Supporting Information

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The Politics of Government Outsourcing in the American States

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A Construction of the Outsourcing Measure

The outsourcing measure follows Minicucci and Donahue's (2004) approach of using publicly available government data to estimate aggregate levels of outsourcing of government services. As those authors explain "the basic logic of our method is to chip away other components of government consumption, as a sculptor defines the statue by removing the extraneous marble" (Minicucci and Donahue, 2004, 494). While their approach estimates an annual aggregate level of outsourcing for all states, I refine their method to calculate annual aggregate levels of outsourcing for individual states.

The marble "base" in my approach is state i's expenditures in year t, which is then refined to exclude all spending not directed toward services. Service outsourcing is thus defined as a proportion, which is determined by the following equation:

$$\text{Service Outsourcing}_{it} = \frac{\text{Operating Spending}_{it} - \text{Compensation}_{it} - \text{Goods}_{it}}{\text{Operating Spending}_{it}} \qquad \text{(A1)}$$

All dollar amounts are reported in real 1992 dollars. Minicucci and Donahue (2004) suggest that an alternate calculation can be made wherein a state's share of Medicaid spending can be deducted from the from the numerator in Equation A1. Unfortunately, data on individual state shares of Medicaid spending are not available for the full span of the time series included in the paper.[1]

Equation A1 draws on the following three terms:

Operating Spending: State spending in year t is drawn from the Census of Government

[1]While the Centers for Medicare and Medicaid Services (CMS) do disaggregate some Medicaid spending to the state level, these data were not collected in a consistent manner across the entire length of this study and therefore cannot be used for the type of the analysis undertaken here (author correspondence with CMS personnel).

Finances (GF), an annual accounting of state and local governments revenue and expenditures. Annual expenditures for state government i are drawn from the "current expenditures" line item in the GF data. This line item includes spending relating to operating expenses or, more specifically, "direct [expenditures] for compensation of own officers and employees and for supplies, materials, operating leases, and contractual services except amounts for capital outlay." It does not include spending for debt payments, interest, capital outlays, etc. Because the GF was not conducted in 2001 or 2003, I average the years before and after to get values for these years.

Following the recommendation of Minicucci and Donahue (2004), I take the additional step of subtracting state expenditures for liquor stores and utilities, since not all states spend public monies to maintain these entities. Expenditures for both items are included annually as line items in the GF.

Compensation: The GF series reports wage and salary data for each state government. To get a measure of total compensation, which includes employee benefits in addition to employee wage and salary, spending on employee benefits must be calculated. The annual benefit rate is calculated as:

$$\text{Compensation}_{it} = \text{Wages \& salaries} \times (1 + \text{Benefit rate}) \tag{A2}$$

Wages & salaries: total dollars spent on wages and salaries is reported annually in the GF series for each state.

Benefit rate: Only certain employee benefits are reported in the GF series; as Minicucci and Donahue (2004, 495) explain, the GF "includes all salaries, wages, fees, overtime, premium and night differentials, commissions, bonuses, or awards paid to employees before withholdings but excludes employer share of fringe benefits like retirement, Social Security, health and life insurance." To incorporate this spending

into the estimate, I first determine the average hourly wage for state government employees using reports from the Bureau of Labor Statistics (BLS).[2] Using these same BLS data sources, I then establish the per hour cost of paid leave benefits for government employees, the per hour cost of supplemental pay benefits for government employees, and the per hour cost of other pay benefits (e.g., insurance, retirement, social insurance, and miscellaneous benefits). The benefit rate is thus calculated:

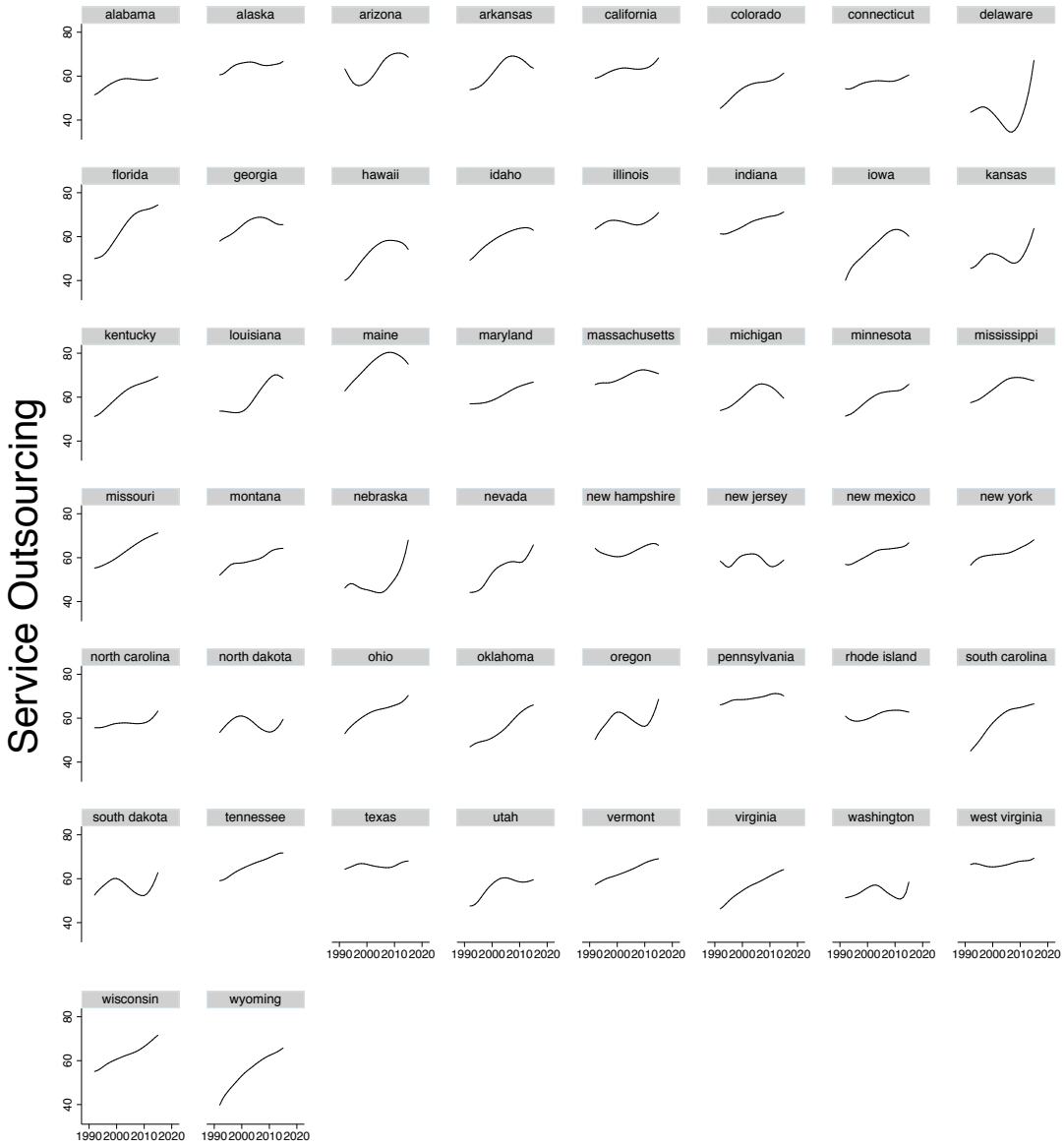
$$\text{Benefit Rate} = \frac{\text{Hourly wage} + \text{Hourly paid leave} + \text{Hourly supp. benefits}}{\text{Hourly wage} + \text{Hourly paid leave} + \text{Hourly supp. benefits} + \text{Hourly other benefits}} - 1 \tag{A3}$$

Consumption goods rate: Consumption goods include state spending on durable and nondurable goods. This figure is calculated based on the Department of Commerce's annual National Income and Product Accounts (NIPA) data. These data are available only in an aggregate figure for all state governments, and is not available on a state-by-state basis. Therefore, I calculate the rate of the aggregate spending for all states, using durable and nondurable goods spending (see NIPA Table 3.10.5) over all spending (State expenditures) and apply the rate to all states.

[2]Specifically, for years before 2001, I use Table 2 of the "Employer Costs for Employee Compensation Historical Listing (Annual), 1986-2001" (`https://www.bls.gov/ncs/ect/sp/ecechist.pdf`). For 2002-2003, I use Table 2 of the "Employer Costs for Employee Compensation Historical Listing (Quarterly), 2002-2003," (`https://www.bls.gov/ncs/ect/sp/ececqrt.pdf`). For 2004 onward, I use Table 5 of the "Employer Costs for Employee Compensation Historical Listing, National Compensation Survey, March 2004-March 2017" (`https://www.bls.gov/ncs/ect/sp/ececqrtn.pdf`).

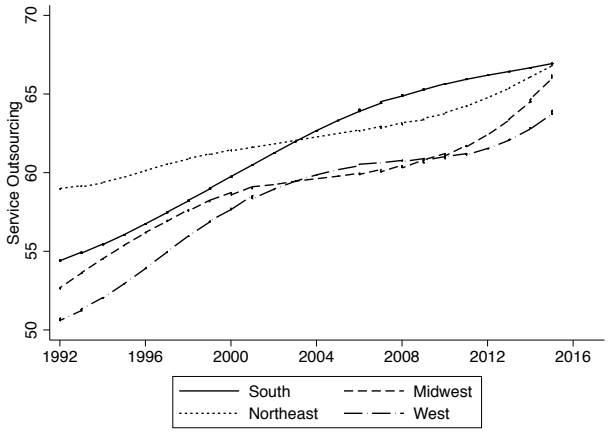
Figure A-1 below shows each state's individual outsourcing trend for the years under study.

Figure A-1: Service Outsourcing by State, 1992–2015



Note: Figures show lowess curves of service outsourcing for each state in the dataset.

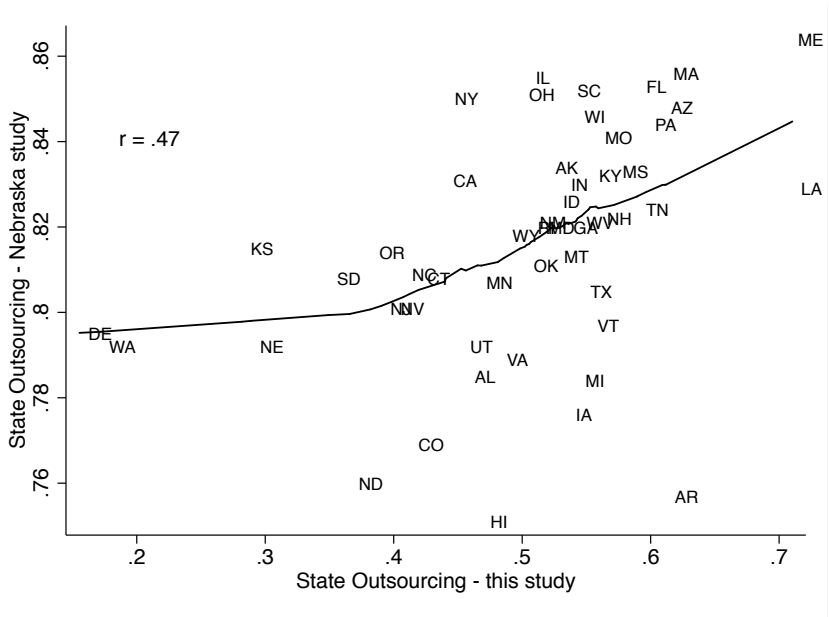
Figure A-2: Service Outsourcing by Region



Note: Lines indicate lowess curves of outsourcing trends in each region.

The regions have broadly followed the same pattern of increasing outsourcing, with some slight variations; see Figure A-2 in the SI for outsourcing trends by region.. States in the Northeast were early adopters of outsourcing, while western states were late adopters and have lagged the other regions in more recent years. Notably, the South—which is often given special consideration in American politics and might be considered ripe for outsourcing given its conservative ties—does not stand out in an appreciable way.

Figure A-3: Relationship between my Outsourcing Measure and Nebraska Study



Note: Fitted line indicates a loess curve. The alternate measure is from a study of state government service outsourcing commissioned by the State of Nebraska, see (Goss and Morse, 2012).

In 2012, the State of Nebraska commissioned a comparative study to examine state outsourcing of government services (Goss and Morse, 2012). The measure employed in that study relies on a similar formula to the one employed here although it is based on total agency expenditures (as opposed to the operating expenses used here) and focuses only on salary (excluding benefits and payments to goods). Nevertheless, as shown in Figure A-3, the two measures correlate reasonably well.

B Robustness Checks for Service Outsourcing Models

Table B-1: Effects of Union Strength on Outsourcing Decisions (Full Models)

	(1)	(2)	(3)	(4)	(5)	(6)
Union Coverage	-0.099***	-0.099***				
	(0.036)	(0.037)				
Union Density			-0.071*	-0.073*		
			(0.035)	(0.036)		
Labor Contributions					-0.001***	-0.001
					(0.0003)	(0.0002)
Unemployment Rate		1.249		1.880		1.565
		(12.122)		(12.284)		(14.096)
Operating Spending		0.174***		0.175***		0.184***
		(0.076)		(0.076)		(0.080)
Population		-0.005		-0.005		-0.007
		(0.004)		(0.004)		(0.004)
Divided Government		0.164		0.178		0.120
		(0.315)		(0.313)		(0.366)
GOP Governor		0.079		0.115		0.133
		(0.276)		(0.280)		(0.316)
Outsourcing t-1	0.750***	0.748***	0.753***	0.751***	0.746***	0.743***
	(0.044)	(0.046)	(0.044)	(0.046)	(0.046)	(0.049)
Outsourcing t-2	-0.085	-0.081	-0.085	-0.081	-0.110***	-0.105***
	(0.043)	(0.043)	(0.044)	(0.044)	(0.047)	(0.047)
Observations	1,100	1,100	1,100	1,100	966	966
R-squared	0.814	0.817	0.813	0.817	0.799	0.803
State & Year FE	YES	YES	YES	YES	YES	YES
States	50	50	50	50	50	50

Note: *** p<0.001, ** p<0.01, * p<0.05. Robust standard errors clustered at the state level are in parentheses. FE = fixed effect.

Table B-2: Alternate Specifications of Models in Table 1

	(1)	(2)	(3)	(4)
Union Coverage	-0.223***		-0.512***	
	(0.071)		(0.081)	
Union Density		-0.213***		-0.389***
		(0.070)		(0.086)
Observations	1,150	1,150	1,150	1,150
R-squared	0.641	0.639	0.539	0.511
Outsourcing t-1	NO	NO	NO	NO
Outsourcing t-1	NO	NO	NO	NO
State FE	YES	YES	YES	YES
Year FE	YES	YES	NO	NO
States	50	50	50	50

Note: *** p<0.001, ** p<0.01, * p<0.05. Robust standard errors clustered at the state level are in parentheses. FE = fixed effect.

Table B-3: Outsourcing Decisions in the South and Non-South

	(1) Non-South	(2) South	(3) Non-South	(4) South	(5) Non-South	(6) South	(7) Non-South	(8) South
Union Coverage	-0.117**	-0.028					-0.152**	-0.087
	(0.043)	(0.057)					(0.066)	(0.100)
Union Density			-0.093**	0.046				
			(0.040)	(0.068)				
Labor Contributions					-0.001**	-0.001		
					(0.000)	(0.001)		
Union Ban							-4.244	
							(2.709)	
Union Ban × Union Coverage							0.095*	0.217
							(0.047)	(0.139)
Outsourcing t-1	0.760***	0.673***	0.762***	0.679***	0.763***	0.645***	0.735***	0.676***
	(0.048)	(0.079)	(0.049)	(0.073)	(0.051)	(0.064)	(0.061)	(0.065)
Outsourcing t-2	-0.122***	0.089	-0.124***	0.091	-0.144***	0.050	-0.101	0.122*
	(0.043)	(0.074)	(0.044)	(0.075)	(0.047)	(0.082)	(0.062)	(0.068)
Observations	814	286	814	286	721	245	629	221
R-squared	0.809	0.849	0.808	0.849	0.795	0.821	0.806	0.849
State & Year FE	YES	YES	YES	YES	YES	YES	YES	YES
States	37	13	37	13	37	13	37	13

Note: *** p<0.001, ** p<0.01, * p<0.05. Robust standard errors clustered at the state level are in parentheses. FE = fixed effect.

Table B-4: Conditional Effects of Governor Party on State Outsourcing Decisions

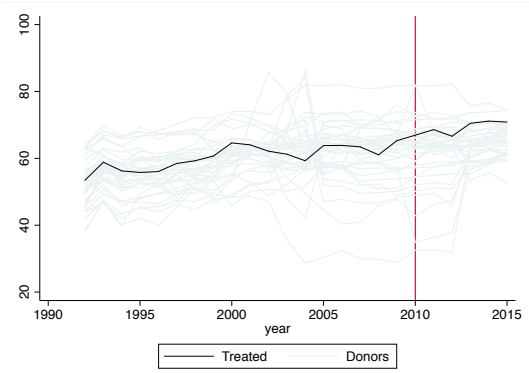
	(1)	(2)	(3)	(4)	(5)
GOP Governor	-0.103	-0.006	1.342	-0.531	
	(0.678)	(0.619)	(0.829)	(0.720)	
Union Coverage	-0.100***		-0.101*	-0.128**	0.057
	(0.036)		(0.052)	(0.055)	(0.036)
GOP Governor × Union Coverage	0.001				
	(0.014)				
Union Density		-0.071*			
		(0.036)			
GOP Governor × Union Density		-0.0004			
		(0.014)			
Debt %age GSP			0.107		
			(0.136)		
GOP Governor × Debt %age GSP			-0.082		
			(0.061)		
Unemployment per capita			1.879		
			(1.695)		
GOP Governor × Unemployment per capita			-3.082*		
			(1.697)		
Income per capita			10.174		
			(10.837)		
GOP Governor × Income per capita			-19.758*		
			(11.626)		
Budget Surplus			3.39e-07		
			(2.11e-07)		
GOP Governor × Budget Surplus			-2.42e-07		
			(2.02e-07)		
Fraction of ARC paid				0.143	
				(0.175)	
GOP Governor × Fraction of ARC paid				0.073	
				(0.135)	
GOP Governor × Period 1					0.257
					(0.488)
GOP Governor × Period 2					0.167
					(0.521)
GOP Governor × Period 3					-0.138
					(0.444)
Observations	1,100	1,100	850	490	850
R-squared	0.820	0.819	0.815	0.814	0.821
Outsourcing t-1	YES	YES	YES	YES	YES
Outsourcing t-2	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES
State & Year FE	YES	YES	YES	YES	YES
States	50	50	50	49	50

Note: *** p<0.001, ** p<0.01, * p<0.05. Robust standard errors clustered at the state level are in parentheses. FE = fixed effect.

C Synthetic Control Analysis of Wisconsin

Wisconsin eliminated collective bargaining protections for public employees in June of 2011. As Figure C-1 shows, Wisconsin was a relatively average state in terms of outsourcing levels prior to the 2011 law, but became more extreme after the law's passage.

Figure C-1: Wisconsin & Peer State Service Outsourcing Levels



Note: The dark line shows Wisconsin's observed outsourcing levels. Lighter lines show outsourcing levels for the 33 states in the donor pool that did not rescind their collective bargaining laws. These are Alaska, California, Delaware, Florida, Hawaii, Idaho, Illinois, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Minnesota, Missouri, Montana, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Dakota, Utah, Vermont, Washington, and West Virginia.

Table C-1: Unit Weights for Wisconsin SCM Study

State	*Weight*
Pennsylvania	.311
Hawaii	.285
New Hampshire	.213
Massachusetts	.063
Utah	.047
Minnesota	.043
South Dakota	.032
Iowa	.005

Note: The synthetic control unit is the weighted average of pretreatment covariates using data from states in the donor pool. The table shows the states and weights used for constructing the synthetic control unit. Among the donor pool of 33 states, the method draws on 8 the states with the weights shown in the table. The remaining donor states are assigned a weight of zero.

The synthetic control method applied in the main body of the paper creates a synthetic version of Wisconsin by created a weighted average of units in the donor pool. Drawing on the independent variables from Model 2 in Table B-1, the method draws on a weighted combination of the eight states shown in Table C-1. Table C-2 shows the balance between the covariates in the treated states and their synthetic counterfactuals. While the match is close between the two columns for most variables, it is clear that the donor states have fewer cases of divided government in particular. However, the averages of the synthetic control unit are more closely related to Wisconsin's observed averages of than those of the donor pool means and, additionally, as Figure 4 in the paper shows, the method is able to closely approximate the two trend lines in the pre-treatment period.

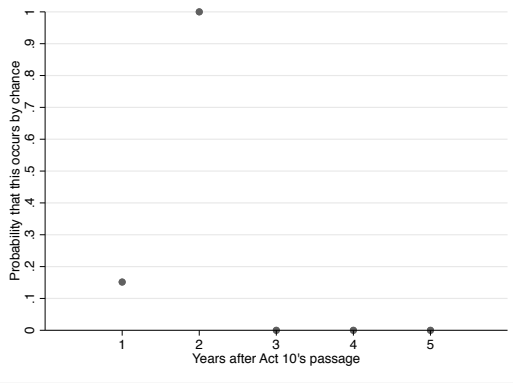
Table C-2: Predictor Balance for Wisconsin Collective Bargaining Study

	Wisconsin	*Synthetic Wisconsin*	*Donor Pool Average*
Union Coverage	56.40	54.05	43.19
UnemploymentRate	0.05	0.05	0.06
Population (ln)	15.50	14.91	14.95
Divided Government	0.79	0.47	0.51
GOP Governor	0.58	0.49	0.51
RMSPE		0.979	

Note: The table shows the mean values of the covariates and the outcome variable (*Service Outsourcing*). The value of each predictor is averaged over the pretreatment period. The root mean squared prediction error (RMSPE) is based on differences between the treatment and synthetic control units in the pre-treatment period.

Figure C-2 shows that the difference between synthetic Wisconsin and real Wisconsin (as shown in Figure 4 in the main text) were initially not statistically different, but after the third year these differences become distinguishable.

Figure C-2: Probability of SCM Differences Occurring by Chance

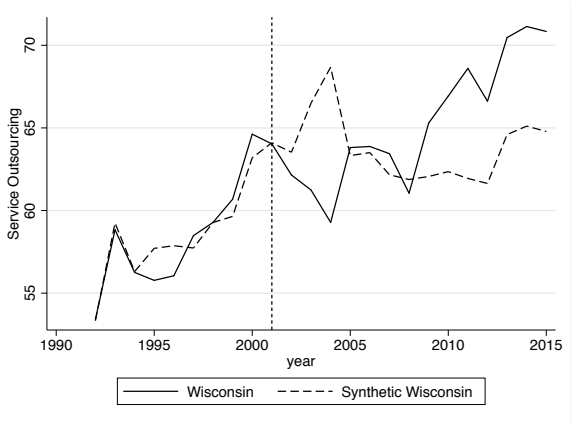


Note: The panel shows the probability that the differences between synthetic and real Wisconsin would have been observed by chance for each year in the post-treatment period.

Following Abadie, Diamond and Hainmueller (2015), I assess the robustness of the SCM by conducting an in-time placebo test. Specifically, I (arbitrarily) assume that Wisconsin eliminated collective bargaining at an earlier point in time—in 2002. If making this assumption and conducting the subsequent analyses yields equally plausible results to those presented in the paper, then we should be less confident that the 2011 break was a definitive one. The results, shown in Figure C-3, do not show a clear distinction between

Wisconsin and Synthetic Wisconsin, which gives additional confidence to the 2011 results.

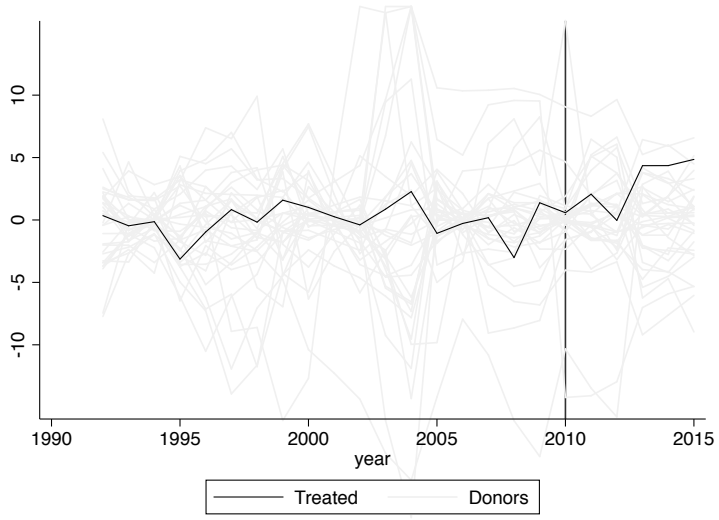
Figure C-3: In-time Placebo Test of Wisconsin's Collective Bargaining Law



Finally, I conduct an in-space placebo test by applying the synthetic control method to every control unit in the sample and observing the gaps between each state and its synthetic control.[3] The results are plotted in Figure C-4, which shows that before the intervention there is little difference between Wisconsin and its synthetic control (i.e., it is comparable with the states in the donor pool); however, after the collective bargaining intervention, Wisconsin considerably differentiates itself from the other states with large gaps with its synthetic control. Examining the distribution, it is clear that reassigning the removal of collective bargaining to other states is very unlikely to result in as large a gap as that obtained for Wisconsin. All told these robustness checks serve to enhance our confidence in the results presented in the paper.

[3]This analysis is conducted using the `synth_runner` package for Stata (Galiani and Quistorff, 2017).

Figure C-4: Wisconsin: Differences Between Each State and its Synthetic Control



Note: This analysis iteratively assumes that that each state in the donor pool received the treatment, using the remaining states as the untreated units. Lines show the difference between a treatment state and its synthetic control. The dark line indicates the gap between Wisconsin and its synthetic control. Lighter lines indicate the placebo results for states in the donor pool. The red vertical line indicates the point of intervention.

Finally, I consider a test proposed by Abadie, Diamond and Hainmueller (2015) which compares the root mean squared prediction error (RMSPE) pre- and post- intervention in Wisconsin and its comparison states. The treatment in Wisconsin should result in a relatively large pre-/ post- RMSPE ratio compared to placebo states; this is indeed the case as Wisconsin's ratio is double that of the placebos. The probability of obtaining the ratio as large as Wisconsin's is $\frac{1}{33} = .03$.

References

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