishing between purely administrative (and substantively trivial) rules and more substantively important rules. If, for some reason, the importance of rules changes along with the *Difference in Salary* measure, then our results would be biased estimates of the true policy effects of changing interbranch balance. Lexis Nexis does not code rules for their salience or economic impact. Thus, we use the rule information to code whether a rule affected multiple sections of a state's administrative code. Many purely administrative (non-substantive) rules are uncodified, and many others affect only a single aspect of the state code. Yet, in our data, approximately 64% of proposed or adopted rules would affect multiple sections of the code (see Table A1 for descriptive statistics regarding this variable). In table C7, we use counts of these more substantively significant rules as our dependent variables and show that our results hold for these policy-relevant data.

Finally, Table C8 is an extreme parsimonious model that shows that the relationships that we report throughout the paper do not depend on inclusion of control variables. This is strong evidence that the empirical relationship we estimate is, in fact, due to the theoretically

important independent variable that we measure for each dependent variable.

Table C1: OLS Models of Proposed and Adopted Rules in the States, 1990-2010 — Alternative Models of State Heterogeneity

	State Fixed Effects Only		Lagged Dependent Variable Only	
	(1)	(2)	(3)	(4)
	Proposed Rules	Adopted Rules	Proposed Rules	Adopted Rules
Difference in Salary (in thousands)	0.938*	0.894*	0.767*	0.747*
	(0.535)	(0.515)	(0.383)	(0.396)
Legislative Session Length	0.208*	0.189**	-0.045	-0.043
	(0.106)	(0.087)	(0.050)	(0.051)
Legislative Expenditures (per Legislator)	0.001	0.014	0.016*	0.021**
	(0.036)	(0.086)	(0.010)	(0.010)
Divided Government	16.103	12.573	-11.939	-13.861*
	(17.634)	(15.685)	(8.693)	(8.100)
Democratic Governor	34.301	24.500	6.113	7.090
	(29.971)	(21.745)	(6.421)	(7.122)
First Year of New Governor	-10.269	-19.635*	-14.283	-22.038**
	(8.965)	(10.214)	(9.928)	(9.319)
Number of Bills Enacted (in hundreds)	0.937	1.169	0.085	-1.262
	(1.956)	(1.756)	(1.726)	(1.944)
Leg. Out of Session	17.637	34.970*	15.180	20.428
	(20.503)	(18.163)	(21.957)	(22.182)
Size of State Workforce (Log)	-77.535	-63.562	-0.411	3.498
	(185.186)	(151.235)	(12.888)	(14.241)
State Population (Log)	-179.932	-56.843	5.563	4.896
	(251.083)	(152.519)	(10.354)	(11.364)
State Per Capita Income	-8.970	-5.499	0.554	0.695
	(6.815)	(4.398)	(0.959)	(0.921)
Proposed Rules (Lag)			0.903***	
			(0.014)	
Adopted Rules (Lag)				0.904***
				(0.017)
(Constant)	3830.677	1623.207	-215.351**	-225.406**
	(3729.038)	(2215.947)	(104.163)	(89.980)
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	No	No
Observations	894	894	861	861
R2	0.824	0.840	0.860	0.863
rMSE	109.817	104.718	96.164	93.988
Clusters	48	48	48	48

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$

Note: Entries are linear regression coefficient estimates and standard errors, clustered by state. The dependent variables in models (1) and (2) is the total number of administrative rules proposed in each state-year, the dependent variable in models (3) and (4) is the total number of administrative rules adopted in each state-year. State and year fixed effects are included where indicated but not reported. Nebraska and Texas are excluded from all models. Legislative and executive salaries adjusted for inflation (to year 2000 dollars) before creating the *Difference in Salary* measure.

Table C2. OLS Models of Proposed and Adopted Rules in the States, 1990-2010 — Lagged Difference in Salary Specification 1

	(1) Proposed Rules	(2) Adopted Rules
Difference in Salary (in thousands, midpoint between 2 years)	1.254**	1.175**
	(0.557)	(0.473)
Legislative Session Length	0.055	0.061
	(0.046)	(0.042)
Legislative Expenditures (per Legislator)	0.000	0.027
	(0.033)	(0.028)
Divided Government	2.423	1.755
	(9.076)	(8.351)
Democratic Governor	8.590	5.593
	(12.337)	(9.626)
First Year of New Governor	-11.724	-19.807**
	(8.505)	(8.116)
Number of Bills Enacted (in hundreds)	1.924	0.551
	(1.901)	(2.246)
Leg. Out of Session	31.230	39.547
	(18.665)	(27.255)
Size of State Workforce (Log)	-21.857	-62.763
	(109.853)	(88.134)
State Population (Log)	-226.884	-116.778
	(222.022)	(144.333)
State Per Capita Income	-2.808	-1.863
	(3.499)	(2.417)
Proposed Rules (Lag)	0.538***	
	(0.042)	
Adopted Rules (Lag)		0.489***
		(0.056)
(Constant)	3764.774	2525.151
	(3203.809)	(2167.138)
Year FE	Yes	Yes
State FE	Yes	Yes
Observations	861	861
R2	0.894	0.905
rMSE	86.062	80.793
Clusters	48	48

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$

Note: Entries are linear regression coefficient estimates and standard errors, clustered by state. The dependent variable in model (1) is the total number of administrative rules proposed in each state-year, the dependent variable in model (2) is the total number of administrative rules adopted in each state-year. State and year fixed effects are included where indicated but not reported. Nebraska and Texas are excluded from all models. Legislative and executive salaries adjusted for inflation (to year 2000 dollars) before creating the *Difference in Salary* measure.

Table C3. OLS Models of Proposed and Adopted Rules in the States, 1990-2010 — Lagged Difference in Salary Specification 2

	(1) Proposed Rules	(2) Adopted Rules
Difference in Salary (in thousands, 1 year lag)	0.911*	0.907*
	(0.472)	(0.456)
Legislative Session Length	0.060	0.066
	(0.046)	(0.041)
Legislative Expenditures (per Legislator)	-0.000	0.027
	(0.033)	(0.028)
Divided Government	2.235	1.551
	(9.070)	(8.413)
Democratic Governor	8.581	5.624
	(12.441)	(9.766)
First Year of New Governor	-12.148	-20.201**
	(8.544)	(8.199)
Number of Bills Enacted (in hundreds)	1.981	0.603
	(1.888)	(2.256)
Leg. Out of Session	32.906*	41.201
	(19.056)	(27.283)
Size of State Workforce (Log)	-23.724	-64.262
	(110.226)	(88.238)
State Population (Log)	-223.985	-114.583
	(222.491)	(144.233)
State Per Capita Income	-2.567	-1.664
	(3.473)	(2.419)
Proposed Rules (Lag)	0.538***	
	(0.042)	
Adopted Rules (Lag)		0.489***
		(0.056)
(Constant)	3761.629	2523.582
	(3211.572)	(2168.801)
Year FE	Yes	Yes
State FE	Yes	Yes
Observations	861	861
R2	0.894	0.905
rMSE	86.198	80.888
Clusters	48	48

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$

Note: Entries are linear regression coefficient estimates and standard errors, clustered by state. The dependent variable in model (1) is the total number of administrative rules proposed in each state-year, the dependent variable in model (2) is the total number of administrative rules adopted in each state-year. State and year fixed effects are included where indicated but not reported. Nebraska and Texas are excluded from all models. Legislative and executive salaries adjusted for inflation (to year 2000 dollars) before creating the *Difference in Salary* measure.

Table C4. OLS Models of Proposed and Adopted Rules in the States, 1990-2010 — Logged Difference in Salary

	(1) Proposed Rules	(2) Adopted Rules
Logged Difference in Salary (in thousands)	28.658**	21.470*
	(12.084)	(11.656)
Legislative Session Length	0.046	0.053
	(0.045)	(0.040)
Legislative Expenditures (per Legislator)	0.000	0.033
	(0.036)	(0.032)
Divided Government	2.579	1.414
	(9.100)	(8.540)
Democratic Governor	7.822	4.664
	(12.503)	(9.759)
First Year of New Governor	-12.326	-19.622**
	(8.635)	(8.043)
Number of Bills Enacted (in hundreds)	1.698	0.060
	(1.982)	(2.342)
Leg. Out of Session	28.938	35.459
	(18.543)	(26.748)
Size of State Workforce (Log)	-26.683	-60.610
	(111.319)	(90.376)
State Population (Log)	-206.609	-112.397
	(223.268)	(148.948)
State Per Capita Income	-2.105	-1.374
	(3.430)	(2.528)
Proposed Rules (Lag)	0.541***	
	(0.042)	
Adopted Rules (Lag)		0.491***
		(0.056)
(Constant)	3539.188	2469.914
	(3233.386)	(2226.738)
Year FE	Yes	Yes
State FE	Yes	Yes
Observations	856	856
R2	0.893	0.904
rMSE	86.448	81.040
Clusters	48	48

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$

Note: Entries are linear regression coefficient estimates and standard errors, clustered by state. The dependent variable in model (1) is the total number of administrative rules proposed in each state-year, the dependent variable in model (2) is the total number of administrative rules adopted in each state-year. State and year fixed effects are included where indicated but not reported. Nebraska and Texas are excluded from all models. f

Table C5. OLS Models of Proposed and Adopted Rules in the States, 1990-2010 — Excluding the Governor and Cabinet from Salary Figures

	(1) Proposed Rules	(2) Adopted Rules
Difference in Salary (in thousands) – excl. Gov. and Cabinet	1.155**	0.943*
	(0.504)	(0.471)
Legislative Session Length	0.047	0.054
	(0.045)	(0.040)
Legislative Expenditures (per Legislator)	-0.001	0.025
	(0.033)	(0.029)
Divided Government	2.760	2.051
	(9.105)	(8.359)
Democratic Governor	8.281	5.250
	(12.329)	(9.575)
First Year of New Governor	-11.519	-19.694**
	(8.492)	(8.013)
Number of Bills Enacted (in hundreds)	1.931	0.564
	(1.920)	(2.255)
Leg. Out of Session	29.832	38.436
	(18.303)	(27.256)
Size of State Workforce (Log)	-23.630	-64.938
	(108.346)	(86.775)
State Population (Log)	-231.444	-119.062
	(225.500)	(146.484)
State Per Capita Income	-2.805	-1.774
	(3.525)	(2.441)
Proposed Rules (Lag)	0.538***	
	(0.041)	
Adopted Rules (Lag)		0.490***
		(0.056)
(Constant)	4076.819	2778.287
	(3216.868)	(2171.779)
Year FE	Yes	Yes
State FE	Yes	Yes
Observations	861	861
R2	0.894	0.905
rMSE	86.078	80.894
Clusters	48	48

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$

Note: Entries are linear regression coefficient estimates and standard errors, clustered by state. The dependent variable in model (1) is the total number of administrative rules proposed in each state-year, the dependent variable in model (2) is the total number of administrative rules adopted in each state-year. State and year fixed effects are included where indicated but not reported. Nebraska and Texas are excluded from all models. Legislative and executive salaries adjusted for inflation (to year 2000 dollars) before creating the *Difference in Salary* measure. The executive salary measure excludes the governor, lieutenant governor, secretary of state, attorney general, and treasurer.

Table C6. OLS Models of Proposed and Adopted Rules in the States, 1990-2010 — Across-State Diffusion Models

	(1) Proposed Rules	(2) Adopted Rules
Difference in Salary (in thousands)	1.172**	1.026**
	(0.473)	(0.417)
Mean Proposed Rules in Neighboring States	-0.081*	
	(0.044)	
Mean Adopted Rules in Neighboring States		-0.045
		(0.047)
Legislative Session Length	0.047	0.054
	(0.044)	(0.040)
Legislative Expenditures (per Legislator)	0.001	0.025
	(0.033)	(0.030)
Divided Government	2.634	2.179
	(8.948)	(8.242)
Democratic Governor	8.216	5.302
	(12.186)	(9.456)
First Year of New Governor	-11.183	-19.491**
	(8.509)	(8.014)
Number of Bills Enacted (in hundreds)	1.945	0.499
	(1.968)	(2.280)
Leg. Out of Session	29.469	37.583
	(17.893)	(27.308)
Size of State Workforce (Log)	-21.834	-64.481
	(108.232)	(87.883)
State Population (Log)	-242.831	-123.757
	(216.729)	(140.542)
State Per Capita Income	-2.896	-1.842
	(3.453)	(2.419)
Proposed Rules (Lag)	0.538***	
	(0.042)	
Adopted Rules (Lag)		0.489***
		(0.057)
(Constant)	4052.225	2681.601
	(3131.753)	(2117.331)
Year FE	Yes	Yes
State FE	Yes	Yes
Observations	861	861
R2	0.894	0.905
rMSE	85.977	80.853
Clusters	48	48

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$

Note: Entries are linear regression coefficient estimates and standard errors, clustered by state. The dependent variable in model (1) is the total number of administrative rules proposed in each state-year, the dependent variable in model (2) is the total number of administrative rules adopted in each state-year. State and year fixed effects are included where indicated but not reported. Nebraska and Texas are excluded from all models. Legislative and executive salaries adjusted for inflation (to year 2000 dollars) before creating the *Difference in Salary* measure.

Table C7. OLS Models of Proposed and Adopted Rules (Affecting Multiple Sections of State Code) in the States, 1990-2010

	(1) Proposed Rules	(2) Adopted Rules
Difference in Salary (in thousands)	0.829*	1.040***
	(0.454)	(0.380)
Legislative Session Length	0.031	0.011
	(0.041)	(0.031)
Legislative Expenditures (per Legislator)	0.009	0.037*
	(0.037)	(0.019)
Divided Government	-1.260	1.472
	(8.334)	(8.073)
Democratic Governor	13.068	9.144
	(11.408)	(8.939)
First Year of New Governor	-8.881	-12.100
	(7.252)	(7.491)
Number of Bills Enacted (in hundreds)	-0.489	-2.070
	(1.574)	(1.793)
Leg. Out of Session	4.611	13.411
	(17.148)	(21.647)
Size of State Workforce (Log)	26.002	-15.824
	(95.815)	(77.355)
State Population (Log)	-310.157	-231.099
	(213.015)	(147.699)
State Per Capita Income	-1.351	0.111
	(3.406)	(2.868)
Proposed Rules (affecting multiple sections of state code) (Lag)	0.549***	
	(0.032)	
Adopted Rules (affecting multiple sections of state code) (Lag)		0.530***
		(0.065)
(Constant)	4525.843	3710.199
	(3140.610)	(2423.193)
Year FE	Yes	Yes
State FE	Yes	Yes
Observations	861	861
R2	0.915	0.911
rMSE	75.720	72.124
Clusters	48	48

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$

Note: Entries are linear regression coefficient estimates and standard errors, clustered by state. The dependent variable in model (1) is the total number of administrative rules proposed in each state-year that would affect multiple sections of the state code, the dependent variable in model (2) is the total number of administrative rules adopted in each state-year that affected the state code. State and year fixed effects are included where indicated but not reported. Nebraska and Texas are excluded from all models. Legislative and executive salaries adjusted for inflation (to year 2000 dollars) before creating the *Difference in Salary* measure.

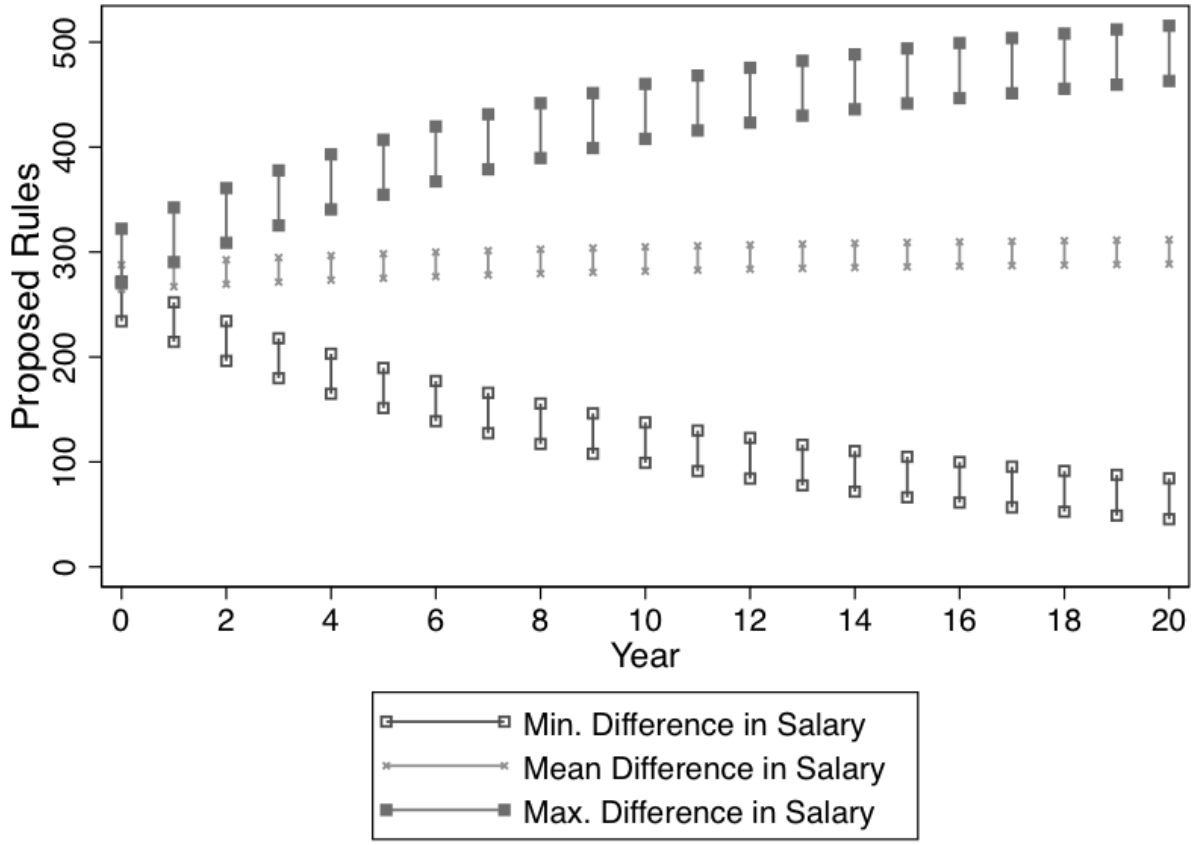
Table C8. OLS Models of Proposed and Adopted Rules in the States, 1990-2010 — Parsimonious Models

	(1) Proposed Rules	(2) Adopted Rules
Difference in Salary (in thousands)	1.181**	1.029**
	(0.468)	(0.426)
Proposed Rules (Lag)	0.548***	
	(0.048)	
Adopted Rules (Lag)		0.493***
		(0.062)
(Constant)	226.484***	200.692***
	(31.096)	(28.382)
Year FE	Yes	Yes
State FE	Yes	Yes
Observations	882	882
R2	0.891	0.902
rMSE	86.145	80.808
Clusters	48	48

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$

Note: Entries are linear regression coefficient estimates and standard errors, clustered by state. The dependent variable in model (1) is the total number of administrative rules proposed in each state-year, the dependent variable in model (2) is the total number of administrative rules adopted in each state-year. State and year fixed effects are included where indicated but not reported. Nebraska and Texas are excluded from all models. Legislative and executive salaries adjusted for inflation (to year 2000 dollars) before creating the *Difference in Salary* measure.

Figure C1: Dynamic Simulation of the Effects of Difference in Salary on Proposed Rules



Appendix D: Term Limits and Synthetic Case Controls

To begin, we determined a set of reasonable covariates on which to match. Since our outcome variable is the same as above, we use the covariates included in Table 1, adding *Percent Population White*, *Percent Population High School Graduate*, and *State Unemployment (Log)*. We use values of these covariates to match the pre-treatment values for each term limits state. The goal is to create a synthetic state that is exactly like (on the observable covariates) the pre-treatment term limits state in question, with the exception being that the synthetic state counterfactually failed to adopt term limits. We did this for each term limits state for which we have complete data on all covariates, alternating between considering term limit adoption and term limit impact as the treatment, and for each of the two outcome variables: proposed and adopted rulemaking.[b]

The output of each state's synthetic matching can be summarized with estimates of the mean difference between the true trend in rulemaking and the trend in the synthetic control. Statistical significance can be gleaned from placebo tests, whereby we consider each state used as a control in the creation of the synthetic state alternatively as the treated unit. We loop over each control and compare the estimate for the truly treated term limits state to these controls, as in the process of randomization tests (e.g., Hansen and Bowers 2009). As in Keele, Malhotra, and McCubbins (2013), we do this for each term limits state to find that there is a noticeable and, we argue, significant effect of term limits for Arizona and for Ohio. Both of these states had term limits take effect in the 2000 legislative term and we count this as the year of treatment. The standard way to present results from synthetic matching is graphically, so we present Figure D1 to demonstrate the effect for Arizona.

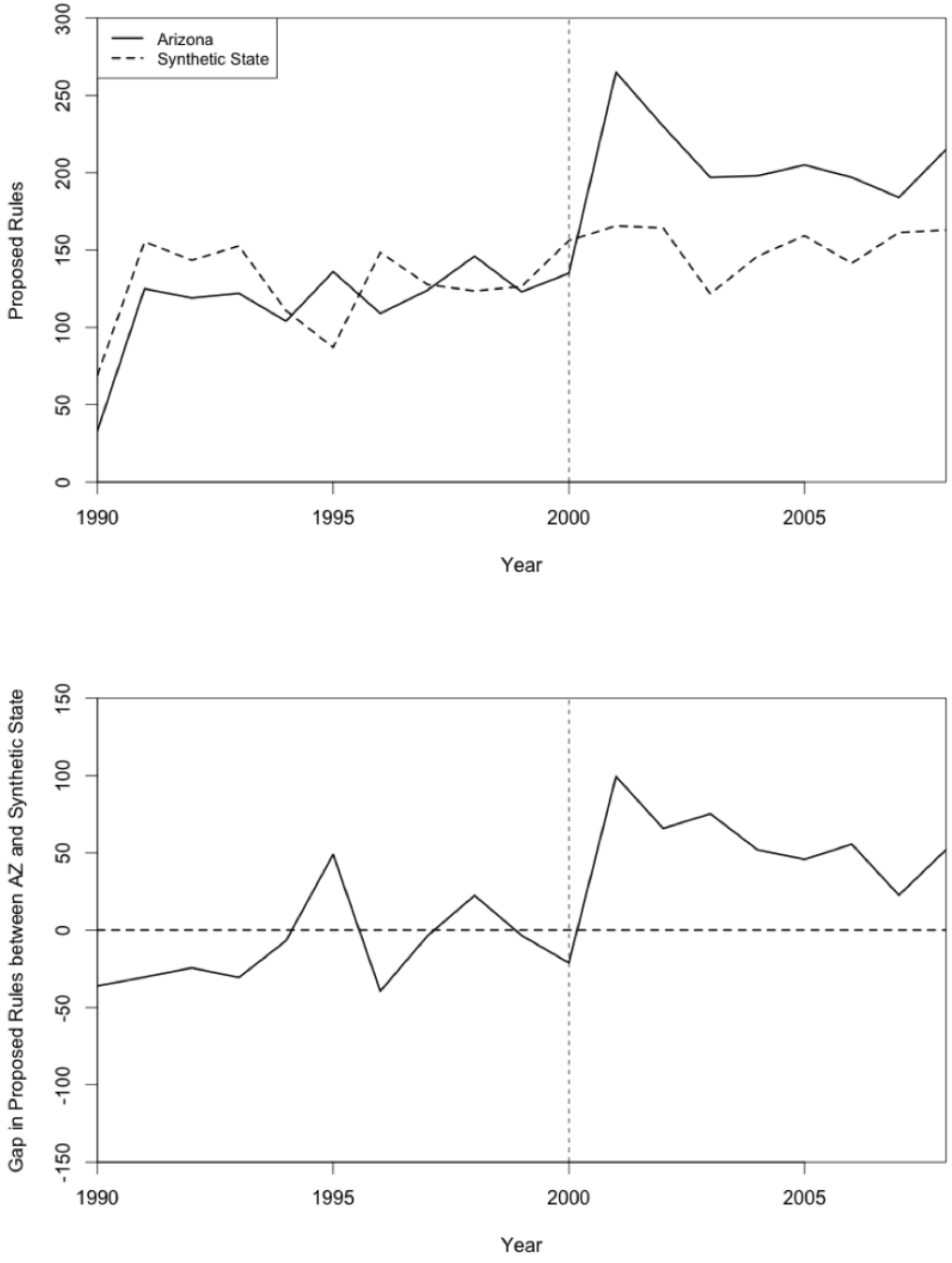
The top panel of Figure D1 presents a "path" plot of the trends in rulemaking for Arizona and its synthetic control — the solid line shows the actual amount of proposed rulemaking in Arizona over the time series and the dotted line shows the imputed rulemaking for the synthetic control. The ideal evidence for an effect of term limits would be to have indistinguishable trend lines in the period prior to the treatment, and divergent trends in the post-treatment period. This is just what the Arizona path plot demonstrates. Pre-treatment, the trend lines generally track each other well, and alternate which unit's rulemaking volume is larger and smaller throughout the pre-treatment period. In stark contrast, the observed post-treatment trend in Arizona increases, while the synthetic trend stays flat, indicating that there was no secular increase in rulemaking for non-term limit states like Arizona during this post-2000 period. The bottom panel of Figure D1 simply shows the gap between the two more clearly and accentuates the positive impact term limits had on rulemaking volume in Arizona relative to its synthetic control. Particularly noticeable in this figure is that post-treatment, rulemaking in Arizona is always greater than its synthetic control by an average of over 50 proposed rules per year.

Figure D2 reflects analogous path and gap plots for Ohio. Noticeably, the pre-treatment congruence of trend lines is even more pronounced here, In addition, the average post-treatment gap in rules is nearly four times as large as it was for Arizona. Although the root

[b]The program we use to implement synthetic matching, **Synth** (available for **R**, **MATLAB**, and **Stata** — `http://www.stanford.edu/~jhain/synthpage.html`), requires that the input dataset consist of a balanced panel, so we limit our analysis to the following term limits states: Arizona, California, Colorado, Florida, Louisiana, Maine, Michigan, Missouri, Ohio, Oklahoma, and South Dakota.

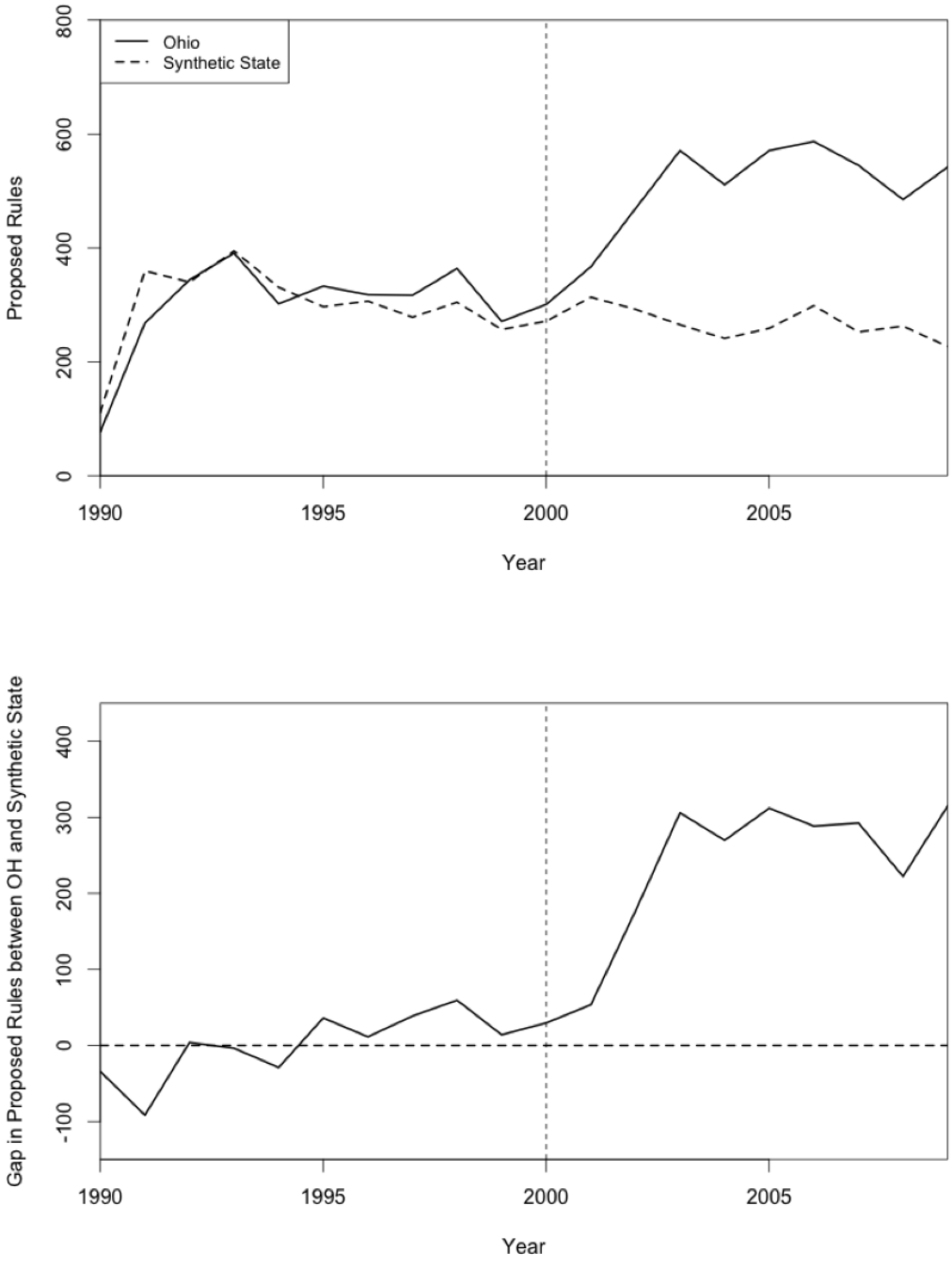
mean squared prediction error for Ohio indicates that its synthetic match is not as precise as Arizona's, the substantive effects outweigh the potential uncertainty about model fit and Ohio performs strongly placebo tests. Notably, these two are the only states for which we found a significant impact of term limits. We also present Figure D3 as an example of a term limits state, Colorado, which exhibits no evidence of increased rulemaking in the wake of the reform. Importantly, this is the modal relationship among term limits states with respect to rulemaking.

Figure D1: Term Limits and Agency Rulemaking: Arizona Synthetic Case Control Plots



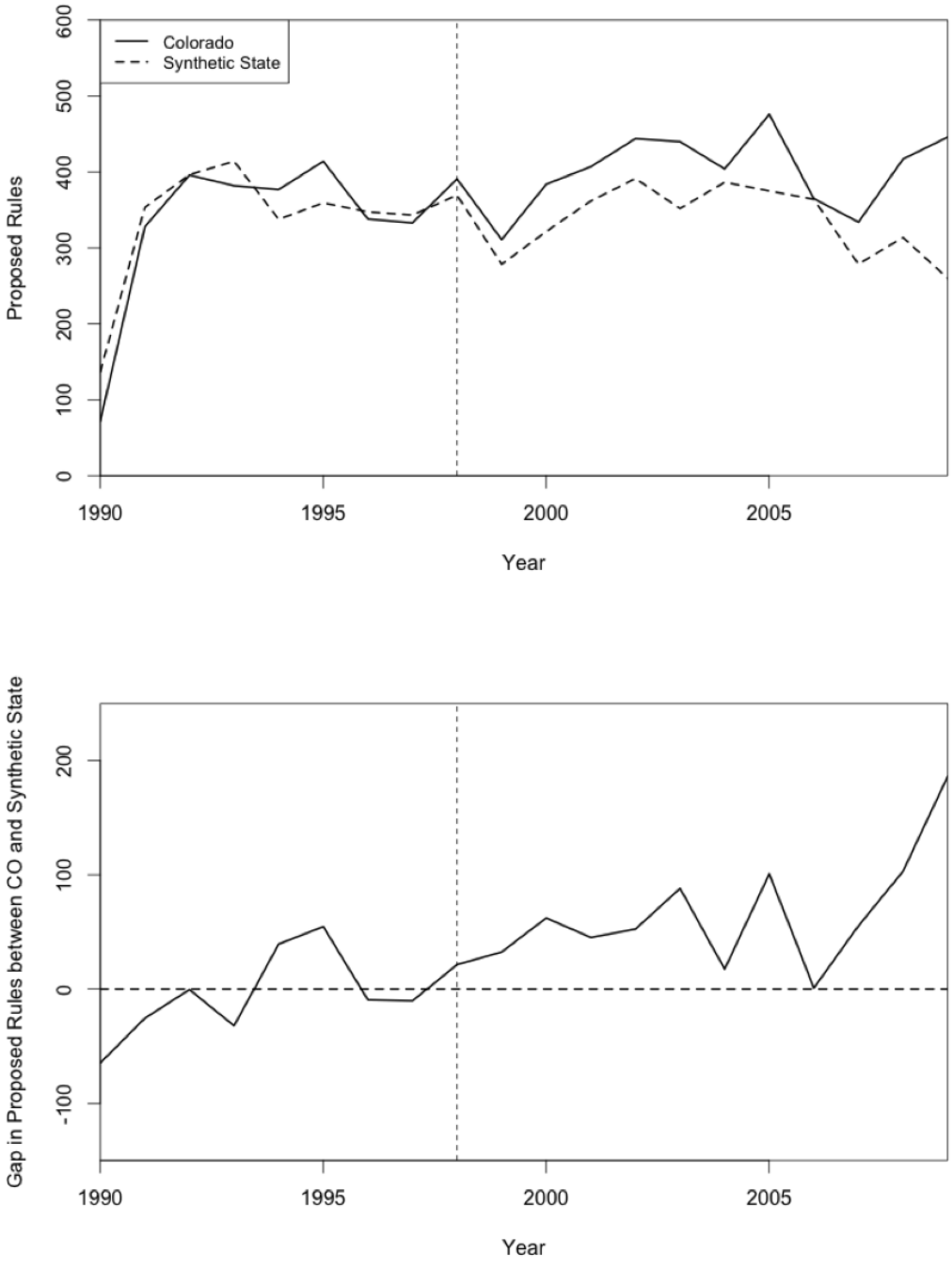
Note: Dashed vertical line indicates date term limits took effect in Arizona legislature

Figure D2: Term Limits and Agency Rulemaking: Ohio Synthetic Case Control Plots



Note: Dashed vertical line indicates date term limits took effect in Ohio legislature

Figure D3: Term Limits and Agency Rulemaking: Colorado Synthetic Case Control Plots



Note: Dashed vertical line indicates date term limits took effect in Colorado legislature