Article

Finally, Nebraska: A Synthetic Control Analysis of Legislative Structure

State Politics & Policy Quarterly
2020, Vol. 20(1) 3–22
© The Author(s) 2019
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/1532440019868818
journals.sagepub.com/home/spa
SAGE

William B. Hankins[1]

Abstract

I estimate the impact of Nebraska's 1937 switch from a bicameral to a unicameral legislature on state-level government expenditures. Using the synthetic control method I create a counterfactual Nebraska from a weighted average of other potential control states and compare spending in this "synthetic Nebraska" to spending in the real Nebraska. Relative to the synthetic control, Nebraska experiences a sharp decrease in expenditures per capita immediately following the switch to a unicameral legislature; however, the difference appears to diminish over time. Placebo tests show that if the change in Nebraska's legislative structure were randomly assigned among the sample of states, and legislative structure had no real impact on spending, the likelihood of obtaining a treatment-effect estimate as large as Nebraska's would be 0.0213. While the initial drop in expenditures per capita lends support to the theory that bicameralism, by requiring more veto players, is associated with higher levels of government spending, the fact that the difference between Nebraska and synthetic Nebraska diminishes suggests that legislators are able to circumvent this constraint.

Keywords

bicameralism, Nebraska, synthetic control method, unicameralism

Introduction

Despite well-known arguments supporting the merits of either bicameral or unicameral legislative structure, little is known about how legislative structure affects fiscal policy. However, this question has been ignored not because it lacks importance, but

[1]Jacksonville State University, Jacksonville, AL, USA

Corresponding Author:
William B. Hankins, Department of Finance, Economics & Accounting, Jacksonville State University, SBI Complex, 115 College Street SW, Jacksonville, AL 36265, USA.
Email: whankins@jsu.edu

https://doi.org/10.1177/1532440019868818 Published online by Cambridge University Press

rather because it is difficult to answer. Although Georgia, Pennsylvania, and Vermont were initially governed by unicameral legislatures, by 1830 all U.S. state legislatures were bicameral.[1] Unfortunately, the dearth of reliable data for that time period makes it impossible to estimate how those transitions impacted fiscal policy. Nebraska's 1937 switch from a bicameral to a unicameral legislature offers a more promising case study. However, the limitations of traditional regression techniques make this difficult to achieve. Instead, I use the synthetic control method, pioneered by Abadie and Gardeazabal (2003) and subsequently improved upon by Abadie, Diamond, and Hainmueller (2010, 2015), to examine how the change from a bicameral to a unicameral legislature affected state-level government spending in Nebraska. As the only state with a unicameral legislature, Nebraska is often excluded as an outlier. Thus, while the states have been a fruitful arena for examining the characteristics and consequences of bicameralism, it has not offered a way to test how bicameralism compares to other legislature designs. By implementing the synthetic control method, we can *finally* include Nebraska and use its unique—to the United States—organization to test the fiscal differences between bicameralism and unicameralism.

In this article I compare spending per capita in Nebraska over the period 1915–47 with that of a "synthetic," or counterfactual, Nebraska where it is assumed that Nebraska retains its bicameral structure after 1937. Compared to spending per capita in the real Nebraska, which actually decreased, government spending per capita in the counterfactual Nebraska is higher in the first budget passed by the unicameral legislature. However, through the late 1940s the difference between expenditures per capita in Nebraska and its synthetic counterpart appears to diminish. Placebo tests show that if the 1937 transition to unicameralism was randomly distributed among all of the states in the sample, the probability of obtaining the same post-/pre-treatment fit is approximately 1/47. These findings are important because they offer direct empirical evidence quantifying how a change in legislative structure at the subnational level can affect fiscal policy. However, these findings also show that any effect on fiscal policy might be short-lived. While such drastic changes to legislatures are rare, lawmakers from several countries and U.S. states have attempted to redesign their legislature as a unicameral body or severely limit the powers of one chamber.[2] Policymakers who are in favor of altering the structure of the legislature for purposes of restraining fiscal policy should also consider other consequences that might be longer-lasting.

The ability of the synthetic control method to generate an acceptable control group has made it a popular research design in the fields of comparative politics and economics. Abadie and Gardeazabal (2003) first developed the method as a means of studying the effects of terrorism in the Spanish Basque Country. Abadie, Diamond, and Hainmueller (2010) used the method to study how California's 1988 tobacco control initiative impacted cigarette sales per capita, and Abadie, Diamond, and Hainmueller (2015) studied how the 1990 German reunification impacted gross domestic product (GDP) per capita in West Germany. Since then, the number of studies employing the synthetic control method have become too numerous to list. However, recent applications studying political events include Fowler (2013), who examined how compulsory voting in Australia impacted voter turnout; S. Lee (2014), who showed evidence that

https://doi.org/10.1177/1532440019868818 Published online by Cambridge University Press

California's passage of a supermajority voting requirement for tax increases temporarily lowered the state's tax burden; and Grier and Maynard (2016), who investigate the impact that Hugo Chavez's rise to power had on the health and economic well-being of Venezuelans.

The remainder of the article is organized as follows: the "Prior Analysis of Legislative Structure" section reviews the literature on legislative structure; the section "The Rise of Unicameralism in Nebraska" gives a brief history of how Nebraska's unicameral legislature was achieved; the "Implementing the Synthetic Control Method" section discusses how the synthetic control method is implemented; the "Data" section explains the process of collecting suitable data and the variables of interest; the "Results" section presents and discusses the results; and the "Conclusion" section concludes.

Prior Analysis of Legislative Structure

Tullock (1959) noted that the higher decision-making costs inherent in a bicameral legislature could reduce the total amount of resources spent by government. Buchanan and Tullock (1962) further developed this theory and claimed that a bicameral legislature could only be justified if there were significant differences in the constituents represented by each chamber. However, to quote Voigt (2011, 227), "empirical evidence on the effects of bicameralism is sparse" and the evidence regarding the fiscal effects of bicameralism is even more so.[3] Furthermore, what little evidence does exist is often conflicting. Whereas Tullock (1959) and Buchanan and Tullock (1962) argued that higher decision-making costs could lead to a lower level of government spending, Heller (1997) showed evidence that these costs could lead to more spending and larger budget deficits. Using a panel of 17 European democracies from 1965 to 1990, Heller showed a correlation between bicameralism and larger budget deficits. According to Heller's argument, if a preferred policy is to pass through a bicameral legislature it will have to win the approval of more veto players; and for the proposer to secure the vote of another legislator, he or she will have to reciprocate by supporting that legislator's preferred policy. In Heller's model, this logrolling will drive up the cost of government. D. Lee, Borcherding, and Kang (2014) found evidence supporting Heller's hypothesis. They showed that under certain conditions, greater public spending will result if a state adopts a supermajority rule over a simple majority rule because the additional members necessary to form the new supermajority will have to be paid off with more spending.

Bradbury and Crain (2001) used a panel of 24 bicameral and 14 unicameral democratic legislatures over the period 1971 to 1989 and showed that increased spending associated with the "Law of 1/n" (Weingast, Shepsle, and Johnson 1981) was dampened in bicameral legislatures.

Bradbury and Crain (2002) created a continuous proxy variable that measured the degree of bicameralism in each American state.[4] This proxy variable measured the degree of homogeneity within the constituent base of each legislative chamber for each state. Thus, their analysis was firmly rooted in the theory advanced by

https://doi.org/10.1177/1532440019868818 Published online by Cambridge University Press

Buchanan and Tullock (1962). With data over the period 1994 to 1997 Bradbury and Crain showed that as the degree of constituent homogeneity decreased, redistributive spending tended to decrease while expenditures on public goods tended to increase. Finally, Plümper and Martin (2003) showed a negative correlation between bicameralism and government spending in a sample of 83 countries during the period 1975 to 1997.

The papers cited above that study the American states make valuable contributions to the study of bicameralism. However, these studies are obviously limited in what they can say about the differences between unicameralism and bicameralism. The papers that have been able to make the most direct comparison between bicameral and unicameral legislatures have relied on cross-country data. These authors then used traditional regression techniques to observe how differences in legislative structure affected government spending, holding other factors constant. In the study by Heller (1997) only parliamentary democracies were used. Plümper and Martin (2003) used a mixture of countries with both a parliamentary and presidential system, but did not control for the form of government. In both cases, the necessary use of cross-country data introduces the unfortunate reality that demographic, economic, and governmental characteristics can vary widely across the data set. However, with respect to the American states, these differences are minimized. Furthermore, to my knowledge, neither Heller (1997) nor Plümper and Martin (2003) were able to exploit a country's legislature changing the number of chambers.[5] The case of Nebraska, coupled with the synthetic control method, allows me to add to the literature discussed above while also avoiding some of the inherent complications these authors faced.

In addition to the emphasis on veto players and constituent homogeneity, other factors related to differences between the organization structure of bicameral and unicameral legislatures could ultimately influence the level of spending as well. For example, Rogers (2001) provided a theoretical model showing that a bicameral legislature can produce more informed policy compared to a unicameral legislature, even if the two chambers represent similar constituencies. Rogers (2003) analyzed differences in legislative production between bicameral and unicameral legislatures and found some instances where bicameral legislatures produced more legislation than unicameral legislatures, and Congleton (2006, 272) argued that bicameral legislatures pass policy that is "more faithful to voter preferences." However, it is unclear whether characteristics like more legislative output, better informed policy, or faithfulness to voter preferences will lead to higher or lower levels of spending.[6]

The Rise of Unicameralism in Nebraska

In 1934, the citizens of Nebraska approved a constitutional amendment reducing Nebraska's legislature from two chambers to one by a margin of 286,086 to 193,152.[7] However, interest in a unicameral legislature began much earlier. As far back as 1910, members of the Progressive Movement in the United States began to push for unicameral legislatures because it was thought that a one-chambered body would be more efficient and more responsive to voters' concerns.[8] Support for a unicameral

https://doi.org/10.1177/1532440019868818 Published online by Cambridge University Press

legislature in Nebraska has been traced back to at least 1913, and the first serious consideration for a one-chambered legislature occurred in 1917, when the issue was considered by a state constitutional convention.[9] While this attempt to transform Nebraska's legislature failed, interest in a unicameral legislature remained and its strongest advocate became George W. Norris, a U.S. Senator from Nebraska. Senator Norris was very much a Progressive Era liberal—he entitled his autobiography *Fighting Liberal: The Autobiography of George W. Norris*—and his desire to see his home state represented by a unicameral legislature was firmly rooted in his progressive ideals. As David Fellman (1946, 34) wrote, his distaste for bicameralism was "consistent with his well-known views in favor of openness, simplicity, and independence of members in the legislative process." It was Senator Norris's hope that the unicameral legislature would make governance more transparent and curb the behind-the-scenes intercameral bargaining that occurred during bicameral conference committee sessions. According to Fellman (1946, 35), Senator Norris saw these sessions as a "happy hunting-ground for the lobbyists of the special interests." Norris viewed the decision-making costs associated with bicameralism as an inhibitor of good government rather than the check on inefficient spending that Buchanan and Tullock (1962) thought it to be. Furthermore, whether rightly or wrongly, he would have scoffed at the notion that the two constituencies represented by the upper and lower chambers were different, claiming that "there is no sense or reason in having the same thing done twice, especially if it is to be done by two bodies of men elected in the same way and having the same jurisdiction" (Norris 1945, 350).

Norris played an outsized role in seeing the unicameral legislature come to fruition. He campaigned extensively across Nebraska making the case that a unicameral legislature would be more efficient, less costly, and more transparent than a bicameral legislature. These reasons likely resonated with the concerns of Nebraskans, particularly the idea that a unicameral legislature would cost less to run and be more responsive to the concerns of voters.[10] However, in addition to Norris's advocacy, Berens (2000) argues that other factors contributed to its passage as well. For example, the constitutional amendment appeared alongside amendments for the repeal of prohibition and legalization of pari-mutuel betting, which by some accounts were both popular amendments that helped bring more Nebraskans to the polls.

The first session of the unicameral legislature met in 1937 and was composed of 43 members, costing $103,445, as opposed to the 133 member bicameral legislature, which costs $202,593.[11] Along with establishing rules and procedures for how the new unicameral legislature would operate,[12] legislators also passed a biennium budget, which was to take effect in July of 1937.

While Senator Norris was more concerned with openness of government and the direct cost of operating the legislature than with the level of government spending, the case of Nebraska still provides a unique case study into how government spending would have proceeded had this overhaul of the legislature been unsuccessful. While it may be obvious that a smaller, one chamber legislative body should cost less to operate, the preceding discussion of the literature shows that its effect on bargaining costs and the overall level of spending is much less clear.

https://doi.org/10.1177/1532440019868818 Published online by Cambridge University Press

Nonpartisan Elections

The same amendment that reduced the legislature to a single chamber also dispensed with party labels for individual legislators. Beginning with the 1937 legislature, candidates were nominated and elected on a nonpartisan basis.[13] At first glance, the fact that the legislature enacted both changes simultaneously poses a significant identification challenge. Not surprisingly, the Nebraska legislature has been a useful laboratory for political scientists studying the effects of nonpartisanship. Wright and Schaffner (2002) used survey data and roll-call votes to assess differences in partisanship and ideology between candidates and legislators in the Nebraska legislature and the Kansas Senate. Surprisingly, they found that candidates in Nebraska were very similar to candidates in Kansas, both in terms of the liberal–conservative issue space and in the degree of polarization. However, when studying the roll-call votes of elected legislators, there were stark differences between Kansas and Nebraska. Whereas legislators in the Kansas Senate continued to show evidence of a structured issue space and political polarization, there was almost complete structural and partisan breakdown in Nebraska.[14]

Importantly, however, Wright and Schaffner (2002) were studying the late 1990s and early 2000s. Earlier work by Welch and Carlson (1973) studied the Nebraska legislature for the years 1927, 1937, 1947, 1959, and 1969. Interestingly, while they found a similar breakdown in legislative structure during the later years of the study, which they attributed to a lack of party leadership, the Nebraska legislatures of 1927 and 1937 were not only similar to one another, but both displayed similarities with other state legislatures. As Welch and Carlson (1973, 859) write,

> The 1927 and 1937 sessions of the Nebraska Senate . . . conform more closely in degree of [issue] structure to some other legislative systems. The 1927 system was partisan, and while the 1937 system was nonpartisan, about 80 per cent of its members had served in the partisan legislature of 1935 or earlier.

Thus, it is plausible that in the years immediately following 1937, legislators had not fully internalized the incentives created by the nonpartisan structure. If that is the case, then the simultaneous switch to nonpartisan elections is less of a concern for the 1937 budget that covered the period from July 1937 to June 1939. Still, I cannot rule out the possibility that this aspect of the unicameral legislature begins to have an impact prior to 1947, the last year of my dataset studied by Welch and Carlson (1973).

In light of this possibility, it is worth considering how nonpartisan elections could have affected expenditures during the 1940s. Primo and Snyder (2010) studied states with bicameral legislatures over the period 1957 to 1970 and showed that weak party organization in the electorate led to more distributive projects, and thus to more spending, while legislative party strength had no effect one way or the other. Could party strength have eroded as the electorate began to adapt to a nonpartisan system? Perhaps. However, Welch and Carlson (1973) argued that the party system in Nebraska during

https://doi.org/10.1177/1532440019868818 Published online by Cambridge University Press

the 1920s and 1930s was relatively weak to begin with, owing perhaps to the influence of Norris himself. Moreover, they argued that "if Nebraska had had a strong party system in the '20s and '30s, it would have been impossible to establish the nonpartisan legislature" (Welch and Carlson 1973, 860). Thus, any effect attributable to nonpartisan elections might rely on how quickly party organization in the electorate changed and when legislative behavior began to change.

Implementing the Synthetic Control Method

The goal of this article is to estimate how expenditures per capita in Nebraska would have behaved in the absence of the switch from a bicameral to a unicameral legislature. To do this I create a synthetic Nebraska that is a weighted combination of the potential control states. None of the potential control states experienced a change in legislative structure similar to Nebraska's. Furthermore, it is unlikely that the effects of Nebraska's legislative structure would have affected the fiscal policy of the other states. Thus, it should be possible to create a suitable synthetic control from the available states. There are several reasons why we would want to create a synthetic Nebraska. First, Nebraska's legislature has remained unicameral since 1937, meaning we have no post-1937 observations of Nebraska to use as a control. Second, simply using all other states for which data exist to create a control will not be informative if the pre-1937 control observations do not closely match those of Nebraska. Figure 1 compares expenditures per capita in Nebraska with average expenditures per capita for all potential control states. It is clear that prior to 1937, average expenditures per capita for these states are consistently greater than expenditures per capita in Nebraska. Furthermore, it is well-known that a crucial assumption of difference-in-differences analysis, the most likely alternative estimation method, is that the outcome variables for the treatment and control groups exhibit similar trends. That assumption is obviously violated here. In other words, creating a control group from all of the potential control states would result in a poor comparison.

By using the synthetic control method, I can create a control group with expenditures per capita that are a weighted average of the donor states. This method selects the weights based on how closely the chosen predictor variables for the potential control states are related to the predictor variables for Nebraska. States with values of the predictor variables that are similar to Nebraska are assigned a higher weight. The sum of all of the weights is restricted to lie along the interval from zero to one. While it is possible that all states in the donor pool will receive some positive weight, in reality most states will be assigned a weight of zero.

This process can also be expressed in relatively straight-forward notation that is taken from Abadie, Diamond, and Hainmueller (2010). Let X_1 represent a $(K \times 1)$ vector of pre-unicameral predictor variables for Nebraska and let X_0 represent a $(K \times J)$ matrix of the predictor variables for the J potential control states. In addition, let Y_1 be a vector of pre-unicameral expenditures for Nebraska and Y_0 be a vector of pre-unicameral expenditures for the potential control states. The pre-unicameral period

https://doi.org/10.1177/1532440019868818 Published online by Cambridge University Press

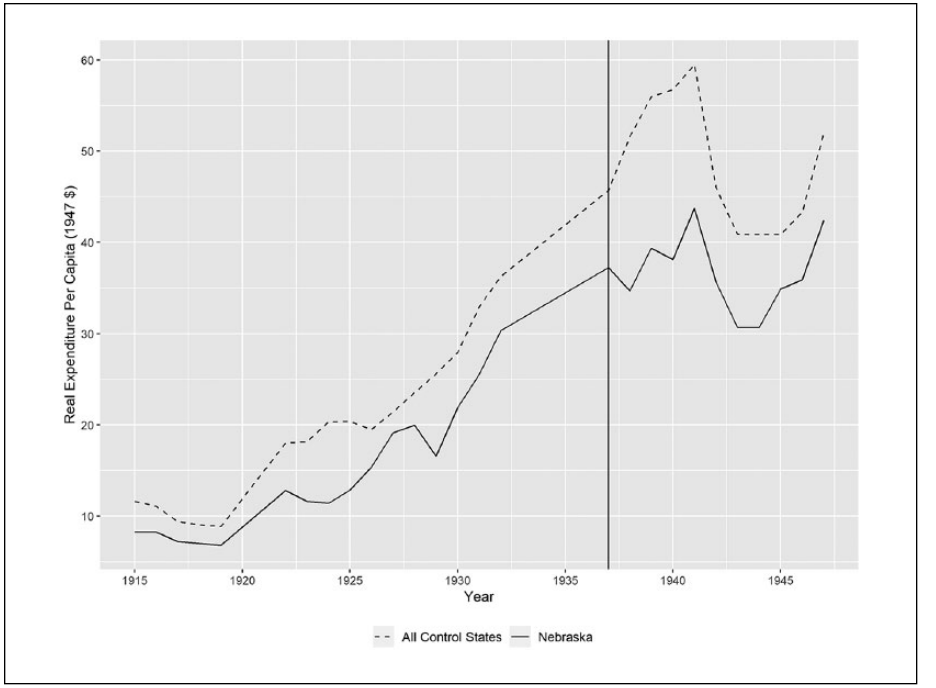


Figure 1. Expenditures per capita in Nebraska and all other control states.
Note. The solid line represents expenditures per capita (natural log) for Nebraska. The dashed line represents expenditures per capita (natural log) for all potential control states. Expenditures are measured in 1947 dollars and are available for the years 1915–19, 1922–32, and 1937–47.

includes all years prior to 1937. As discussed in the section "The Rise of Unicameralism in Nebraska," 1937 is considered the beginning of the unicameral period because the legislature passed a budget that took effect during the same calendar year. The vector W is a $(J \times 1)$ column of nonnegative weights assigned to each potential control state that sum to one. The synthetic control method will choose these weights such that the distance between X_1 and X_0W is minimized. This distance is measured by the formula $\sqrt{(X_1 - X_0W)'V(X_1 - X_0W)}$, where V is a $(K \times K)$ symmetric and positive semi-definite matrix that will ultimately assign a larger weight to the predictor variables that have more influence over expenditures per capita. The synthetic control method will select an initial V and then solve for the weights W as a function of V, $W(V)$. Using the function $W(V)$, a new V is chosen such that the root mean squared prediction error (RMSPE) over the entire pre-unicameral period, calculated as $\sqrt{(Y_1 - Y_0W(V))'(Y_1 - Y_0W(V))}$, is minimized. Once the method minimizes the RMSPE, the final weighting matrix is calculated. Lastly, using the final weights, annual government spending for synthetic Nebraska is calculated by applying the weights to the annual government spending data for the donor states.

https://doi.org/10.1177/1532440019868818 Published online by Cambridge University Press

Data

I use annual state-level government expenditure data covering the period 1915–47. Expenditures on debt service and public service enterprises are excluded, meaning expenditure data only cover costs payments for operations, capital outlays, and payments to local governments and municipalities. The primary data source is the Financial Statistics of States (U.S. Census, various years), which was first published in 1915. Unfortunately, this series was not collected continuously over this time period.[15] The data series was not collected in 1920 and 1921 and was temporarily suspended from 1933 to 1936 due to the severe economic depression that was enveloping the country.[16] The absence of the 4 years prior to the treatment period is unfortunate because additional data would be useful for creating the synthetic control. If the missing data result in a poor fit between the synthetic Nebraska and the real Nebraska, this will be reflected by a large RMSPE for the pre-unicameral period. Expenditures are converted to 1947 dollars using the consumer price index (CPI) as compiled in Carter et al. (2006). Per capita measures are created from population data that are also gathered from this source. Population data are only available every decade from 1900 to 1950; thus, I use interpolation to fill in the years between each decade.

As predictors of expenditures per capita, I use revenue from the federal government per capita for the years 1916–32, state-level net income per capita for the years 1916–32, state population and land area per capita for the years 1916–32, the percentage of Democrats in each state's lower and upper houses over the period 1916–32, and whether or not the governor was a Democrat for this same period.[17] All of these variables are potentially important determinants of state government expenditures. For example, other things equal, additional revenue from the federal government could lead to more state-level spending. Similarly, states with more income per capita might demand more services from the government, resulting in a larger amount of expenditures per capita. Furthermore, some types of expenditures will be related to the population of the state while other types of expenditures might exhibit economies of scale, which is accounted for by the inclusion of land area per capita. The partisan composition of a state's elected branches of government can also influence government spending. However, the use of variables measuring the partisan composition of state legislatures means that Minnesota must be excluded from the data set. Minnesota state legislators were elected on nonpartisan ballots beginning in 1914, and thus observations of these variables do not exist over the time frame that is studied.[18] Moreover, as explained by Abadie, Diamond, and Hainmueller (2015, 500), "units affected . . . by events of a similar nature should be excluded from the donor pool." Because Minnesota underwent a similar change to its legislative structure, it seems appropriate to exclude Minnesota from the donor pool. Finally, I include the average of pre-unicameral expenditures per capita as a predictor variable. While including pre-treatment observations of the outcome variable as predictors is a common practice for improving the fit of the synthetic control function, Kaul et al. (2018) point out that the construction of the synthetic control can be highly sensitive to the researcher's choice of which or how many observations to include. In fact, it is possible that the inclusion of too many

https://doi.org/10.1177/1532440019868818 Published online by Cambridge University Press

Table 1. Predictor Means over Pre-Unicameral Period.

Variable	Nebraska		Average of all control states	*V* matrix
	Real	Synthetic		
LN (revenue from federal government per capita)	0.0243	–0.0294	–0.1371	0.0214
LN (state net income per capita)	4.9912	4.9452	4.9983	0.0031
LN (population)	14.095	14.205	14.1983	0.0306
Area per capita	0.0581	0.0678	0.0916	0.011
Democratic governor	0.5	0.4998	0.4918	0.0173
Percentage of democrats in the upper chamber	36.4773	36.9122	47.2769	0.1956
Percentage of democrats in the lower chamber	41.375	41.286	49.1412	0.1194
Average LN (expenditures per capita)	2.5805	2.5863	2.7938	0.6016

Note. The first three columns provide the means of the predictor variables over Nebraska's pre-unicameral period for Nebraska, synthetic Nebraska, and all potential control states. The column *V* matrix shows the weight received by each variable in the minimization problem used to select the weights *W* for each state in synthetic Nebraska. LN = Natural log of a variable.

outcome observations can render the other predictor variables meaningless when the synthetic control is constructed. Thus, I include the pre-unicameral average of spending per capita in order to avoid this bias.

Revenue per capita from the federal government was collected from various editions of the Financial Statistics of States. State net income was collected from various editions of the Statistics of Income series produced by the Internal Revenue Service (IRS).[19] Per capita measures of these variables are expressed in 1947 dollars. Lastly, the percentage of Democrats in each state's lower and upper houses is collected from Burnham (1984). All predictor variables are averaged over the periods mentioned above.

Results

Table 1 compares the means of the predictor variables over the pre-unicameral period for Nebraska, synthetic Nebraska, and the average of all 46 potential control states with respect to each variable. The last column in Table 1 shows the weights assigned to each predictor variable when deciding the weights that will be assigned to each of the potential control states. The average of pre-unicameral spending received the most weight in the selection of the control states. However, with the exception of state net income per capita, all of the other variables received a weight of more than 1%.

Synthetic Nebraska is a weighted combination of Ohio (35.8%), Idaho (27.5%), New Hampshire (16.9%), South Carolina (11.2%), Kansas (7.6%), and Montana (1.1%). The remaining states are assigned weights of zero. The weights for all states are provided in Table 2. As described in the "Implementing the Synthetic Control Method" section, these states are selected based on how well the relationship between

https://doi.org/10.1177/1532440019868818 Published online by Cambridge University Press

Table 2. Weights in Synthetic Nebraska.

State	Weight	State	Weight
Alabama	0	Nevada	0
Arizona	0	New Hampshire	0.169
Arkansas	0	New Jersey	0
California	0	New Mexico	0
Colorado	0	New York	0
Connecticut	0	North Carolina	0
Delaware	0	North Dakota	0
Florida	0	Ohio	0.358
Georgia	0	Oklahoma	0
Idaho	0.275	Oregon	0
Illinois	0	Pennsylvania	0
Indiana	0	Rhode Island	0
Iowa	0	South Carolina	0.112
Kansas	0.076	South Dakota	0
Kentucky	0	Tennessee	0
Louisiana	0	Texas	0
Maine	0	Utah	0
Maryland	0	Vermont	0
Massachusetts	0	Virginia	0
Michigan	0	Washington	0
Mississippi	0	West Virginia	0
Missouri	0	Wisconsin	0
Montana	0.011	Wyoming	0
Pre-unicameral model fit			
RMSPE	0.07297		

Note. Columns show the weights assigned to each control state for the construction of synthetic Nebraska. Weights are chosen so as to minimize the RMSPE between Nebraska and synthetic Nebraska over the pre-unicameral period. RMSPE = root mean squared prediction error.

expenditures per capita and the predictor variables matched that of Nebraska. In other words, these states were selected by the synthetic control method because the influence that these predictor variables had on the evolution of expenditures per capita was similar to that of Nebraska.

Expenditures per capita for Nebraska and synthetic Nebraska are plotted in Figure 2. The RMSPE, which indicates how well expenditures per capita for synthetic Nebraska fit Nebraska's actual expenditures per capita during the pre-unicameral period, is 0.0729658. Up until 1932, the last year of expenditure data prior to the unicameral legislature, synthetic Nebraska does a reasonable job of fitting the plot of expenditures per capita for Nebraska. Although the fit is not perfect, it is a better approximation than that shown in Figure 1. The use of the synthetic control is also superior to choosing

https://doi.org/10.1177/1532440019868818 Published online by Cambridge University Press

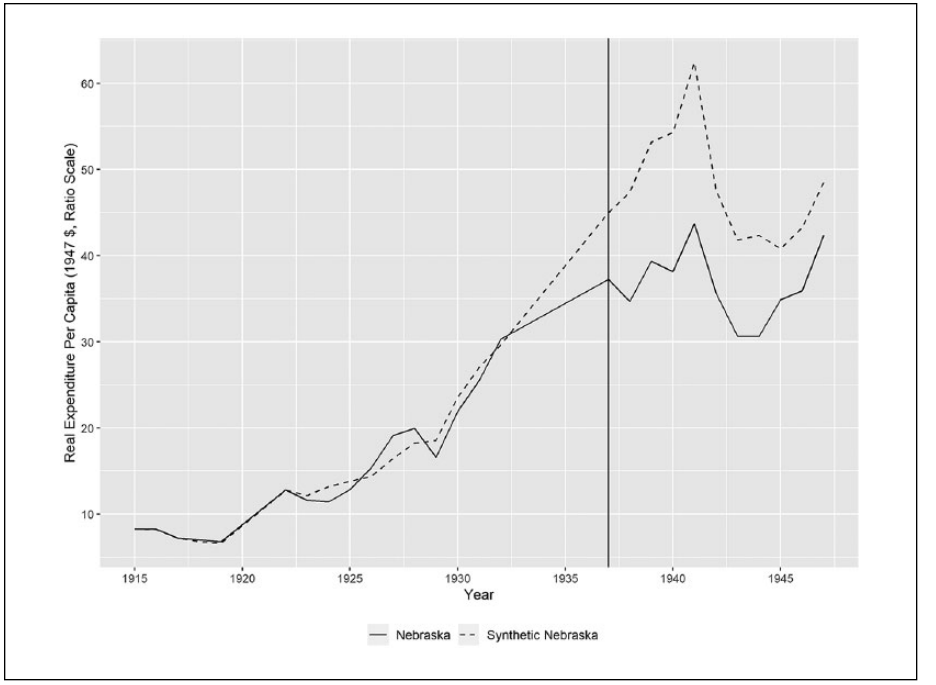


Figure 2. Expenditures per capita in Nebraska and synthetic Nebraska.
Note. The solid line represents expenditures per capita in 1947 dollars for Nebraska. The dashed line measures the natural log of expenditures per capita for synthetic Nebraska, which is created from a weighted average of states as indicated by the weights given in Table 2. Expenditures are available for the years 1915–19, 1922–32, and 1937–47.

one of the potential control states where the relationship between the predictor variables and expenditure per capita is the most similar. For example, according to the synthetic control, the relationship between the predictor variables and expenditures per capita in Ohio is most similar to the relationship between these variables in Nebraska. However, the pre-unicameral RMSPE between Ohio and Nebraska is 0.3269, indicating a worse fit than the one provided by synthetic Nebraska. Beginning with the year 1937 the dashed line is a prediction of how expenditures per capita in Nebraska would have evolved had the legislature remained bicameral. In 1932, expenditures per capita in Nebraska and synthetic Nebraska were $30.32 and $29.66, respectively. However, in 1937 expenditures per capita in real and synthetic Nebraska were $37.24 versus $45.01, respectively. From 1938 to 1947 expenditures per capita in synthetic Nebraska remain above the level of spending per capita that Nebraska actually experienced. However, toward the end of the sample period, spending per capita in both real and synthetic Nebraska appears to be converging. Thus, in the absence of the switch from a bicameral to a unicameral legislature it appears that spending per capita in Nebraska would have continued to increase for a time.

https://doi.org/10.1177/1532440019868818 Published online by Cambridge University Press

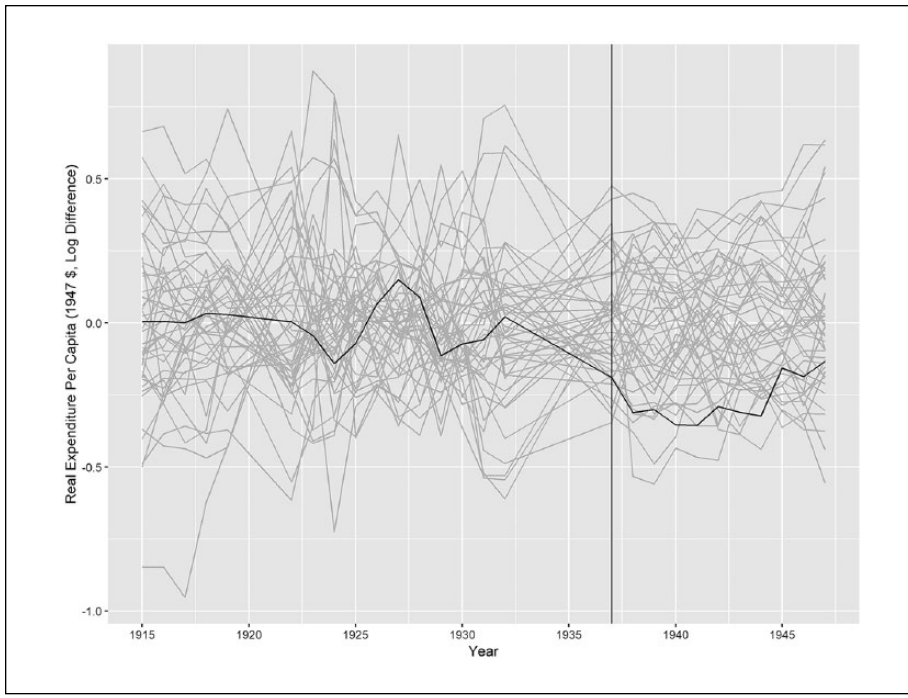


Figure 3. Expenditures per capita placebo tests, all states.
Note. The dark line measures the difference between expenditures per capita (natural log) for Nebraska and synthetic Nebraska, both measured in 1947 dollars. The lighter lines measure the same gap for the remaining 46 states assuming each was subjected to the treatment. Expenditures are available for the years 1915–19, 1922–32, and 1937–47.

Placebo Tests

How accurately can this spending gap be attributed to Nebraska's switch from a bicameral to a unicameral legislature? To assess the validity of these results I employ several placebo tests of the type recommended by Abadie, Diamond, and Hainmueller (2010, 2015). These placebo tests will reassign the treatment to each state individually and compare expenditures per capita to those from a new synthetic control that is unique to each state. In other words, for each state I will assume that its legislature became unicameral in 1937. I will then compare the spending gap between each state and its synthetic counterpart to the gap between Nebraska and synthetic Nebraska.

Figure 3 shows the expenditures per capita gap for all states, with Nebraska's gap shown as the solid black line. In the years following 1937, some states experience a predicted difference in spending per capita that is at least as large as that experienced by Nebraska. However, it is evident from Figure 3 that the pre-1937 RMSPE for some of these states is much larger than that of Nebraska.

https://doi.org/10.1177/1532440019868818 Published online by Cambridge University Press

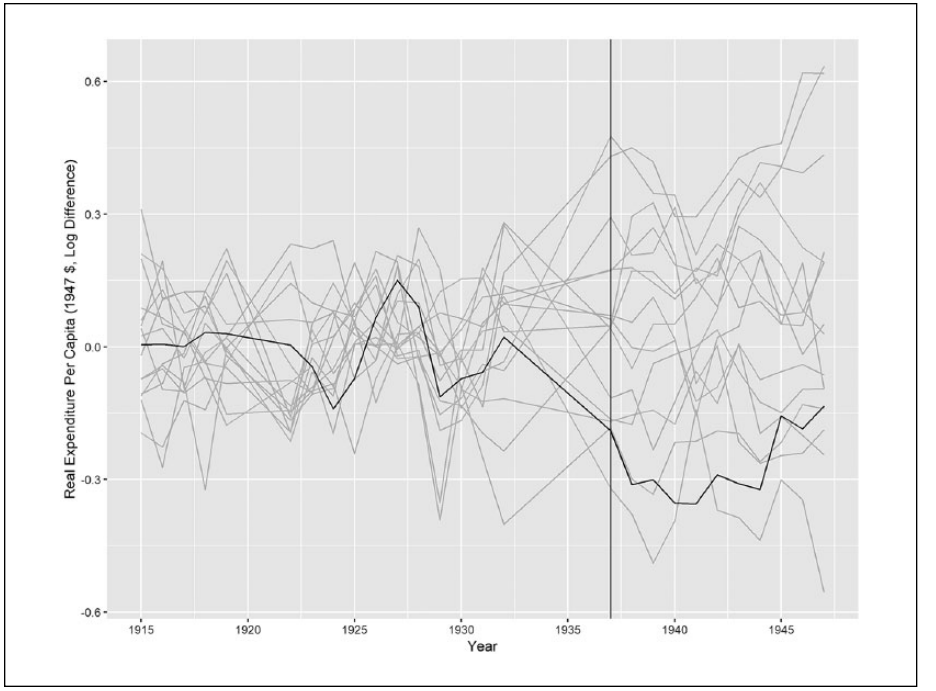


Figure 4. Expenditures per capita placebo tests, states with an RMSPE within 2 times of Nebraska.

Note. RMSPE refers to root mean squared prediction error. The dark line measures the difference between expenditures per capita (natural log) for Nebraska and synthetic Nebraska, both measured in 1947 dollars. The lighter lines measure the same gap for control states with a pre-1937 RMSPE up to 2 times the size of the pre-1937 RMSPE for Nebraska. RMSPE = root mean squared prediction error.

Figure 4 shows expenditures per capita gaps for states with a pre-1937 RMSPE that is within 200% of Nebraska. When the focus is restricted to the states where the synthetic control does a better job of predicting pre-unicameral spending per capita, we still observe two states, New Jersey and Virginia, with a gap between the actual level of spending and spending in its synthetic counterpart that approaches the gap observed for Nebraska. It is difficult to say why the post-1937 gaps estimated for these states are so similar to Nebraska's, and it is possible that these states experienced events following 1937 that, though unrelated to the structure of the legislature, led to a decrease in expenditures per capita nonetheless.

Considering the similarities between Nebraska, Virginia, and New Jersey shown in Figure 4, it is worth using an additional method for evaluating the results. As explained by Abadie, Diamond, and Hainmueller (2015), a large post-treatment RMSPE is only indicative of a large treatment effect if the synthetic control closely matches the treated unit over the pretreatment periods. In other words, if the pre-1937 fit between Virginia and New Jersey and their synthetic counterparts are also poor, then the large post-1937

https://doi.org/10.1177/1532440019868818 Published online by Cambridge University Press

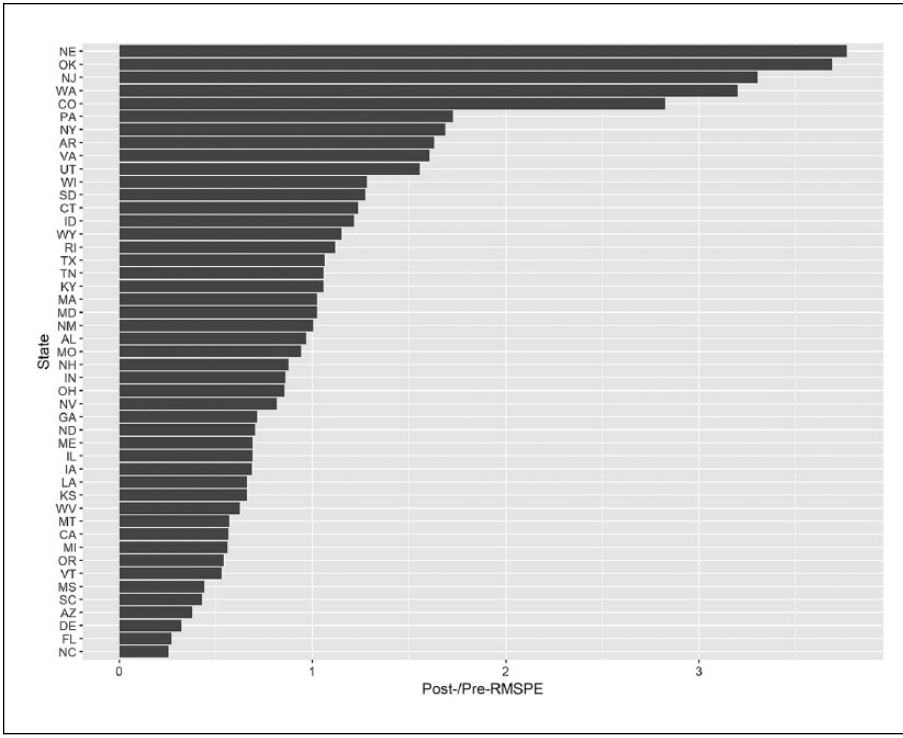


Figure 5. Post-/pre-treatment RMSPE comparison.
Note. The ratio axis measures the ratio of the pre-1937 RMSPE and post-1937 RMSPE for each state. RMSPE = root mean squared prediction error.

RMSPE might not indicate a treatment effect. Figure 5 presents the post-/pre-RMSPE ratio calculated from the placebo test for each state. Nebraska's post-/pre-RMSPE ratio of 3.77 is the largest among the other states, indicating that if one were to assign the 1937 switch to unicameralism at random, the probability of getting a post-/pre-RMSPE ratio as large as Nebraska's would be $1 / 47 = 0.0213$. Clearly, however, the ratios for three other states—Oklahoma, New Jersey, and Washington—are larger than 3. Thus, even through randomly distributing the 1937 treatment, one could obtain a ratio that approached Nebraska's. However, the fact that this ratio is the largest for Nebraska lends credence to the possibility that the change in legislative structure altered the path of expenditures.

Discussion

What, if any, lessons does Nebraska's experience offer for those interested in influencing the path of fiscal policy? First, a legitimate question to ask is whether expenditures per capita remained on a lower path relative to what might have occurred under the

https://doi.org/10.1177/1532440019868818 Published online by Cambridge University Press

bicameral legislature. The gap between expenditures per capita in Nebraska and synthetic Nebraska shown in Figures 3 and 4 casts some doubt. Beginning in 1944, this gap begins to return to zero, indicating that any effect caused by the change in legislative structure was decaying. Several authors have shown that attempts to limit the size of government through rule changes are ineffective over the long run because legislators have an incentive to break through these constraints. For example, Kousser, McCubbins, and Moule (2008) found that tax and expenditure limits had virtually no constraining effect on state governments. More recently, S. Lee (2014, 2018) showed that supermajority requirements are generally only successful at limiting tax burdens in the short run. Keele, Malhotra, and McCubbins (2013) found no evidence that term limits impacted spending one way or the other. One exception is Primo (2006), who found evidence that strict balanced budget amendments, which limit spending prior to the legislative bargaining process, do constrain spending. Another possibility, which was discussed in the section "Nonpartisan Elections," is that the legislative memory of Nebraska's partisan system begins to recede during the late 1940s, giving legislators the incentive to pursue more distributive spending projects. Overall, however, it appears that structural changes to state legislatures, if not properly considered, have at best a temporary effect and often no discernible effect. Those interested in using structural reforms to lower government spending should weigh this likelihood against the effects that a change in legislative structure might have on representation, accountability, and other important legislative functions.

Conclusion

The organization of the legislature can have profound consequences for a representative democracy. The consequences of one organizational choice, whether the legislature is bicameral or unicameral, continue to be debated among economists and political scientists. One question that has been debated by researchers is how the number of chambers affects the size of government. Unfortunately, history offers few instances of legislatures either removing or adding a chamber. Furthermore, the data needed to analyze the few historical cases that do exist are nonexistent or unreliable. Fortunately, the case of Nebraska offers a way to study the relationship between legislative structure and government spending.

I use the synthetic control method to analyze how Nebraska's switch to a unicameral legislature impacted government expenditures. The results indicate that spending per capita noticeably decreased in the years immediately following Nebraska's switch to a unicameral legislature compared to how the synthetic control predicts spending per capita would have behaved had Nebraska maintained its bicameral structure. Placebo tests reveal that if the change in legislative structure were randomly distributed amongst the states, the odds of obtaining the same pre- and post-1937 result experienced by Nebraska would be 0.0213. In other words, the likelihood that the dramatic change in legislative structure had no impact on spending is small.

This finding appears to lend support to the theoretical arguments and empirical findings presented by Heller (1997) and D. Lee, Borcherding, and Kang (2014)

https://doi.org/10.1177/1532440019868818 Published online by Cambridge University Press

showing that the inclusion of more veto players in government decision-making can lead to increases in government spending. However, as with other legislative reforms, the effect on spending appears to be short-lived. One reason for a diminishing effect could be that legislators have a natural incentive to bypass these constraints. Another reason, which cannot be ruled out, is that legislative behavior from Nebraska's partisan past finally began to abate. Regardless, reformers desiring to limit the size of government should consider the likely success of these reforms against other potential consequences.

Acknowledgments

I would like to thank Chris Bonneau and Kristin Kanthak (editors), two anonymous referees, Le Wang, Paul Pecorino, Michael Kowal, seminar participants at the 86th Annual Southern Political Science Association Meetings, seminar participants at the 54th Annual Meetings of the Public Choice Society, and seminar participants at Jacksonville State University for helpful comments on earlier drafts of the paper. I would also like to thank John Wallis for answering questions regarding the data. All remaining errors are my own.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

ORCID iD

William B. Hankins https://orcid.org/0000-0001-7726-0992

Notes

1. https://www.leg.state.mn.us/lrl/issues/issues?issue=uni (accessed on February 2, 2017).
2. Recent examples include Italy (Povoledo 2016), Alabama (Whitmire 2016), Ireland (Brady 2013), and Maine (Adams 2011).
3. See Voigt (2011) for a thorough survey of the literature on bicameralism beyond its impact on fiscal policy.
4. Obviously, Nebraska was excluded.
5. Congleton (2006) does analyze the Swedish Riksdag's transition from a bicameral to a unicameral structure in 1970. However, he does not discuss how fiscal policy was impacted.
6. I would like to thank an anonymous referee for suggesting these alternative mechanisms.
7. http://nebraskalegislature.gov/about/history_unicameral.php (accessed on February 11, 2017).
8. https://library.cqpress.com/cqresearcher/document.php?id=cqresrre1935020900 (accessed on November 24, 2018).
9. See Dulaney (2002).
10. See Berens (2000).

https://doi.org/10.1177/1532440019868818 Published online by Cambridge University Press

11. http://nebraskalegislature.gov/about/history_unicameral.php (accessed on February 2, 2017). Costs figures are in 1937 and 1935 dollars, respectively.
12. See Berens (2000).
13. http://nebraskalegislature.gov/about/history_unicameral.php (accessed on February 2, 2017).
14. Recent work by Masket and Shor (2015) shows that political polarization has crept back into the Nebraska legislature, a phenomenon they attribute to the introduction of term limits.
15. The synthetic control method is still reliable in the presence of gaps; however, the panel must be balanced.
16. Data collected by Sylla, Legler, and Wallis (1995) could potentially be used to fill the gap from 1933 to 1936; however, Sylla, Legler, and Wallis (1995) were only able to collect data continuously for 15 states including Nebraska. These states are Alabama, Arizona, Arkansas, Idaho, Illinois, North Carolina, North Dakota, Nevada, Pennsylvania, South Carolina, South Dakota, Utah, Virginia, and Vermont.
17. To my knowledge, the Statistics of Income series produced by the Internal Revenue Service (IRS) does not provide detailed net income data by state for the year 1915.
18. See Adrian (1952).
19. State net income represent income *reported* in each state on income tax returns, not necessarily income *earned* in each state. However, state personal income, a common measure of income at the state level available from the Bureau of Economic Analysis, is only available beginning in 1929, representing four out of the 16 pre-unicameral years.

References

Abadie, Alberto, Alexis Diamond, and Jens Hainmuller. 2010. "Synthetic Control Methods for Comparative Case Studies: Estimating the Effect of California's Tobacco Control Program." *Journal of the American Statistical Association* 105 (490): 493–505.

Abadie, Alberto, Alexis Diamond, and Jens Hainmueller. 2015. "Comparative Politics and the Synthetic Control Method." *American Journal of Political Science* 59 (2): 495–510.

Abadie, Alberto, and Javier Gardeazabal. 2003. "The Economic Costs of Conflict: A Case Study of the Basque Country." *American Economic Review* 93:113–32.

Adams, Gerry. 2011. "Bill Would Rearrange Maine's Legislature, Eliminating the House." *Bangor Daily News*, April 5. https://bangordailynews.com/2011/04/04/politics/bill-would-rearrange-maines-legislature-eliminating-the-house/.

Adrian, Charles R. 1952. "The Origin of Minnesota's Nonpartisan Legislature." *Minnesota History* 33 (4): 155–63.

Berens, Charlyne Ruth. 2000. "Power to the People: Nebraska's Unicameral Legislature and the Populist/Progressive Ideal. A Social Choice Approach." PhD thesis, University of Nebraska-Lincoln.

Bradbury, John C., and W. Mark Crain. 2001. "Legislative Organization and Government Spending: Cross-Country Evidence." *Journal of Public Economics* 82 (3): 309–25.

Bradbury, John C., and W. Mark Crain. 2002. "Bicameral Legislatures and Fiscal Policy." *Southern Economic Journal* 68 (3): 646–59.

Brady, Neil. 2013. "Ireland: The Seanad Needs Reform, but not Abolition." *The Guardian*, October 3. https://www.theguardian.com/commentisfree/2013/oct/03/ireland-seanad-reform-not-abolition.

https://doi.org/10.1177/1532440019868818 Published online by Cambridge University Press

Buchanan, James, and Gordon Tullock. 1962. *The Calculus of Consent—Logical Foundations of Constitutional Democracy*. Ann Arbor: University of Michigan Press.

Burham, W. Dean. 1984. *Partisan Division of American State Governments: 1834-1985*. Ann Arbor: Inter-University Consortium for Political and Social Research.

Carter, Susan B., Scott Sigmund Gartner, Michael R. Haines, Alan L. Olmstead, Richard Sutch, and Gavin Wright. 2006. *Historical Statistics of the United States: Millennial Edition Online*. Cambridge: Cambridge University Press.

Congleton, Roger. 2006. "On the Merits of Bicameral Legislatures: Intragovernmental Bargaining and Policy Stability." In *Democratic Constitutional Design and Public Policy, Analysis and Evidence*, eds. Roger D. Congleton and Birgitta Swedenborg. Cambridge: MIT Press, 163–88.

Dulaney, Michael S. 2002. *A History and Description of the Nebraska Legislative Process*. Lincoln: National Council of School Administrators.

Fellman, David. 1946. "The Liberalism of Senator Norris." *American Political Science Review* 40 (1): 27–51.

Financial Statistics of States. Various Years. U.S. Census Bureau.

Fowler, Anthony. 2013. "Electoral and Policy Consequences of Voter Turnout: Evidence from Compulsory Voting in Australia." *Quarterly Journal of Political Science* 8 (2): 983–1001.

Grier, Kevin, and Norman Maynard. 2016. "The Economic Consequences of Hugo Chavez: A Synthetic Control Analysis." *Journal of Economic Behavior & Organization* 125:1–21.

Heller, William B. 1997. "Bicameralism and Budget Deficits: The Effect of Parliamentary Structure on Government Spending." *Legislative Studies Quarterly* 22 (4): 485–516.

Kaul, Ashok, Stefan Klößner, Gregor Pfeifer, and Manuel Schieler. 2018. *Synthetic Control Methods; Never Use All Pre-Intervention Outcomes Together with Covariates, Mimeo*. Munich: University Library of Munich.

Keele, Luke, Neil Malhotra, and Colin H. McCubbins. 2013. "Do Term Limits Restrain State Fiscal Policy? Approaches for Causal Inference in Assessing the Effects of Legislative Institutions." *Legislative Studies Quarterly* 38 (3): 291–326.

Kousser, Thad, Mathew D. McCubbins, and Ellen Moule. 2008. "For Whom the TEL Tolls: Can State Tax and Expenditure Limits Effectively Reduce Spending?" *State Politics & Policy Quarterly* 8 (4): 331–61.

Lee, Dongwon, Thomas E. Borcherding, and Youngho Kang. 2014. "Public Spending and the Paradox of Supermajority Rule." *Southern Economic Journal* 80 (3): 614–32.

Lee, Soomi. 2014. "The Effect of Supermajority Vote Requirements for Tax Increase in California: A Synthetic Control Method Approach." *State Politics & Policy Quarterly* 14 (4): 414–36.

Lee, Soomi. 2018. "Do States Circumvent Constitutional Supermajority Voting Requirements to Raise Taxes?" *State Politics & Policy Quarterly* 18 (4): 417–40.

Masket, Seth, and Boris Shor. 2015. "Polarization without Parties: Term Limits and Legislative Partisanship in Nebraska's Unicameral Legislature." *State Politics & Policy Quarterly* 15 (1): 67–90.

Norris, George W. 1945. *Fighting Liberal: The Autobiography of George W. Norris*. New York: Macmillan.

Plümper, Thomas, and Christian W. Martin. 2003. "Democracy, Government Spending, and Economic Growth: A Political-Economic Explanation of the Barro-Effect." *Public Choice* 117 (1–2): 27–50.

https://doi.org/10.1177/1532440019868818 Published online by Cambridge University Press

Povoledo, Elisabetta. 2016. "Italy's Constitutional Referendum: What You Need to Know." *The New York Times*, December 2. https://www.nytimes.com/2016/12/02/world/europe/italy-referendum.html.

Primo, David M. 2006. "Stop Us before We Spend Again: Institutional Constraints on Government Spending." *Economics & Politics* 18 (3): 269–312.

Primo, David M., and James M. Snyder. 2010. "Party Strength, the Personal Vote, and Government Spending." *American Journal of Political Science* 54 (2): 354–70.

Rogers, James R. 2001. "An Informational Rationale for Congruent Bicameralism." *Journal of Theoretical Politics* 13 (2): 123–51.

Rogers, James R. 2003. "The Impact of Bicameralism on Legislative Production." *Legislative Studies Quarterly* 28 (4): 509–28.

Statistics of Income. Various Years. U.S. Internal Revenue Service.

Sylla, Richard E., John B. Legler, and John Wallis. 1995. *State and Local Government: Sources and Uses of Funds, State Financial Statistics, 1933-1937*. Ann Arbor: Inter-University Consortium for Political and Social Research.

Tullock, Gordon. 1959. "Problems of Majority Voting." *Journal of Political Economy* 67 (6): 571–79.

Voigt, Stefan. 2011. "Positive Constitutional Economics II—A Survey of Recent Developments." *Public Choice* 146 (1–2): 205–56.

Weingast, Barry R., Kenneth A. Shepsle, and Christopher Johnsen. 1981. "The Political Economy of Benefits and Costs: A Neoclassical Approach to Distributive Politics." *Journal of Political Economy* 89 (4): 642–64.

Welch, Susan, and Eric H. Carlson. 1973. "The Impact of Party on Voting Behavior in a Nonpartisan Legislature." *American Political Science Review* 67 (3): 854–67.

Whitmire, Kyle. 2016. "Alabama Senator Proposes Disbanding Alabama Senate." *AL.com*, February 2. https://www.al.com/opinion/2016/02/abolish_the_alabama_senate_one.html.

Wright, Gerald C., and Brian F. Schaffner. 2002. "The Influence of Party: Evidence from the State Legislatures." *American Political Science Review* 96 (2): 367–79.

Author Biography

William B. Hankins is an assistant professor of economics in the Department of Finance, Economics, and Accounting at Jacksonville State University. His research focuses on the economic effects of legislatures, partisan politics, and political polarization.

https://doi.org/10.1177/1532440019868818 Published online by Cambridge University Press