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THE PROBABILITY OF A LEGISLATOR BEING THE DECISIVE VOTER: IMPLICATIONS FOR SHIRKING AND THE SIZE OF GOVERNMENT

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Limited research has been conducted on the relationship between the state legislature and the state's spending and revenue. Thus far, only the implications of the "Law of 1/n" have been tested, as researches have studied the effects of the number of seats in the house. This paper looks at the contrasting theory that the probability of casting a deciding vote in a policy decision affects legislative shirking, and thus the size of government. I find empirical evidence that this relationship is of significant importance.

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1. Introduction

Previous studies have attempted to explain the relationship between the size of the state legislature and the state's revenue and expenditures. Thus far, researchers have only tested the "Law of 1/n" in their studies of this relationship. The theory states that legislators will support spending as long as the benefits their region receives exceed their portion of the overall costs, which are divided between all districts in the state through a common tax. In testing the law on state and local expenditure and revenue, Gilligan and Matsusaka (1995 and 2001) found a positive relationship between the number of seats in the upper house of the state legislature and spending or revenue. However, the size of the lower house did not produce any significant effects, which they site as being consistent with other research findings in the second half of the century. The question of why the size of lower house has no apparent effect on spending and revenue levels remains a puzzle.

In an attempt to explain this discrepancy, I look to a competing theory postulated by Sobel (1992) which introduces the idea that the probability of a legislator casting the deciding vote in a policy decision will affect his voting calculus. Sobel argues that, as the probability of casting the deciding vote rises, legislators are more likely to shirk, or vote in a way that does not reflect the interests of their constituents, which leads to larger than desired spending and revenue. Until now, no one has directly tested his theory on state legislatures and size of government, as only the number of seats in the legislature has been used in empirical models. I find that this theory is important to apply to state spending for the following reasons. The size of both the upper house and lower house o the state legislature is based on the number of districts in the state, a factor that varies greatly across the nation. The lower house of the California legislature has 80 seats, while the lower house in New Hampshire has 400, even though the population of California is over three times that of New Hampshire. Additionally, the relationship between the size of the voting population and the chance that any one vote will be decisive is non-linear. That said, I hypothesize that, because of these variances, the number of seats alone may not accurately explain the size of government. Thus, I focus this paper around testing Sobel's theory on the legislative voter's calculus, and how the probability that one person will affect the outcome of a policy vote leads to shirking.

2. Voting Behavior and the Size of Government

2.1 Theory

To provide the basis for examining how the probability of a legislator casting the decisive vote affects the size of government, I looked to Sobel (1992). He states that politicians are concerned with, first, the marginal personal benefit they will receive from their vote, and, secondly, the marginal political benefit associated with a policy vote in favor of their constituents. He defines personal benefit as the utility one receives from alternatives to holding office or other factors that would increase his utility in a more compensating way than merely holding the office as it is. Hence, these are benefits that are personal to the legislator and do not reflect the wishes of the constituency. Political benefit is the utility derived from continuing to be a legislator, and thus, keeping the constituents happy. His theory states that because a legislator has the option of resigning from office, we assume he receives some utility from remaining in office. Thus, if the legislator failed to be reelected, he would suffer a loss of utility equal to the difference between being a legislator and then next best alternative. Essentially, the politician weighs the marginal costs and benefits of voting for his personal interests against those of his political interests. The higher the probability of a legislator casting the deciding vote in a policy decision is, the more he weighs his personal benefits relative to those of his constituency, *ceteris paribus*. Therefore, if the probability that the legislator will cast the deciding vote is high, then the politician will vote in order to maximize his personal benefits. Voting in a way that reflects preferences other than those of your constituents is known as shirking. If the probability that the vote will be the deciding one is lower, the legislator is more willing to vote in favor of his constituents and improve his chances of reelection. It is shirking which is expected to lead to larger size of government.

Contributing to the personal interests of legislators are special interest groups. It is for this reason, theoretically, that the size of government increases as shirking occurs. The influence of special interest groups comes into play when the probability that the legislator will cast the deciding vote in a policy decision is higher, as the politician seeks to maximize their personal interests. Mueller (1989) discusses this idea as he cites two previous studies (Mueller and Murrell 1985, 1986) that have established empirical evidence that interest groups affect the size of government. A political process exists whereby parties supply interest groups with favors in exchange for the interest group's political support. When these favors take the form of spending targeted toward a specific interest group, with only spillovers affecting others, government size increases. Using a cross-sectional sample of OECD countries in the year 1970, the number of organized interest groups in each country was found to have a positive and significant effect on the relative size of government.

Previous research into how the size of the state legislature affects government spending is based on the theory of the "Law of 1/n," put forth by Weingast, Shepsle and Johnsen (1981), which explains the model used when voting for distributive projects and how the size of the legislature affects the decision making process. Distributive projects are those which benefit only a specific geographic region, with costs that spread over the entire state through general taxes. The "Law of 1/n" states that, because the costs are divided between each district in the state, legislators will support spending as long as the benefits their region receives exceed their portion of the overall costs. Thus, theoretically, the larger the size of the legislature, the more spending will occur, because the costs are proportionally less to each district. This theory has been tested by Gilligan and Matsusaka (1995 and 2001), but they only found that this held in the upper house of the legislature. They did not see a significant correlation between the number of seats in the lower house and the state's spending and revenues. Note that these results were produced from state and local spending and revenue data, as opposed to this study, which uses only state figures.

The discrepancies between findings in the upper and lower houses imply that the number of legislative seats alone may not fully explain the relationship in question (Gilligan and Matsusaka 1995 and 2001). This paper explores a more precise way to measure the effects of legislature size on spending, revenue and shirking. Therefore, my study seeks to answer this: Does the probability of a legislator casting the deciding vote have an effect on shirking and the size of state spending and revenue?

2.2 Previous Research

Little research has been conducted to test Sobel's theory on legislative voting behavior. Sobel (1992) looked at legislative turnover rates as an indicator of whether or not a legislator was properly representing their constituents' interests. High turnover rates would suggest that legislators were not sufficiently representing the interests of their constituents and were subsequently not reelected to the office. Sobel used the natural log of the turnover rate as a proxy for legislative members' consistency with constituent preferences for his dependent variable. He included two independent variables as a proxy for the average probability that a legislator would cast the deciding vote in a policy decision; these variables were the reciprocal of the total number of members in the legislative body and the natural log of the percent of members belonging to the majority party. Election data from approximately 40 states for the years of 1980, 1984 and 1988 were included in the model. Ordinary least squares regressions were applied to each year's data separately and on a pooled data set. He found that the coefficient estimate for the probability of being the decisive voter was positive, as he had theorized. As the probability of casting the decisive vote increased, so did the turnover rate, indicating that legislators were shirking in their decisions. Also, he found that a 10 member increase in the body size caused a 2.29 percent decrease in the turnover rate, again consistent with the theory. As the size of the legislative body rose, the probability of casting the deciding vote decreased, and legislators voted in representation of their constituents interests instead of their personal interests. Sobel and Wagner (2003) tested the probability of a voter casting the deciding vote and the effects on government welfare expenditures.

They found that the relationship between welfare spending and the probability of being the decisive voter is, indeed, inverse. They attribute this to the theory behind expressive voting, which says that people are more charitable and willing to vote in ways that they feel are right but not necessarily reflect their own self-interest when the probability their vote will matter is lower. This supports the idea that personal interests will matter less when one does not feel that their vote will be the decisive one.

Several notable studies have been premised on the "Law of 1/n." Weingast, Shepsle and Johnsen (1981) developed a model based on the theory that the size of the legislature comes into play when determining spending. While government spending typically benefits the population of a small geographical area, the costs are distributed among the entire state through taxation. Therefore, they developed the model $b_i'(x) = (1/n)c'(x)$, where $b_i(x)$ is the benefit of spending x dollars in district i to the constituents of legislator i, n is the number of districts in the state, and c(x) is the total cost to the state from spending. Because the constituents of district i only pay 1/n of the cost, legislators are willing to support any spending up until this point. Gilligan and Matsusaka (1995) tested this theory using seven cross sections at five year intervals, beginning in 1960 and ending in 1990. Using a 48 state sample and expenditure figures from state and local governments, they tested the two way state and year fixed effects and reported the following. They found both seat coefficients to be positively correlated with expenditures, while finding the upper house coefficient was significant at better than the one percent level. The lower house coefficient proved insignificant. The results indicated that one additional seat in the upper house leads to an additional $9.87 expenditure per capita, with the magnitude of the effect appearing fairly robust. This lead them to conclude the main reason for the correlation was the problem associated with the common tax pool system used for distributed projects, which suggests that large legislatures increase spending more or less as representatives trade votes for their particularistic projects. While they conclude that legislators increase spending for their district's residents while the costs are distributed across the board, they carefully note that the lack of supporting evidence in the lower house raises questions for this interpretation.

Gilligan and Matsusaka (2001) again tested the "Law of 1/n" with data taken from state and local governments in the first half of the 20th century. While they found that the number of seats has a significantly positive effect on state and local expenditure and revenue during their sample years, it only held in the upper house of the legislature, and not the lower house. However, in the upper house, they reported that one additional seat corresponds with an increase in spending of 21.4 cents per capita. With a mean expenditure level of $56.15 per capita, this amounted to a 4.1 percent increase in spending. They note the consistency with their findings from the 1960-1990 period in the previously mentioned study. When testing the affects on state revenue, the results were even stronger. They consistently found an upper house coefficient that is positive and statistically significant. A one-seat increase in the size of the upper house corresponds with a 22.1 cent increase in per capita revenue. Due to concerns about the results in the lower house, which remain inconsistent with their theory and the upper house findings, they re-ran several equations under alternate specifications. The same results appeared in regressions that used expenditure and revenue as percentages of income instead of the per capita value as the dependent variable. With upper house coefficients in each specification appearing statistically different from zero at the 1 percent level, larger numbers of seats in the upper house corresponded with higher spending and revenue. Again, the lower house coefficient was insignificant. The results remained the same when the logarithms of the dependent variable were used. Thus, with the patterns remaining robust, they concluded that the more seats in the upper house of the legislature, the more the state will spend and tax, with no correlation to the lower house.

3. Empirical Analysis and Results

3.1 The Model

The dependent variable is, first, real per capita state expenditures and then real per capita state revenue. To determine the difference between the effects of the number of seats in the house, which has been previously tested, and the effects of the probability that the legislator will cast the deciding vote, which is only a function of the number of seats in the house, I include both variables in my regressions. Also, I use other economic controls as explanatory variables. The formal model comes from Gilligan and Matsusaka (2001):

$$G_{it} = \alpha + \beta Z_{it} + \delta P_{it} + \gamma X_{it} + e_{it,}$$

where G_{it} is the fiscal variable (spending or revenue) in state i in year t, Z_{it} is the number of seats in the lower and upper house and the probability of casting the deciding vote in the lower and upper house, P_{it} is a vector controlling for political variables, X_{it} is a vector of economic variables, e_{it} is the error term and α, β, δ and γ are the parameters being estimated.

My sample is annual data for 47 states over the period over of 1979 through 1999. Nebraska is unable to be used in the study because they have a unicameral legislature. In addition, Alaska and Hawaii are omitted as they are typically outliers and do not properly reflect the overall population. The sample mean for per capita expenditures and revenue was $2,490 and $2,564, respectively.

I estimated two models, the first using per capita state expenditures as the dependent variable, the other using per capita state revenue as the dependent variable. For each model, I estimated time fixed effects, state fixed effects, and finally both time and state fixed effects.

3.2 Independent Variables

As independent variables, I included the probability of casting the deciding vote in the upper house, the probability of casting the deciding vote in the lower house and the number of seats in the upper and lowers houses. My economic variables include real per capita income, percentage of the population over 65, per capita federal aid, the percentage of the population that is non-white, and the unemployment rate. I included the number of seats in the upper and lower houses to control for Gilligan and Matsusaka's (1995 and 2001) findings. The elderly population, per capita income and percentage of the population that is non-white are used to control for citizens' preferences. Unemployment rates control for state specific business cycles, which are not picked up by merely controlling for time fixed effects. While the fixed effects model would pick up general trends in the business cycle, state unemployment rates more accurately depict how each state was affected. Political controls included a dichotomous variable to indicate the majority party in the legislature. Additionally, the dynamic citizen and government political ideology indices developed by Berry *et al.* (1998) were used as regressors. These ideology scores range in value from 0, being the most conservative, to 100, being the most liberal. They attempt to control for unobservable citizen and government political tastes. Complete descriptions of the data and sources may be found in Table 1.

[Table 1 here]

3.3 Probability of being the decisive voter.

The probability of being the deciding voter (P) is a subjective probability and depends on how close the voter expects the election to be. I calculated the probability using the mathematical formula put forth by Mueller (1989, 350):

If N is even:

$$P= \frac{3e^{-2(N-1)(p/.5)^2}}{2\sqrt{2\pi(N-1)}}$$

If N is odd:

$$P= \frac{2e^{-2(N-1)(p/.5)^2}}{2\sqrt{2\pi(N-1)}}$$

where N is the number of voters participating in the vote and p is voter's expectation of the percentage of the votes his preferred choice will receive, in this case I used the percentage of the majority party in the house. P declines as N increases and p moves away from ½.

Table 2 shows the number of seats in the upper and lower houses for each of the included states. Notice that the size of the lower and upper house differ significantly and fluctuate greatly. Thus, depending on what state and house a legislator belongs to, there is quite a bit of variation in being the decisive voter.

[Table 2 here]

Because the *p* value is a voter's a priori guess that a given vote will pass, the true value is unknown in practice. Using the proportion of the majority party as the *p* value will not reflect this actual probability in each vote, but it is a reasonable representation of probability that legislation will pass when you consider a wide range of votes. This reasonable estimation is what is needed to calculate the probabilities in my study.

In calculating the probability of being decisive, the *p* value is important, as the proportion of the house the majority holds differs as widely across states as the number of seats. For instance, if a house was 65% democrat and 35% republican, the *p* value would then be .65, as it is an estimation of what percentage of the vote the preferred choice will likely receive. Just as the number of seats causes the probability of casting the decisive vote to change, this value causes much variation. For example, New Hampshire has 400 seats in the lower house. At a *p* value of .5, the probability of casting the deciding vote for that house is .029. In contrast, Nevada has only 42 seats in the lower house. With the *p* value of .5, their probability of casting the deciding vote is .093. In the case of Nevada, if the majority party makes up 55% of the house, then the probability of being the decisive voter is 0.0761 (at a *p* value of .55). However, if the majority party makes up 85% of the house, then the probability of casting the deciding vote is 0.000004 (with a *p* value of .85). Table 3 shows a range of possible probabilities.

[Table 3 here]

3.4 Results

Results from each of the six regressions are displayed in Tables 4 and 5. In Table 4, the dependent variable is real per capita state expenditures and in Table 5 the dependent variable is real per capita state revenue. Each Table shows the coefficient estimates for the independent variables in each model specification.

[Table 4 here]
[Table 5 here]

Theses results differ from Gilligan and Matsusaka's, in that I find the number of seats in the upper house to have an insignificant effect on spending or revenue in all but the time fixed effects specifications. Also, in the time fixed effects models I find the number of seats in the lower house to be significant at the 10% level or better. The coefficient for the number of seats in the lower house is negative, which implies that as the number of seats in the lower house increase, spending goes down. These results are consistent with Sobel's theory.

More importantly, my new independent variables of interest, the probability of casting the deciding vote in each house, appear to be significant and have the correct sign in many cases. In the time fixed effects specified regressions, both the probability of casting the deciding vote in the upper and lower houses have positive coefficients, while only that of the upper house is significant (at the 5% level) when regressing the variables against expenditures. We can see that with an increase in the probability of casting the deciding vote in the upper house of .1, per capita state expenditures increase by $65.50 and per capita revenue increases by $82.80. With revenue as the dependent variable, the probability of casting the deciding vote in the lower house is also significant (at the 10% level). Here, a .1 increase leads to a $59.60 increase in per capita revenue, *ceteris paribus*. The most significant results are in the time fixed effects models. This is probably because the number of seats and the majority party in each state legislature does not vary much with time.

In the state fixed effects models, I do not see any significant effects of probabilities on expenditures, but find that the probabilities of casting the deciding vote for both houses is once again significant, with both having positive coefficients. Here, a .1 increase in the probability of casting the decisive vote in the upper house leads to a $42.00 per capita revenue increase, and the same increase of the probability in the lower house will increase revenue by $50.60 per capita, *ceteris paribus*.

Finally, in the two-way fixed effects models, I once again find no significance when regressed upon expenditures, but find that a .1 increase in probability of casting the decisive vote in the upper house leads to $39.90 per capita increase in revenue, *ceteris paribus*.

In each regression, several economic variables remained consistently significant. Both per capita income and per capita federal aid are positively related to spending or revenue at the 1% level in all cases. Unemployment rates have a significant, positive effect on expenditures in each model, but only appeared significant when regressed on revenue in the state fixed effects model. The interests of voters are significant in several cases, with the percentage of the population over 65 having a positive coefficient in all but two regressions, although the coefficient sign varied. The percentage of the population who are non-white has similar results. The citizen and government ideology indicators have significant impact on revenue, but not spending. However, the citizen ideology measurement has a negative coefficient estimate, while the government ideology coefficient had a positive sign.

You may note that the probability of casting the deciding vote in the upper house is significant in more cases than the probabilities in lower house (it is significant in 4 of the 6 regressions). This is most likely due to the fact that the size of the upper house is much smaller than that of the lower house, which means that the probability of casting the deciding vote is higher in the upper house. This factor is consistent with Sobel's theory.

4. Conclusion

My empirical results strongly support Sobel's theory that, as the probability of casting the deciding vote in a policy decision increases, the size of spending and revenue increase. These findings remain consistent with the idea that if legislators believe their vote is more likely to count, they will shirk, and the size of spending will increase. I found the probability that a legislator will cast the deciding vote in a policy decision to be a significant factor in 4 of 6 regressions. Most often, it is the probability in the upper house that is significant more so than that of the lower house. This remains consistent with Sobel's theory, as the upper house typically has fewer seats, therefore having a higher probability of affecting the outcome of the vote.

To address the questions left by Gilligan and Matsusaka, I found that, in many models, my results contradicted their findings thus far. However, my results may differ because their study included state and local government spending, and I focused on state spending and revenue. That said, I found that not only did upper house seats not have a strongly significant impact on the size of government in 4 of 6 regressions, but that the number of lower house seats actually had a significant (in 2 regressions) and inverse effect on expenditures and revenue. This supports Sobel's theory over Gilligan and Matsusaka's findings. As the number of seats in the house increased, the probability of casting the deciding vote decreased, and so did the size of government, as Sobel indicated.

Therefore, this test of Sobel's theory on legislative voting behavior further supports his arguments, and finds that the concept of increasing benefits as costs are dispersed among districts did not hold in an empirical test. This implies that spending and revenue will vary greatly across states, and smaller legislatures will not translate into a reduction in the size of government.

Table 1 – Variable Descriptions, Summary Statistics and Sources (1979-1999)

	Mean (Std. Dev.)	Description	Source
Real per capita state expenditures	2490.6378 (666.1305)	State general fund expenditures.	*Statistical Abstract of the United States*
Real per capita state revenue	2564.9162 (714.1417)	State general fund revenue.	*Statistical Abstract of the United States*
Probability of being decisive voter, Upper House.	0.0332 (0.0312)	Number of seats and the proportion of majority party used to calculate. Mueller's (1989) formula employed	*Book of the States*
Probability of being decisive voter, Lower House.	0.0137 (0.0196)	Number of seats and the proportion of majority party used to calculate. Mueller's (1989) formula employed	*Book of the States*
Upper House Seats	40.2900 (10.1760)	Number of seats in the upper house of the state legislature.	*Book of the States*
Lower House Seats	114.4336 (55.0000)	Number of seats in the lower house of the state legislature.	*Book of the States*
Real per capita federal aid	684.1811 (257.1610)	Total federal aid to each state.	*Statistical Abstract of the United States*
Percentage of population over 65	12.1848 (1.8495)	Percentage of states' residents over the age of 65.	*Sobel and Wagner (2003)*
Real per capita income	21761.8853 (4265.6009)	Average income for residents of each state.	*Bureau of Economic Analysis*
Percentage of population Non-White	18.2678 (11.9769)	Percentage of the state's population who are of a non-white ethnicity.	*Statistical Abstract of the United States*
Unemployment Rate	6.2459 (2.1242)	State unemployment rate	*Bureau of Labor Statistics*
Government Ideology Index	49.9464 (22.9741)	Measure of government ideology [100=liberal; 0=conservative]	*Berry et all (1998)*
Citizen Ideology Index	47.5446 (14.7939)	Measure of citizen ideology [100=liberal; 0=conservative]	*Berry et all (1998)*
Democratic control	0.2786 (0.4485)	= 1 if the majority party in the legislature was Democrat, =0 otherwise	*Book of the States*
Republican control	0.1560 (0.3630)	= 1 if the majority party in the legislature was Republican =0 otherwise	*Book of the States*

Note: Nebraska, Alaska and Hawaii were excluded from the study. All real variables were deflated using GDP deflator in terms of 2000 dollars. State population figures were obtained from the Bureau of Economic Analysis.

Table 2 – Number of Seats in the State Legislatures (1999)

	Upper House Seats	Lower House Seats
Alabama	35	105
Arizona	30	60
Arkansas	35	100
California	40	80
Colorado	35	65
Connecticut	36	151
Delaware	21	41
Florida	40	120
Georgia	56	180
Idaho	35	70
Illinois	59	118
Indiana	50	100
Iowa	50	100
Kansas	40	125
Kentucky	38	100
Louisiana	39	105
Maine	35	151
Maryland	47	141
Massachusetts	40	160
Michigan	38	110
Minnesota	67	134
Mississippi	52	122
Missouri	34	163
Montana	50	100
Nevada	21	42
New Hampshire	24	400
New Jersey	40	80
New Mexico	42	70
New York	61	150
North Carolina	50	120
North Dakota	49	98
Ohio	33	99
Oklahoma	48	101
Oregon	30	60
Pennsylvania	50	203
Rhode Island	50	100
South Carolina	46	124
South Dakota	35	70
Tennessee	33	99
Texas	31	150
Utah	29	75
Vermont	30	150
Virginia	40	100
Washington	49	98
West Virginia	34	100
Wisconsin	33	99
Wyoming	30	60

Note: Nebraska has a unicameral legislature.

Table 3- Probability of Being the Decisive Voter

	p		
N	0.25	0.50	0.90
5	0.1210	0.2993	0.0555
10	0.0648	0.1995	0.0112
25	0.0041	0.1222	0.0000
50	0.0002	0.0855	0.0000
75	4.4E-06	0.0696	2.4E-12
100	2.5E-07	0.0602	1.0E-15

N - number of seats (or voters)
p - percentage of majority party in the house

Table 4 – Legislature Size and State Expenditures

	Fixed Time Effects	Fixed State Effects	Fixed Time & State Effects
Constant	1741.5021***	-1433.9878***	1565.9389***
	(183.4740)	(446.3581)	(589.3141)
Probability of being decisive voter - Upper House	655.4543**	360.7727	330.7742
	(268.7262)	(247.8095)	(238.3946)
Probability of being decisive voter - Lower House	48.0367	-22.5519	-287.3713
	(387.8343)	(357.0688)	(343.6086)
Upper House seats	3.2786**	1.6831	3.8248
	(1.6587)	(10.9694)	(10.6106)
Lower House seats	-1.8092***	-0.3315	-0.4342
	(0.2442)	(1.1260)	(1.0803)
Federal aid, per capita	1.1307***	0.9165***	0.6904***
	(0.0604)	(0.0567)	(0.0731)
% Over 65	-17.9653**	77.7770***	-42.5011
	(8.5679)	(22.0710)	(29.4017)
Income, per capita	0.0255***	0.0939***	0.0498***
	(0.0050)	(0.0046)	(0.8425)
% Non-white	-3.0917***	3.6873**	2.2850
	(1.2047)	(1.8295)	(1.7757)
Unemployment rate	9.6875*	19.8545***	9.3803*
	(5.9102)	(3.8295)	(5.3558)
Government ideology	0.9661**	0.2628	-0.0666
	(0.4375)	(0.3825)	(0.3840)
Citizen ideology	-0.2229	0.0643	0.5016
	(0.8820)	(0.7583)	(0.8252)
Democrat control	4.6246	5.3505	9.4946
	(16.9028)	(15.0135)	(14.7355)
Republican control	-43.3218**	19.9044	4.7754
	(21.8080)	(20.0606)	(19.7936)
Adjusted R^2	0.8353	0.9456	0.9514
Sample size		987	

() – Standard Error (corrected for heteroskedasticity)
*** - Coefficient is statistically significant for a two-tailed test with α=.01
** - Coefficient is statistically significant for a two-tailed test with α=.05
* - Coefficient is statistically significant for a two-tailed test with α=.10

Table 5 – Legislature Size and State Revenue

	Fixed Time Effects	Fixed State Effects	Fixed Time & State Effects
Constant	1496.9221***	-2095.0749***	1725.2781***
	(182.1477)	(421.1328)	(621.7079)
Probability of being decisive voter - Upper House	828.3091***	420.0595**	399.3187**
	(259.7873)	(206.4047)	(194.2735)
Probability of being decisive voter - Lower House	596.5005*	506.2122*	297.0211
	(369.7960)	(294.1590)	(275.7562)
Upper House seats	3.0707*	7.8014	12.9405
	(1.6418)	(9.1130)	(8.6307)
Lower House seats	-2.4914***	0.3690	0.2224
	(0.2378)	(0.9742)	(0.9221)
Federal aid, per capita	1.2606***	0.7857***	0.6118***
	(0.0582)	(0.0482)	(0.0610)
% Over 65	-9.4170	98.8746***	-55.0597*
	(8.3934)	(20.5853)	(31.2745)
Income, per capita	0.0355***	0.0988***	0.0395***
	(0.0049)	(0.0041)	(0.0083)
% Non-white	-2.8079**	2.1192	1.3469
	(1.1684)	(1.4925)	(1.4178)
Unemployment rate	-1.3602	8.8200***	-6.2482
	(5.6703)	(3.1629)	(4.3414)
Government ideology	1.5146***	0.7754**	0.0477
	(0.4171)	(0.3170)	(0.3117)
Citizen ideology	-2.1152**	-1.9225***	-1.8818***
	(0.8424)	(0.6246)	(0.6641)
Democrat control	-0.9258	-1.9332	-5.8214
	(16.1137)	(12.4015)	(11.9067)
Republican control	-43.4076**	9.8103	7.2402
	(20.8054)	(16.6760)	(16.1174)
Adjusted R^2	0.8165	0.9569	0.9611
Sample size		987	

() – Standard Error (corrected for heteroskedasticity)
*** - Coefficient is statistically significant for a two-tailed test with α=.01
** - Coefficient is statistically significant for a two-tailed test with α=.05
* - Coefficient is statistically significant for a two-tailed test with α=.10

References

Berry, W.D., E.J. Rinquist, R.C. Fording, and R.L. Hanson. (1998). Measuring citizen and government ideology in the American state. *American Journal of Political Science* 42(1): 327-348.

Gilligan, Thomas W. and John G Matsusaka. (2001). Fiscal Policy, legislature size, and political parties: Evidence from state and local governments in the first half of the 20th century. *National Tax Journal* 54 (1): 57-82.

Gilligan, Thomas W. and John G Matsusaka. (1995). Deviations from constituent interests: The role of legislative structure and political parties in the states. *Economic Inquiry* 33(3): 383-401.

Mueller, Dennis C. (1989). *Public Choice II. A revised edition of public choice.* Cambridge: Cambridge University Press.

Sobel, Russell S. (1992). Political incentives and legislative voting. *Journal of Public Finance and Public Choice* 10: 171-182.

Sobel, Russell S. and Gary A Wagner. (2003). Expressive voting and government redistribution: Testing Tullock's "charity of the uncharitable." *Public Choice,* forthcoming.

Weingast, B.R., K.A. Shepsle, and C Johnsen. (1981). The political economy of benefits and costs: A neoclassical approach to distributive politics. *Journal of Political Economy* 89 (41): 642 – 664.