

# Do Large States Really Differ from Small States? Testing Divisions in the United States Senate

Nathan Morse

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## **Abstract**

The apportionment of the U.S. Senate boosts the per-capita voting power of smaller states, a practice often justified by the fear that large states may gang up on small states and overpower them. Using legislation data from Congress, I assess whether there are systematic differences in the type of legislation sponsored by small-state senators and large-state senators. A variety of statistical procedures consistently fail to provide evidence that small states and large states have fundamentally different political interests. However, urban states and rural states do have different political interests. This suggests that while state size may appear to be a significant source of division among states, it merely coincides with deeper underlying cultural differences.

## Introduction

Amidst the increasing scrutiny that has arisen in recent years over the small-state advantage in the Electoral College, it is worth evaluating the even more inequitable structure of the United States Senate. The hallmark of the Senate is that each state has equal representation regardless of its size, unlike the proportional representation of the House. At the time the Constitution was written, states were closer in size to each other than they are today: the population of the largest state, Virginia, was around 13 times the population of the smallest state, Delaware. Nowadays, California is nearly 69 times as large as Wyoming—a range more than five times as large as it was originally. As a result, the Senate is one of the most malapportioned legislative bodies in the world (Samuels and Snyder 2001). The Supreme Court has ruled that states are not allowed to follow a similar composition for their own state senates (*Reynolds v. Sims* 1964).

One common argument for the apportionment of the Senate is that it prevents small states from being overpowered by large states. Without such a system, large states could dominate the political landscape, leaving small states unable to have any say. This concern is predicated on the assumption that people from small states have fundamentally different political interests than people from large states, and that people from large states have substantially similar political interests to people from other large states. As far back as the Constitutional Convention of 1787, scholars have been challenging this assumption. James Madison, recalling his speeches at the convention, argued:

In point of manners, Religion, and the other circumstances which sometimes beget affection between different communities, [large states] were not more assimilated than the other States. In point of the staple productions they were as dissimilar as any three other States in the Union. The Staple of [Massachusetts] was fish, of [Pennsylvania] flower, of [Virginia] [tobacco]. Was a combination to be apprehended from the mere circumstance of equality of size? Experience suggested no such danger.

In other words, Madison argued that there really was no substantive difference between large states and small states. The large states at the time had no common interests that would unite them to gang up against the small states.

In this study, I collect data on bills and resolutions introduced in the Senate and determine whether there are systematic differences in bills sponsored and cosponsored by senators from small states as opposed to large states. If Madison's conjecture was correct, we would expect senators from small states to be just as likely to cosponsor a given bill as senators from large states. If there really is a divide by state size, we would expect the cosponsors of a bill to represent states of relatively similar size, at least in the overall trend.

## State Characteristics and Political Interests

No piece of legislation, executive appointment, or treaty can pass without approval of the Senate, so its apportionment has significant consequences on American politics. Lee and Oppenheimer (1997) conducted a comprehensive analysis of the effects of the Senate on campaigning and policy, and Griffin (2006) assessed its effects on representation. Scholars assessing early twentieth-century records have found no association between states size and political divisions (e.g. Woody 1926), but the issue appears to have been largely untouched since then. However, there is ample scholarship identifying other correlates of political divisions. Religiosity, for example, is a strong predictor of conservatism. Culture in general is more closely associated with political ideology than are economic environments (Glaeser and Ward 2006).

This also suggests that divisions between small states and large states arise not from population but from culture. Unless there is some theoretical basis to claim that state population *results* from culture—say, state lines were purposefully carved so that citizens who prefer small states could be in small states—any correlation between population and political identity comes from other underlying cultural characteristics. Thus, a state’s population should have no effect on political interests. In the context of cosponsors of Senate bills and resolutions, this implies that there should be no trend in senators from similarly sized states cosponsoring legislation together.

To gauge a state’s political interests, I determined the topics of legislation cosponsored by its senators. Introducing legislation indicates that the topic of the bill is a priority for the sponsor and cosponsors. Lee (2008) uses a laborious process to analyze the text of legislation and the congressional record of statements on legislation to code each bill into a topic category. The three main categories she uses are economic issues, social issues, and “hawk vs. dove” issues. A simpler proxy that should generally parallel this categorization is the committee to which the bill is assigned. Sinclair (1986) shows that Senate committees play a large role in agenda setting, so the committee assigned to a piece of legislation is a rough but fair indicator of its cosponsors’ agendas. For example, bills introduced into the Committee on Banking, Housing, and Urban Affairs would be primarily economic in nature; bills introduced into the Committee on Health, Education, Labor, and Pensions would primarily be social; bills introduced into the Armed Services Committee would be military.

If state size plays a significant role in shaping a state’s political interests, that would imply the following:

*Hypothesis 1:* The state populations of the cosponsors of a piece of legislation in the Senate are associated with the committee to which it is assigned.

I did not expect this hypothesis to be supported. Rather, I expected to find insufficient evidence to rule out that there is no link between state size and political interests.

Even if my expectation held true, larger states tend to be more urban, and smaller states tend to be more rural. Population, then, could be a proxy for the urban-rural makeup of a state. Rural states tend to be more religious (Chalfant and Heller 1991), so one could reasonably presume that smaller states have cultural differences and thus political differences. The next hypothesis, then, is:

*Hypothesis 2:* The state urban-rural makeups of the cosponsors of a piece of legislation in the Senate are associated with the committee to which it is assigned.

In sum, I theorize that state population is not a meaningful factor in political interests. Any apparent link is really a matter of the cultural makeup of the state, which will be most pronounced and visible for urban-rural makeup, but will still be indicative of underlying demographic variables. Whether those variables cause urbanization or result from urbanization is beyond the scope of this study, so the causal mechanism in political interests will still not be apparent. Rather, I expect the results to at least show what the causal mechanism is *not*.

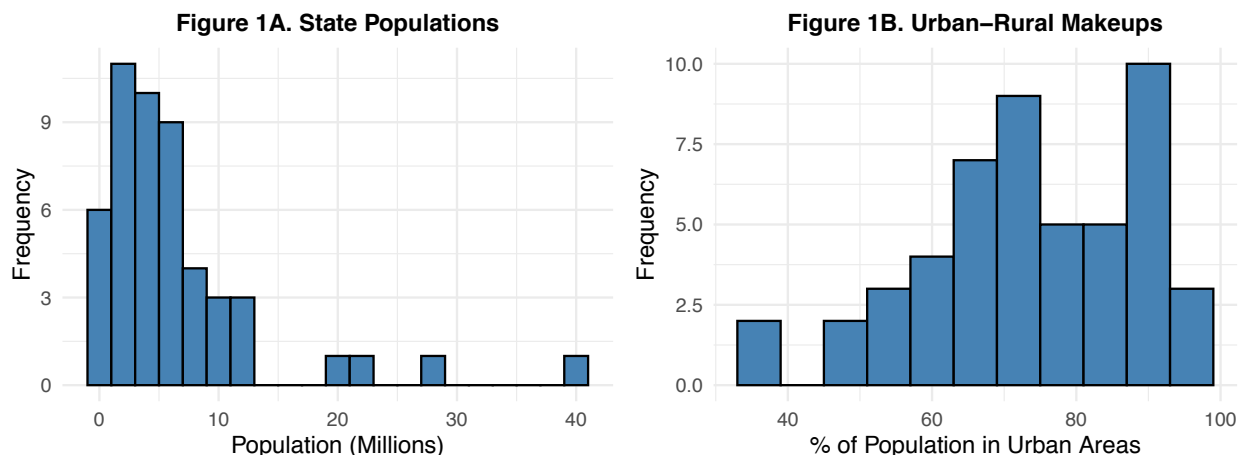
## Data and Methods

The data for this study were obtained from Congress.gov, which has downloadable datasets on all legislation in Congress. The dataset was filtered to include all legislation introduced into the Senate between November 6, 2019 and December 6, 2019. The data file only includes the name of the primary sponsor, but cosponsors are listed online. I manually transcribed cosponsors into the dataset and ran checks for spelling errors. The dataset was further filtered to exclude legislation that had no cosponsors or no committee assignment. Meanwhile, population data was obtained from the U.S. Census Bureau. This included each state’s total population and the percentage of its population living in an urban area, as of 2018.

The sponsor and cosponsors for each bill were then matched with their respective state. The analysis of this study does not distinguish between the sponsor and cosponsors of a piece of legislation, so “sponsors” will hereafter refer both to the sponsor and cosponsors. Likewise, this study does not distinguish between bills and resolutions, so “bill” will refer to any piece of legislation for the sake of simplicity. Amendments are the only other form of legislation in the dataset, and they were removed anyway because they do not have cosponsors or committee assignments.

States were coded as either “large” or “small” and as either “urban” or “rural.” One challenge in designing this study was establishing fair cutoffs for categorizing states as large and urban. As shown in Figure 1, the urban-rural makeups follow a very rough normal distribution, so I decided to count any state in the top half of the distribution as “urban” and any state in the bottom half as “rural.” The distribution of state populations, though, is heavily skewed right by California, Texas, Florida, and New York. Just over half the population (51.2%) lives in the 9

largest states, and the other 41 states contain the other half of the population. I decided to use this as the cutoff for “large” and “small.” This means that only 18 senators—just under one-fifth of the Senate,—are from “large” states.



**Figure 1.** Histograms of state populations (left) and urban-rural makeups (right).

Next, I categorized each bill as being sponsored primarily by large states, small states, or a fair mix of both. Because there are so few senators from large states compared to small states, my cutoffs for these were skewed to weigh large states more. I used the following cutoffs to code each bill’s sponsorship:

<b>Category</b>	<b>Percentage of a bill’s sponsors from large states</b>
Large-state sponsorship	[ 50%, 100% ]
Mixed sponsorship	[ 25%, 50% )
Small-state sponsorship	[ 0%, 25% )

**Table 1.** Binning specifications for codifying sponsorships of each bill.

I also considered categorizing bills sponsored entirely by small-state senators as having small-state sponsorship, bills sponsored entirely by large-state senators as having large-state sponsorship, and all other bills as mixed, but there were so few bills sponsored entirely by large-state senators (6 bills, 3.2%) that this did not allow for meaningful analysis. I also did not want to categorize bills as simply small-state or mixed-state because this could be misleading for some bills. For example, S. 2994, a tax reform bill, has 9 sponsors from small states and 1 sponsor from a large state. It would not be fair to put this in the same category as S. 2951, which has 4

sponsors from large states and none from small states. Therefore, I decided to use proportions of the sponsorship to categorize each bill.

The first stage of analysis examined the relationships between sponsorship and committees, using each piece of legislation as the unit of analysis. This involved running chi-square tests comparing the committees to which legislation was assigned and the types of states sponsoring them. Because the contingency tables for these tests were so large (15 committees  $\times$  3 state size categories = 45 cells, with 186 observations), the expected cell counts were too low to run standard chi-square tests. Instead, Monte Carlo simulations with 50,000 replications were run. Next, ordinary least-squares regression models were constructed with the committee as the independent variable and the proportion of the sponsorship from large states as the dependent variable. Although this flips the variables, I am not attempting to show causality, only relationships.

For the second stage, I focused on sponsorships as the unit of analysis. For each committee, I pooled all of the sponsors for its bills together for collective analysis. Senators who sponsored multiple bills in the same committee were counted as many times as they sponsored legislation for that committee. Then, for each committee, I calculated an overall proportion of the sponsors of its legislation who represent large states. If bills in a given committee are equally likely to come from small states as from large states, we would expect the proportion of large-state sponsors to be 0.18, since 18% of senators represent states that are considered “large.” I ran t-tests on each committee’s sponsorship with  $\mu = 0.18$ .

The third stage used senators as the unit of analysis. I tallied how many bills each senator had sponsored for each committee. With 100 senators and 15 committees, around two-thirds of the cells in this table are 0, and the highest number of bills any senator sponsored in a single committee was 9. I then constructed separate models for each committee, using dummy variables for whether senators represent large states and whether they represent urban states as independent variables and the count of bills they sponsored in the committee as the dependent variable. Normally, a Poisson, negative binomial, or other count model would be appropriate here, but I felt comfortable using ordinary least squares given the simplicity of the two independent variables.

## Analysis

This range of methods provided a simple but effective inquiry into the relationship between state size and political interests, as gauged by the committees assigned to legislation sponsored by senators. The first stage established overall tests to determine whether there is indeed an association, and the latter two stages established which specific committees tend to have legislation sponsored by senators from larger or smaller states.

## Stage 1: Legislation as the Unit of Analysis

I made two contingency tables, one for state size and one for urban-rural makeup, both crosstabulated with committees. These are displayed in Appendix A and Appendix B. The table in Appendix A shows that most committees seem to have roughly similar levels of sponsorship based on state size, but there are a few notable exceptions. The Committee on Commerce, Science, and Transportation, for example, has 19 small-state-sponsored bills, 5 mixed-sponsored bills, and 0 large-state-sponsored bills. The only other committees with 0 large-state-sponsored bills have less than half as many bills as this one, so it is less surprising with them.

This is also theoretically surprising: if anything, I would expect this committee to have *more* bills from large states than the other committees. Large states have more trade, universities, and infrastructure, so I would presume that commerce, science, and transportation are priorities for them. The table in Appendix B offers some insight. 18 of the 24 bills from this committee had primarily urban sponsorship. Therefore, although bills on this topic tended to be sponsored by senators from small states, these tended to be states with more urban populations. The characteristics of large states that led me to believe they would be more likely to sponsor these kinds of bills apply to urban states as well.

Even so, the table in Appendix B has some surprises of its own. 10 of the 11 bills in the Committee on Energy and Natural Resources have primarily urban sponsorship. I would expect rural states to prioritize natural resources, since they have more open space and raw resources. Once again, the other table provides insight: most of the bills in this committee come from small states. The cutoff for “urban” and “rural” was relatively broad—the 25 states with the highest proportions of their populations living in urban areas were considered urban—so it is quite likely that many small states with mostly rural areas were counted as urban if they have just one or two urban centers that house a large share of their population.

After exploring the tables, I ran chi-square tests with Monte Carlo simulations, shown below in Table 2.

<b>Dependent Variable</b>	<b><math>\chi^2</math> Statistic</b>	<b>P-Value</b>
State Population	30.629	0.3374
Urban-Rural Makeup	22.976	0.0457

**Table 2.** Chi-square test results.

The committee to which a bill was assigned had no association with the size of the states its sponsors represent. This provides insufficient evidence to support Hypothesis 1, as I expected. However, there was an association between committee and the urban-rural makeup of its sponsorship at  $\alpha = 0.05$ . This does provide support for Hypothesis 2.

Next, I ran regression models on these data, with dummy variables for the committee as the independent variables and the proportion of each bill's sponsors who represent large states as the dependent variable. The results are in Appendix C. None of the committees had significant relationships, nor did either of the models have meaningfully high adjusted R-squared values. This does not add any support for either hypothesis.

## Stage 2: Sponsorships as the Unit of Analysis

I next ran a series of t-tests to determine if there were any significant results by committee. As noted earlier, these tests compared the proportion of large-state senators in the collective sponsorship of legislation for each committee to 0.18. I removed five committees because they did not have a sufficient amount of data. The results are below in Table 3.

<b>Committee</b>	<b>Bills</b>	<b>Sponsors</b>	<b>Large-State Sponsors</b>	<b>T statistic</b>	<b>P value</b>
Finance	34	118	0.15	-0.7147	0.4798
Commerce, Science, and Transportation	24	100	0.10	-3.2238	0.0038
Health, Education, Labor, and Pensions	22	95	0.25	1.1628	0.2580
Judiciary	19	157	0.22	0.9243	0.3676
Veterans' Affairs	19	78	0.15	-0.5465	0.5914
Banking, Housing, and Urban Affairs	17	88	0.28	1.3339	0.2009
Energy and Natural Resources	11	40	0.28	0.7905	0.4476
Environment and Public Works	11	47	0.16	-0.3263	0.7510
Homeland Security...	11	61	0.12	-1.2926	0.2252
Foreign Relations	10	51	0.25	0.8839	0.3997

**Table 3.** T-tests comparing the proportion of sponsors for legislation in each committee (Large-State Sponsors) to 0.18.

The only committee with a proportion of large-state sponsors significantly different from 0.18 was Commerce, Science, and Transportation. Only 10% of sponsorships in this committee came from large-state senators. This is consistent with what I noticed during the exploratory analysis on the contingency table prior to running chi-square tests. The Committee on Banking, Housing, and Urban Affairs had a comparable number of observations and an even greater deviation from 0.18, but it was not statistically significant because it had a much larger spread. One could argue that the significant results for the Committee on Commerce, Science, and Transportation provides partial support for Hypothesis 1, since there is at least one major



political topic on which small-state and large-state senators have different priorities. Certainly neither the hypothesis nor the broader theory posit that *every* committee would show significantly different priorities among senators, but this single committee is such a narrow scope that I hesitate to conclude that it lends support to the hypothesis.

Turning to the urban-rural makeups, I ran the same procedure, this time comparing the proportion of urban-state senators in the collective sponsorship for each committee to 0.5. The results are in Table 4.

<b>Committee</b>	<b>Bills</b>	<b>Sponsors</b>	<b>Urban-State Sponsors</b>	<b>T statistic</b>	<b>P value</b>
Finance	34	118	0.42	-1.2840	0.2081
Commerce, Science, and Transportation	24	100	0.61	1.7322	0.0966
Health, Education, Labor, and Pensions	22	95	0.59	1.1070	0.2808
Judiciary	19	157	0.63	1.5489	0.1388
Veterans' Affairs	19	78	0.53	0.4208	0.6789
Banking, Housing, and Urban Affairs	17	88	0.68	2.4939	0.0240
Energy and Natural Resources	11	40	0.84	4.0379	0.0024
Environment and Public Works	11	47	0.55	0.5515	0.5934
Homeland Security...	11	61	0.61	1.1669	0.2703
Foreign Relations	10	51	0.80	5.0099	0.0007

**Table 4.** T-tests comparing the proportion of sponsors for legislation in each committee (Urban-State Sponsors) to 0.5.

This time, three committees have statistically significant proportions of urban-state sponsors, and one other is not far behind. The Committee on Energy and Natural Resources and the Committee on Foreign Relations have the highest test statistics, which makes sense given that at least 80% of the sponsorships in both committees come from urban states. Banking, Housing, and Urban Affairs is also significant, with 68% of its sponsorships from urban senators. Compared to the previous round of tests, there are more committees here with significantly different proportions than the null. This could be attributable to the fact that I am counting 50% of states as urban and only 18% as large. It could also be attributable to the theory that state size itself has no effect on political interests but that its demographic makeup—in this case, how urban or rural it is—does have an effect. I still hesitate to conclude that this provides support for Hypothesis 2, but at the very least we can say that the results from this stage provide slightly stronger support for Hypothesis 2 than for Hypothesis 1.

### Stage 3: Senators as the Unit of Analysis

For the final stage, I shifted to using each senator as the unit of analysis. Below are summaries of regression models on the number of bills each senator sponsored, by committee.

Variable	Finance	Commerce+	Health+	Judiciary	Veterans
Large State	0.125 (0.227)	-0.813 (0.960)	-0.688 (0.735)	0.604 (1.241)	0.938 (0.707)
Urban State	-0.434 (0.351)	0.599* (0.298)	0.548* (0.228)	1.516*** (0.385)	0.438* (0.220)
Large * Urban	-0.004 (1.229)	0.213 (1.042)	0.702 (0.797)	-1.203 (1.345)	-1.063 (0.767)
<b>N</b>	100	100	100	100	100
<b>Adjusted R-squared</b>	-0.013	0.026	0.057	0.002	0.023

Variable	Banking+	Energy+	Enviro+	Homeland+	Foreign
Large State	1.521* (0.709)	-0.250 (0.513)	-0.417 (0.521)	-0.479 (0.583)	-0.229 (0.693)
Urban State	0.756*** (0.220)	0.221 (0.159)	0.113 (0.162)	0.227 (0.181)	0.565* (0.215)
Large * Urban	1.569* (0.769)	0.529 (0.556)	0.450 (0.565)	0.648 (0.633)	0.248 (0.752)
<b>N</b>	100	100	100	100	100
<b>Adjusted R-squared</b>	0.121	0.039	-0.014	0.016	0.059

**Table 5.** Regression results. The dependent variable in each model is the number of bills sponsored by each senator for the given committee. Models were not made for the 5 committees with insufficient data. Standard errors are in parentheses. Significance codes: 0 \*\*\* 0.001 \*\* 0.01 \* 0.05

Four of these models had no significant terms and showed no relationship between bill sponsorship and state size, urban-rural makeup, or an interaction of the two. The urban term was significant in the other six models, and in one of those—Banking, Housing, and Urban Affairs—all three terms were significant. This comes at no surprise, considering that this committee has “Urban Affairs” in its name. The model shows that senators from large states, on average, sponsor 1.5 more bills in the Banking committee than senators from small states;

urban-state senators sponsor 0.76 more bills than rural-state senators; and senators from large urban states sponsor 3.8 more bills than senators from other states.

Presumably, the members of a committee are more likely to sponsor legislation assigned to that committee than other senators. I was curious to see if the membership of committees displayed a similar pattern, so I compiled data from Senate.gov on the committee rosters and matched this data with the characteristics of its members' states.

<b>Committee</b>	<b>Sig. in Model</b>	<b>Members from Large States</b>	<b>Members from Urban States</b>	<b>Members from Large Urban States</b>
Finance		25%	61%	21%
Commerce...	Urban	12%	54%	12%
Health...	Urban	13%	39%	9%
Judiciary	Urban	27%	50%	23%
Veterans' Affairs	Urban	18%	41%	12%
Banking...	Large, Urban, Int.	16%	52%	12%
Energy...		0%	45%	0%
Environment...		10%	43%	10%
Homeland Security...		21%	57%	21%
Foreign Relations	Urban	18%	68%	18%

**Table 6.** Percentages of the membership of each committee from large states, urban states, and both. The second column indicates the terms that were significant in the corresponding model from Table 5.

If committee membership was completely random, we would expect 18% of members in each committee to be from large states, 50% to be from urban states, and 16% to be from large urban states. Several of the committees with significant urban terms are fairly close to 50% in terms of their urban membership. The Banking committee's membership is not far off from the expected values: its large-state membership and urban-state membership each deviate by just 2%. This means the membership of the committee is representative of the Senate as a whole, but the senators who sponsor legislation assigned to this committee are *not* representative of the Senate as a whole. They come from disproportionately larger, more urban states. As mentioned previously, this committee explicitly handles matters for urban states. Normatively, it would be slightly concerning if "urban affairs" legislation tended to come from rural states.

These results provide more support for Hypothesis 2, that urban states have different political interests from rural states. The urban-rural makeup of states that sponsors represent were significant in more than half the committees. Only one model showed state size as being

significant, but the interaction of large and urban had a much greater effect than state size on its own. Therefore, there still is not enough evidence to support Hypothesis 1.

## Conclusions

Across the board, the analyses from this study provided strong support for the hypothesis that there is an association between a state’s urban-rural makeup and its political interests, and little support for the hypothesis that there is an association between state size and political interests. This does not mean the state size has *no* relationship with political interests, just that the underlying link comes not from state size but from its urban-rural makeup. Most large states are also urban; of the 9 states that I consider “large,” the only one that is not considered “urban” is North Carolina. In contrast, many urban states are small. 17 of the 25 states considered “urban” are not considered “large.” The fact that the significant results consistently came from how urban a state is rather than how large it is further shows that this characteristic is much more defining of a state’s political interests than its size.

I re-ran the analyses with different standards for binning the urban-rural makeup and came to mostly the same results. For example, I ran the tests and models with only the 9 most urban states being considered “urban,” to keep it parallel with state size, and found no differences in the overall conclusions. There were some minor differences throughout the results, but none to a level that would change the conclusions. For example, when re-running the t-tests from Table 4, I found that the proportion of urban-state sponsors in each committee was often significantly higher than 0.18, and it was almost 0 for the Finance Committee. This suggests that narrowing the binning for urban-rural makeup makes the results even more pronounced than the original analysis. When re-running the regression models from Table 5, most models had similar significance levels, with one exception: the model for bills in the Committee on Energy and Natural Resources had a significant state size term and interaction term, but the urban term itself was not significant. This makes sense: the legislation this committee handles affects land area more than population, so this is the one topic where we would expect to see differences in priorities based on geographic size rather than population size. Plus, there are no large-state senators on the committee.

I also re-ran the analyses labeling the 15 most urban states as “urban,” since the 15 most urban states hold around half the population (51.7%), the same standard I used for state size. This led to roughly the same results as well. Because the only two committees that showed even a hint of political differences between large and small states—Banking, Housing, and Urban Affairs, and Energy and Natural Resources—make sense theoretically, it would not be fair to say that small states and large overall have systematic differences in political interests. Furthermore, these differences became apparent only in limited corners of the analysis. Therefore, I am not

able to confirm the assumptions that predicate the equal apportionment of the Senate. There is little evidence that small states and large states have fundamentally different political interests or that large states are categorically aligned with each other against small states.

This study has several limitations, so these conclusions are by no means definitive. For one, the narrow timeframe provided only a month’s worth of data. I did not run any checks to see if legislation in this month is representative of all legislation in modern times. The dataset used herein was a census of all legislation introduced during this time period, so I can at least make claims about this window of time. However, this is an unusual time—this study coincides with one of the most controversial presidential impeachment inquiries in American history. This may distract members of Congress from sponsoring comparably more normal pieces of legislation. Congress is also notoriously polarized, and the impeachment inquiry is making that increasingly more visible. Despite this, I believe the legislation studied here is mostly representative of other times as well. Very few, if any, bills or resolutions had anything to do with President Trump or the impeachment inquiry. This suggests that the dataset contains just as much diversity in topics as any other time would have.

Another limitation of the study is that it uses committees to gauge political interests, which comes with two main issues. First, committees can have heterogeneous legislation topics. The Committee on Commerce, Science, and Transportation, for example, seems to house everything from trade to scientific research. If small states tend to prioritize commerce and large states tend to prioritize science, the methods of this study would have no way to distinguish between these. Second, even bills on the same topic can have different goals and interests. Small states may seek to lower taxes on an industry, while large states would seek to raise taxes on it. As before, this would not be distinguishable in the analysis.

Going forward, I see several improvements that could be made in replications of this study to make the results more robust and valid. Several decades’ worth of data could be collected and analyzed with time series modeling. Rather than using committees as proxies for political interests, unsupervised learning models could cluster legislation based on text. Future research could also take completely different approaches and use roll call votes, speeches, and statements from senators to measure their priorities, or state-level election returns to measure voter preferences across states.

The apportionment of the Senate has largely been taken for granted by the public and by scholars, probably because it is nearly impossible to amend. Even so, prominent figures are more openly questioning the merits of the Senate now. Last year, the longest-serving member of Congress in history, John Dingell, called for the Senate to be abolished (Dingell 2018). As this idea gains steam and attention, it is worth evaluating whether the normative arguments used by the Framers to justify it are empirically founded. The findings of this paper suggest that they are not. There are many more reasons to be cautious of such a drastic structural change to the

Constitution, so the findings of this study could help steer the conversation away from fruitless originalist arguments and toward more substantive arguments.

## Appendix A

Contingency table with the number of bills sponsored by primarily large-state senators, small-state senators, or mixed sponsorship, by committee.

<b>Committee</b>	<b>Large</b>	<b>Mixed</b>	<b>Small</b>	<b>Total</b>
Finance	6	4	24	<b>34</b>
Commerce, Science, and Transportation	0	5	19	<b>24</b>
Health, Education, Labor, and Pensions	7	3	12	<b>22</b>
Judiciary	3	5	11	<b>19</b>
Veterans' Affairs	4	3	12	<b>19</b>
Banking, Housing, and Urban Affairs	4	5	8	<b>17</b>
Energy and Natural Resources	3	1	7	<b>11</b>
Environment and Public Works	0	4	7	<b>11</b>
Homeland Security and Governmental Affairs	0	3	8	<b>11</b>
Foreign Relations	3	2	5	<b>10</b>
Indian Affairs	0	0	3	<b>3</b>
Armed Services	0	1	1	<b>2</b>
Agriculture, Nutrition, and Forestry	1	0	0	<b>1</b>
Rules and Administration	0	0	1	<b>1</b>
Small Business and Entrepreneurship	0	0	1	<b>1</b>
<b>Total</b>	<b>31</b>	<b>36</b>	<b>119</b>	<b>186</b>

## Appendix B

Contingency table with the number of bills sponsored by primarily urban-state senators or rural-state senators, by committee.

<b>Committee</b>	<b>Urban</b>	<b>Rural</b>	<b>Total</b>
Finance	18	16	<b>34</b>
Commerce, Science, and Transportation	18	6	<b>24</b>
Health, Education, Labor, and Pensions	17	5	<b>22</b>
Judiciary	15	4	<b>19</b>
Veterans' Affairs	14	5	<b>19</b>
Banking, Housing, and Urban Affairs	15	2	<b>17</b>
Energy and Natural Resources	10	1	<b>11</b>
Environment and Public Works	8	3	<b>11</b>
Homeland Security and Governmental Affairs	8	3	<b>11</b>
Foreign Relations	10	0	<b>10</b>
Indian Affairs	3	0	<b>3</b>
Armed Services	1	1	<b>2</b>
Agriculture, Nutrition, and Forestry	1	0	<b>1</b>
Rules and Administration	0	1	<b>1</b>
Small Business and Entrepreneurship	0	1	<b>1</b>
<b>Total</b>	<b>138</b>	<b>48</b>	<b>186</b>

## Appendix C

Regression results. Standard errors are in parentheses.

<b>Committee</b>	<b>Large Sponsors</b>		<b>Urban Sponsors</b>	
Armed Services	-0.28	(0.29)	0.10	(0.4)
Banking, Housing, and Urban Affairs	-0.22	(0.25)	0.18	(0.33)
Commerce, Science, and Transportation	-0.40	(0.24)	0.11	(0.33)
Energy and Natural Resources	-0.22	(0.25)	0.34	(0.34)
Environment and Public Works	-0.34	(0.25)	0.05	(0.34)
Finance	-0.35	(0.24)	-0.08	(0.33)
Foreign Relations	-0.25	(0.25)	0.30	(0.34)
Health, Education, Labor, and Pensions	-0.25	(0.24)	0.09	(0.33)
Homeland Security and Governmental Affairs	-0.38	(0.25)	0.11	(0.34)
Indian Affairs	-0.46	(0.28)	0.29	(0.37)
Judiciary	-0.28	(0.24)	0.13	(0.33)
Rules and Administration	-0.50	(0.34)	-0.10	(0.46)
Small Business and Entrepreneurship	-0.30	(0.34)	-0.01	(0.46)
Veterans' Affairs	-0.35	(0.24)	0.03	(0.33)
<b>N</b>	186		186	
<b>Adjusted R-squared</b>	0.01		0.05	



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