

## **The political costs of tax increases and expenditure reductions: Evidence from state legislative turnover\***

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**Abstract.** This paper estimates the political costs of increasing taxes and cutting expenditures for members of a legislature. It is found that both costs are individually significant, but that they are not significantly different. This coincides with the first order condition for maximization of the probability of reelection. Republican legislatures have a higher political cost for taxes, thus the party's relative bias toward smaller government is founded in stronger constituent preferences against taxes, not for lower spending. Additionally, by being ideologically conservative, Republicans lower the political costs of taxes, while by being more liberal, Democrats lower the cost of cutting expenditures.

### **1. Introduction**

Models of the political process, such as Downs (1957), Niskanen (1971), and Becker (1983), have often assumed that legislators attempt to maximize electoral support. Even if reelection is not the primary factor motivation legislative behavior, it is still true that legislators react in predictable ways to the electoral costs and benefits of their choices.<sup>1</sup> Thus, legislators will favor policies that increase the probability of reelection over policies that lower it, *ceteris paribus*. When choosing taxes and spending in a manner that maximizes political support, a legislature will expand expenditures up to the point where the marginal political cost of increasing taxes rises to equal to the marginal political benefit from additional spending. If something in the legislature's budget constraint changes for the worse, however, and they must respond by adjusting taxes and expenditures, they will do so in the least costly manner. As an example, if a Federal Balanced Budget Amendment ever passes, Congress will face a situation in which they have to either raise taxes or cut spending. Prior knowledge of the relative political costs would

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help in predicting the extent to which Congress would rely on tax increases versus spending cuts to balance the budget. Another example is when state governments experience recessionary fiscal crises. When this happens, state legislatures must decide between allowing expenditures to fall and raising taxes. These are but two examples stressing the importance of the political cost of raising taxes versus that of cutting spending. The object of this paper is to provide actual empirical estimates of these political costs at the state-legislative level. This paper will also explore whether there are significant differences in the political costs of these policies between Republican and Democratically controlled legislatures and whether these costs are impacted by differences in party ideology.

## 2. Measuring the political cost of tax increases and spending reductions

Formal models of legislative behavior share the common feature that the political cost of a choice is how much it decreases the probability of reelection. This result is found in works such as Kau, Keenan, and Rubin (1982), Lott and Reed (1989), Dougan and Munger (1989), and Sobel (1992). To estimate the political cost of increasing taxes for a legislature, one needs to know how much this action actually lowers the probability of reelection for members of the body. The mean legislative probability of reelection is, by definition, one minus the actual turnover rate in the legislature. Thus, in a world of rational expectations, the *ex ante* expected political cost of a policy for a legislature can be found by estimating the *ex post* change in legislative turnover caused by the policy. When this analysis is performed over many types of policies, it becomes possible to compare the relative political costs of the policies and make predictions about which policies a legislature would be more likely to adopt.

In formal models of the political decision making process, political costs and political benefits are assumed to be two sides of the same coin. If a dollar of tax increases lowers the probability of reelection by a certain amount, then a dollar reduction in taxes would necessarily increase the probability of reelection by that same amount *at the margin*. In other words, the electoral support function is assumed to be continuous and first differentiable. Thus, the derivative of political support with respect to taxes (or spending) is the same for both marginal increases and marginal decreases. Under this assumption, one can use estimates of the political costs to infer about the political benefits as well. If the impact on the probability of reelection of a dollar in taxes is lower than the impact of a dollar in expenditures, a legislature may improve its overall probability of reelection by increasing taxes to fund expansions in expenditures.<sup>2</sup> Alternatively, if the impact on the proba-

bility of reelection of a dollar in taxes is higher than the impact of a dollar in expenditures, a legislature may improve its overall probability of reelection by cutting expenditures to fund tax reductions.

The logic discussed above forms the foundations for this analysis. Given that knowledge of these political costs is important in predicting of the types of government policies adopted by legislative bodies, this paper will provide estimates of these costs using data on actual legislative turnover. Because of the desirability of having many observations for tax increases and expenditure reductions, this paper uses state-level legislative data. This provides a nice cross section of observations that are variant enough to pick up the differences in turnover associated with different levels of tax increases and expenditure reductions. Data for both the lower and upper houses for all states in the 1990 elections are used for several reasons. First, 1990 was a year in which many states faces worsening budget situations that forced them to choose between tax increases and expenditure reductions. The use of recessionary period allows the observation of legislative reactions to an exogenous economic change (at least to the state legislature) that forces them to choose between two politically costly alternatives.<sup>3</sup> Using this data, estimates of these political costs will be obtained by supplementing the traditional model of state legislative turnover with variables reflecting the discretionary tax increases and expenditure reductions enacted by the state legislatures prior to the election.

### **3. Empirical models of state-level legislative turnover**

To isolate the impact of these policies on state legislative turnover one needs to control for other factors that might influence it. This paper adopts an underlying empirical model of legislative turnover based upon several previous empirical studies, notably Crain (1977) and Greene (1993). Crain's analysis of state legislative turnover was perhaps the first by an economist.<sup>4</sup> More recently another economist, Greene, expanded upon Crain's empirical model both across time and with additional variables.

Because the main focus of this paper is to isolate the impact of taxation and expenditures rather than to analyze the determinants of legislative turnover, I will forego much of the discussion of the results from the other variables. An economist interested in this issue, however, may find the results in this paper interesting as an update to the results from Greene, which end with the elections of 1986. While this paper will not discuss Green's model in detail, it will briefly summarize his variables and their theoretical importance in predicting legislative turnover.

Greene adds several variables to Crain's basic model. The variables adopted from Crain are derived from the view of incumbents as members of a political cartel. Under this scenario, cartel members can increase reelection rates by creating single-member districts that restrict competition among themselves. Additionally, the legislature can use its control of apportionment to increase incumbency reelection rates. Within this framework, the average district size and degree of one party domination also influence the ability of cartel members to increase their incumbency advantage. The new variables added by Greene to the empirical model relate to the attractiveness of remaining in office. His measures are: the legislative salary level, opportunities for advancement to higher office, and state revenues per legislative seat.<sup>5</sup> The dependent variable is the rate of turnover in the legislative body, which is the percentage of seats up for election not captured by incumbents. The complete list of variables from the Greene study, with a brief description of each, is given in the first part of Table 1. All variables are for the 1990 elections.

The major contribution of this article comes from the addition of variables to capture the effects of discretionary tax increases and expenditure reductions on legislative turnover. After controlling for the other factors influencing legislative turnover, it is possible to determine how much reelection rates in state legislatures were impacted by state fiscal decisions. Discretionary tax increases are defined as new tax revenues raised through either rate increases, base broadenings, or both. This does not include all changes in tax revenues, just those due to legislated changes in tax laws. Thus, for example, changes in state revenues due to changing state economic conditions are not included. Expenditure reductions are defined as reductions in state general expenditures from their real trend growth.<sup>6</sup> Both the tax increase and expenditure reduction variables are measured as a percentage of the state budget.<sup>7</sup>

This paper will use two empirical models to estimate the political impact of taxes and expenditures. The first of these, the "standard model," includes only the variables from Greene, while the second, the "expanded model," includes several additional variables that control for other factors which might influence legislative turnover and/or a legislature's fiscal policy choices. For example, to accurately capture the impact of tax and expenditure changes, it might also be important to control for the severity of the state economic situation. Voters in a state experiencing a severe economic recession may be more inclined to forgive their state legislature for having to raise taxes or cut expenditures. Alternatively, voters may blame the state legislature for the severe economic conditions and vote them out of office. While neither Crain nor Greene include variables reflecting state economic conditions, other studies of the national Presidential elections, such as Blackley and Shepard (1994), and of U.S. Congressional elections, such as Collier and Munger (1994), find

Table 1. Descriptions of variables

Variable	Definition and source
TURN	= the ratio of seats up for election not captured by incumbents <sup>a</sup>
A	= 1; when the legislature is not the apportioning agency <sup>b</sup>
PD	= the percent of districts that are multimember districts in those states that possess such districts <sup>b</sup>
ID	= the average number of seats in multimember districts where they exist <sup>b</sup>
D	= 1; the existence of multimember districts in a state <sup>b</sup>
V	= the population per district in millions <sup>a</sup>
DP	= the ratio of the seats held by the minority party to those held by the majority in states with multimember districts <sup>a</sup>
EP	= the same ratio in states without multimember districts <sup>a</sup>
DV	= interaction between D and V
SAL	= legislative salary in thousands <sup>a</sup>
OPP	= number of higher political offices per member <sup>a,d</sup>
RGS	= state general revenues per seat in billions <sup>a,d</sup>
UN	= state unemployment rate <sup>d</sup>
SOUTH	= 1; state in south census division <sup>d</sup>
NATIONAL	= absolute value of the difference in Republican vote share in 1990 U.S. House elections and share of seats in the state legislature prior to the 1990 elections <sup>a,d</sup>
IDEO	= ideology (liberalness) of the state legislature <sup>e</sup>
TAX90	= discretionary tax increases in fiscal year 1990 as a percent of the state budget <sup>c,d</sup>
TAX89&90	= discretionary tax increases in fiscal years 1989 and 1990 as a percent of the state budget <sup>c,d</sup>
EXP90	= amount by which expenditures were below real trend growth in fiscal year 1990 as a percent of the state budget <sup>d</sup>
EXP89&90	= amount by which expenditures were below real trend growth in fiscal years 1989 and 1990 as a percent of the state budget <sup>d</sup>

Note. See Greene (1993) for a more detailed description of the variables in the first half of the table.

Sources: <sup>a</sup>The Council of State Governments, *The book of the States*, various years. <sup>b</sup>National Conference of State Legislatures, unpublished data. <sup>c</sup>National Conference of State Legislatures, *State Budget and Tax Actions*, various years. <sup>d</sup>U.S. Census Bureau, *Statistical Abstract of the United States*, various years. <sup>e</sup>Erikson, R.S., G.C. Wright and J.P. McIver, *Statehouse Democracy*, Cambridge University Press, 1993.

that they are an important factor in explaining political turnover. These studies traditionally use the state unemployment rate as the measure of economic conditions. On the basis of this variable's wide usage in other works, I will employ it as well in the expanded model. The expected sign of this variable is, however, unclear given the conflicting effects it might have on legislative turnover as described above.

Several other variables are included in the expanded model that have not previously been included in economic studies of legislative turnover, but that might logically influence turnover and its relationship with tax and expenditure changes. The first of these is a dummy variable denoting states in the South. Political scientists have often included this variable because of the South's traditionally distinct political atmosphere. Second, pro-Democratic or pro-Republican national electoral trends may carry additional votes for the party at the state level. That is, a politician running in a state-level election may be able to gain votes from strong political support for their party at the national level. This is known in political science as the "coattail" theory of elections, and it has received mixed empirical support in that literature. The expanded model will include a variable defined as the absolute value of the difference in the Republican party's vote share in the 1990 U.S. House of Representative elections and their share of the seats in the state legislature prior to the 1990 elections. The sign of this variable is expected to be positive if the "coattail" theory is correct, reflecting that as the state's vote share for the Republican party in the 1990 national elections was very different (either high or low) from the party's composition in the state legislature, there was higher turnover in the state legislature.<sup>8</sup>

The last additional variable included in the expanded model is a measure of the ideological leaning of the state legislature. There are several ways in which the ideology of a legislature may impact turnover. First, in a dynamic median voter world, fringe ideologies (very conservative or very liberal) will result in higher turnover as the composition of the legislature will move back toward the middle through the attrition of ideologically fringe legislators. Second, the tax and expenditure variables count all dollars of taxes and spending as the same, regardless of which taxes (or spending programs) are cut or expanded. Including a variable measuring ideology helps control for any impacts that ideological differences in legislatures had on the mix of programs and taxes which were changed, as well as, any impact it had on the choice between tax increases and expenditure reductions. Third, omitting this variable might result in a spurious correlation between turnover and the fiscal variables because, for example, a very ideologically conservative legislature may have followed policies during its tenure that independently reduced its political support but it may have also relied more heavily on expenditure cuts to balance the budget during the recession. In this case, a spurious correlation between expenditure cuts and turnover would result if ideology is omitted from the regression. A final way in which ideology might be important is that it might reflect the legislature's stance on social issues, which might serve as substitutes in voters' utility for the legislature's fiscal choices. That is, if a legislature was enacting social policies consistent with voters' pref-

erences, the voters might not punish the legislature as much for increasing taxes.

The ideology index of Erikson, Wright, and McIver is used here. The index is based upon a survey of state legislators regarding philosophies on issues such as the death penalty, abortion, pollution regulation, gun control, teachers' unions, and the legalization of marijuana. Based upon the responses, they constructed an index for each state legislature's Republican and Democratic parties measuring their position on the liberal-conservative spectrum. Because this index is not based upon the tax and spending policies of the legislature (as are many other indexes) it will not spuriously capture their impact, which would result in the fiscal variables becoming insignificant. The index ranges from a low of -3.35 (most conservative) to 4.03 (most liberal) with zero denoting ideological neutrality. It is convenient to remember that the index increases in liberalness when trying to interpret the sign of the coefficient in the later regressions. In preliminary specification tests, this variable was included in several ways. First, a single variable reflecting the weighted average of the Republican and Democratic ideologies using their composition in the state legislature was included. Second, a single variable reflecting the ideology of only the majority party was included. Both of these were insignificant. It was decided that perhaps the electoral rewards to being conservative (or liberal) are different for Democrats and Republicans. Thus, as a final attempt, the ideology index of the majority party was split into two separate variables, one for Republican controlled legislatures, and one for Democratic controlled legislatures. Both variables turned out to be highly significant when included separately, and the models presented later in this paper use this split specification of the ideology variable.

An interesting implication from this exploration is that the ideology of the ruling party matters, not the ideology of the entire legislature. This would give support for the "tyranny of the majority" theory of the political process rather than a theory based on compromise between the parties. The impact of ideology on the political costs of fiscal choices (and how this cost differs between the two parties) will be returned to in a later section of the paper which explores this idea further. The complete list of new variables, including the ideology variable, added to those in the Greene study, with a description of each, is given in the second part of Table 1.<sup>9</sup> This list encompasses what I will call the "expanded model."

#### **4. Estimates of the political cost of tax increases and spending cuts**

First the regressions were run using just the variables included in Greene, the standard model. Then, additional specifications were run adding the expand-

ed set of independent variables. The fiscal variables are included in two ways; first, including just the amount for fiscal year 1990, and second, including the combined amount for both fiscal years 1989 and 1990.<sup>10</sup> Chow tests were performed to identify whether it was proper to pool both upper and lower legislative bodies (i.e., senates and houses) in one common regression. None of the F-statistics were statistically significant, implying the pooled specification was appropriate. This finding is interesting in itself because Crain and Greene estimate separate regression equations for the lower and upper bodies. In fact, Greene reports only the findings from the lower bodies. I find no statistical evidence to justify this separation for the 1990 elections. The F-values for this test are given in Table 2.<sup>11</sup>

Table 2. Empirical estimates of the political cost of tax increases and expenditure reductions

Variable	Coefficient estimate (Standard error)					
	Standard model			Expanded model		
Constant	30.37*** (3.89)	27.98*** (3.87)	27.92*** (3.84)	13.86 (12.36)	14.77 (11.91)	17.76 (11.90)
A	2.61 (3.19)	2.44 (3.17)	1.45 (3.25)	4.68 (3.39)	4.50 (3.35)	3.59 (3.48)
PD	0.50*** (0.20)	0.45** (0.19)	0.45*** (0.19)	0.71*** (0.25)	0.47* (0.25)	0.43* (0.25)
ID	1.06* (0.63)	0.90 (0.61)	1.02* (0.60)	1.70*** (0.66)	1.11* (0.67)	1.15* (0.66)
D	-5.93 (10.86)	-8.76 (10.54)	-11.90 (10.53)	-19.63 (12.22)	-17.34 (11.82)	-18.25 (11.70)
V	46.45 (46.84)	47.65 (45.30)	44.07 (44.71)	72.82 (49.86)	54.26 (48.49)	57.61 (47.96)
DP	-6.22 (9.26)	-5.30 (9.14)	-2.66 (9.03)	-2.67 (12.24)	2.78 (12.10)	5.39 (12.12)
EP	0.40 (6.09)	-0.41 (5.90)	-0.72 (5.83)	1.99 (8.62)	3.56 (8.32)	3.44 (8.27)
DV	-111.82 (80.75)	-82.58 (78.80)	-73.78 (78.18)	-75.02 (79.85)	-53.69 (77.33)	-53.23 (77.01)
SAL	-0.24** (0.12)	-0.28** (0.12)	-0.30*** (0.12)	-0.25** (0.13)	-0.25** (0.12)	-0.26** (0.12)
OPP	-17.29*** (5.99)	-14.85*** (5.85)	-14.71*** (5.76)	-22.43*** (6.08)	-19.22*** (5.97)	-18.90*** (5.93)
RGS	1.84 (22.76)	-0.37 (22.00)	0.69 (21.69)	-10.80 (24.24)	-3.77 (23.48)	-5.51 (23.23)
UN	-	-	-	2.17 (1.44)	0.71 (1.48)	0.06 (1.55)
SOUTH	-	-	-	5.22 (4.38)	7.07* (4.27)	6.44 (4.20)
NATIONAL	-	-	-	-0.05 (0.19)	0.04 (0.19)	0.07 (0.19)
DEM*IDEO	-	-	-	2.72** (1.32)	2.71** (1.27)	2.67** (1.26)
REP*IDEO	-	-	-	-4.08** (1.89)	-5.27*** (1.87)	-4.88*** (1.83)
TAX90	-	1.07* (0.57)	-	-	1.79** (0.77)	-
TAX89&90	-	-	0.86* (0.49)	-	-	1.48** (0.63)
EXP90	-	0.72* (0.41)	-	-	0.73* (0.43)	-
EXP89&90	-	-	0.75** (0.33)	-	-	0.71* (0.37)
F (house = senate)	0.643	0.462	0.410	0.020	0.042	0.068
F (tax = exp)	-	0.215	0.026	-	1.602	1.141
R <sup>2</sup>	0.289	0.353	0.371	0.400	0.460	0.468

Note. \* indicates significance at the 10% level, \*\* at the 5% level, and \*\*\* and the 1% level.

In every specification, the variables reflecting discretionary tax increases and expenditure reductions are statistically significant at least at the 10% level. This suggests that there are significant political costs to a legislature from adopting tax increases and also from cutting expenditures. Besides knowing that these fiscal actions carry significant political costs, it is also important to know whether they differ. The estimates suggest that a tax increase equal to one percent of the state budget would decrease the average legislator's probability of reelection by between 0.86 and 1.79, while a real expenditure reduction of the same magnitude would lower it by between 0.71 and 0.75. For comparison purposes, the average legislator faced a 73.20 percent mean probability of reelection in the elections of 1990. Given the average legislative body size, a decline of 0.80 in the average probability of reelection represent a loss of about one incumbent's seat. While the point estimates seem to suggest that the political cost of tax increases is larger than the cost of expenditure reductions, the difference is not statistically significant. The results of the F-test for the equality of the tax and expenditure coefficients are given in the table.

The findings that the political costs of tax increases is not significantly different from the political cost of expenditure reductions is supportive of models assuming that legislatures act as cartels to maximize the joint probability of reelection of the members. In formal models of the political process, the first order condition for the maximization of the aggregate probability of reelection is that these two costs are set equal at the margin. Thus, the finding above suggests that on average, state legislatures adjusted their taxes and expenditures during the recession in a manner consistent with the maximization of their probability of reelection. If it had been found that one of these costs was significantly higher than the other, it would suggest that the legislatures could further increase their aggregate probability of reelection by adjusting their mix of taxes and spending.

Before proceeding, it is worthwhile to discuss a few of the other findings from the regressions. First, the state unemployment rate is insignificant in all specifications. This appears contrary to the findings on the effect of economic conditions at the national level, but removes any concern about it being an important omitted variable in the Crain and Green studies. This finding would be consistent with the hypothesis that voters hold the federal, not the state, government responsible for recessions.

The dummy variable for South is significant in only one of the three specifications of the expanded model. Accepted at face value the positive coefficient estimate would suggest that legislatures in the South faced higher turnover after controlling for all other factors. The variable capturing electoral trends in party support at the national level is insignificant in all three specifications

of the expanded model. This result is not supportive of the coattail theory of elections which has received mixed results in past empirical studies. The most significant of the variables added in the expanded model are the ideology variables. Both are highly significant in all specifications of the expanded model. The coefficient estimates suggest that as Democratically controlled legislatures become more liberal that they have higher turnover, while as Republican controlled legislatures becomes more conservative that they have higher turnover. This finding is consistent with a dynamic median voter model, where political support declines as the legislature moves away from the median ideology in either direction.

The only other variables that consistently appear significant in the regressions are the percentage of districts that are multimember districts (PD), the number of seats in multimember districts (ID), the level of legislative salary (SAL), and the opportunity for advancement to higher office (OPP). These results are consistent with the findings for earlier election years in Greene and partially support both his and Crain's theoretical models. At the end of his study, Greene points to his low R-squares as evidence that turnover cannot be sufficiently explained. In light of this, it is noteworthy that the R-squares increase by about 25% with the inclusion of the fiscal variables alone, and by about 60% with the full set of new variables. This suggests that previous empirical studies of state legislative turnover have been partially misspecified by not including variables to reflect state fiscal policy prior to the election and the ideological leaning of the state legislature's majority party.

## **5. Differences in the political costs between Republicans and Democrats**

Also of interest is whether there are systematic differences in the political costs across legislatures due to the fact that one might be Democratically controlled while another is Republican controlled, or because one is a lower body (house) while another is an upper body (senate). A direct test of whether the political costs differ across lower and upper legislative bodies is to include interaction terms in the regressions. This result has, however, already been implicitly established by the failure to reject the equality of intercepts and slopes for the two bodies in the Chow test done earlier.<sup>12</sup> This implies that lower body and upper body politicians face essentially the same electoral costs for decisions on taxes and expenditures. This is a desirable finding because it implies that the bills passed by the different houses should be fairly similar. When both bodies favor similar proposals, the cost of resolving differences in bills between the bodies should be smaller.

To test whether there are significant differences between the political cost of tax increases and expenditure reductions for Democratically controlled legislatures and Republican controlled legislatures, the earlier models were estimated, allowing the Republican and Democratically controlled legislatures to have different coefficients. This was achieved by including two separate variables for tax increases, and two for expenditure reductions. For example, the tax increases variable was split to include one for tax increases in Democratically controlled legislatures (with Republican legislatures given a zero) and one for tax increases in Republican controlled legislatures (with Democrat legislatures given a zero). Splitting the variable in this way allows the separate estimation of the political costs for each type of legislature. These results are given in Table 3.

The results in the first set of columns are from the reformulation of the standard model, which includes only the limited set of variables found in the Greene study. In this standard model, the major difference that appears when the variable is split by political party control is the large increase in the estimated political cost of tax increases for Republican controlled legislatures. The coefficient estimate is more than triple its value in the pooled specification. The point estimates from the standard model suggest that the average legislator in a Republican controlled legislature faced about a 2.9 to 3.6 percentage point loss in his or her probability of reelection for raising taxes by one percent of the state budget. For the average sized legislature, this translates into loss of about 3 incumbent seats. F-tests for equality were performed for both the within party difference in political costs, and the difference between parties in the costs. The results of these tests are given at the bottom of the table. For the standard model, these tests show that Republican controlled legislatures have a significantly higher political cost for tax increases than Democratically controlled legislatures. They also show that the cost of tax increases is significantly higher than the cost of expenditure reductions for Republicans, while they are not statistically different for Democrats. These findings have important implications which will be explored in more detail after the results from the expanded model are discussed.

In a first reformulation of the expanded model, where the tax and expenditure variables were split by party, both coefficients were insignificant. Because the only major difference between the standard and expanded models was the ideology variable, a further exploration of the impact of ideology was warranted. To do this, interaction terms between the ideology variable and the tax and expenditure variables were added to the regression. The results from adding the interaction terms were that not only did the tax and expenditure terms become highly significant, but the interaction terms were significant

Table 3. Republican and Democratic differences in political costs

Variable		Coefficient (Standard error)							
		Estimate of cost from standard model		Expanded model				Cost including interactions evaluated at each party's average ideology	
				Coefficient on tax/exp (Cost controlling for party ideology – both neutral)		Coefficient on ideology interaction term			
Republican controlled legislatures	TAX90	3.56**	–	9.34***	–	3.29*	–	4.57*	–
		(1.54)		(3.22)		(2.03)		(2.42)	
	TAX89&90	–	2.90***	–	8.60***	–	3.78**	–	3.12*
			(1.05)		(3.10)		(1.82)		(1.60)
	EXP90	0.45	–	1.49	–	0.40	–	0.91	–
		(0.69)		(1.02)		(0.76)		(0.81)	
	EXP89&90	–	0.61	–	1.46*	–	0.36	–	0.93*
			(0.49)		(0.79)		(0.52)		(0.54)
Democratically controlled legislatures	TAX90	0.91	–	1.75*	–	-0.41	–	1.18	–
		(0.59)		(0.69)		(0.64)		(0.86)	
	TAX89&90	–	0.69	–	1.21	–	-0.12	–	1.05
			(0.52)		(0.79)		(0.58)		(0.75)
	EXP90	0.74	–	2.10***	–	-0.97**	–	0.77	–
		(0.47)		(0.79)		(0.40)		(0.53)	
	EXP89&90	–	0.85**	–	1.60***	–	-0.72**	–	0.62
			(0.38)		(0.60)		(0.34)		(0.44)
F (TAX = EXP) for Republicans		2.98*	3.83*	4.92**	4.78**			1.57	1.59
F (TAX = EXP) for Democrats		0.04	0.05	0.08	0.15			0.18	0.24
F (Republican = Democrat) TAX		2.83*	3.62*	5.23**	5.43**			1.72	1.46
F (Republican = Democrat) EXP		0.14	0.20	0.28	0.03			0.02	0.23

Note. \* indicates significant at the 10% level, \*\* at the 5% level, and \*\*\* at the 1% level.

as well. In addition, the R-squared in the regressions increases substantially from including the interaction terms. With interaction terms in the regression, the exact impact of tax and expenditure changes on turnover now depends upon the ideology of the legislature. The impact of taxes, for example, on turnover in Republican controlled legislatures is now given by the coefficient on the tax variable plus the coefficient on the interaction term multiplied by ideology. That is if:

$$\text{Turnover} = \alpha_1 * \text{Republican Tax} + \beta_1 * \text{Republican Tax} * \text{Republican Ideology},$$

then the marginal political cost of taxes for a Republican legislature is given by:

$$\text{MC}_{\text{RT}} = \alpha_1 + \beta_1 * \text{Republican Ideology}.$$

The impact of expenditure changes for Republicans, and tax and expenditure changes for Democrats are also defined in this manner. Thus, for example, the marginal political costs of taxes for a Democratic legislature would be:

$$\text{MC}_{\text{DT}} = \alpha_2 + \beta_2 * \text{Democratic Ideology}.$$

The final three columns in the table show the estimates from this model including these interaction terms. The first of the three columns shows the coefficient on the tax and expenditure variables (which would be  $\alpha$  in the above examples), while the second column shows the coefficient on the interaction term (which would be  $\beta$  in the above examples). The final column shows the combined impact (which is MC in the above examples) when the ideology variable is evaluated at its mean value *for that party*. If one were interested in estimating the costs when ideology is controlled for, then the correct comparison is between the  $\alpha$  coefficients that are given in the first column. This would be the cost when the ideology variable for both Republicans and Democrats was set to zero, which for this index represents ideological neutrality. Thus, the political cost of tax increases for an ideologically neutral Republican controlled legislature is a decline in the probability of reelection of between 8.6 and 9.3 percentage points, while for an ideologically neutral Democratic legislature the cost is between 1.2 and 1.75 percentage points. Comparing these estimates, the cost of taxes is significantly higher for a Republican controlled legislature than is the cost of expenditures. Additionally, the cost of raising taxes is significantly higher for a Republican controlled legislature than for a Democratically controlled legislature. Finally, the political cost of tax and expenditure changes are not significantly different from one another for a Democratically controlled legislature. These are the same conclusions reached earlier from the standard model.

The coefficients on the interaction terms (the  $\beta$ 's) are given in the middle column. These are important in their own right because they measure the

change in the political costs associated with the legislature becoming more ideologically liberal. Interestingly, the impact of ideology is significant on the tax side for Republicans, while on the expenditure side for Democrats. The more conservative is the Republican legislature, the lower the political cost of raising taxes, while the more liberal is the Democratic legislature, the lower the political cost of cutting expenditures. These findings are very interesting because they imply that party ideology may be driven by politicians' desire to remain in office. By being ideologically conservative, Republicans have a lower political cost of raising taxes, while by being ideologically liberal, Democrats have a lower political cost of cutting expenditures. There are several intuitive reasons why this might be true. First, competition between the two parties for voters occurs on both fiscal and ideological issues. When both parties are ideologically similar (the results in the first column of the expanded model) both face higher electoral costs of fiscal choices because voters find the two parties to be very close substitutes for one another. That is, the more liberal the Republican party, the easier it is for voters to switch to the Democratic party based upon the Republican party's fiscal choices. A more conservative Republican party can raise taxes without losing as many votes because they face less competition from the Democratic party who is not a very close substitute to voters.

Another potential explanation for this result is that the ideology variable captures the kinds of tax and expenditure changes the legislature makes. A given tax or expenditure change may carry different political impacts for a legislature depending upon which taxes or expenditure programs are changed. For example, a conservative Democratic legislature may be more likely to cut welfare spending than a liberal Democratic legislature. If Democratic voters care more about welfare programs then it seems reasonable that a more liberal Democratic party would lose less voters for any given expenditure cut. On the Republican side, more ideologically conservative tax changes might reasonably carry lower political losses.

A final explanation for this result is that ideology carries a lasting reputation with voters. A very liberal Democratic party may be punished less for cutting expenditures because voters know that the party would only cut expenditure if it was absolutely necessary (given their past record of big spending). On the other hand, a conservative Republican party might be punished less for raising taxes because voters know that the tax increases must have been a last resort (given their past record of low taxes). Viewed in the other direction, a liberal Democratic party may have expanded expenditures so much already that marginal cuts are not as important to voters, while conservative Republicans may have cut taxes so far that marginal increases are not as important to voters. Whatever the explanation, the interesting result is

that ideological conservatism on the part of the Republican party lowers their political costs, primarily on the tax side, while ideological liberalism of the Democratic party lowers their political costs, primarily on the expenditure side.

These results also have implications for the ideology that should be chosen by each party if they wish to maximize their political support. As mentioned earlier, the first order condition for the maximization of political support is that the marginal political cost of taxes and expenditures are equal. The final column in the table shows the estimated political costs when the ideology terms are evaluated at the actual mean ideology for each party. When evaluating the costs at this mean ideology it is found that in fact, the political cost of taxes and expenditures are not *significantly* different for either party. Thus, the actual ideologies of the parties are such that the Republicans have moved toward being more conservative to the point where they have maximized their political support, while the Democrats have moved toward being more liberal also to the point of political support maximization. Actually, given the point estimates, the optimal Republican ideology that equates the marginal cost of taxes and expenditures is between -2.09 and -2.72, which is just more conservative than the mean Republican legislature's actual value of -1.45, while the optimal Democratic ideology is between 0.63 and 0.65, which is just less liberal than the mean Democratic legislature's actual value of 1.37. Given the standard errors of these estimates, however, the marginal political costs of taxes and spending are not significantly different at the actual mean values for the parties.

Overall, the results found in Table 3 suggest several things. First, because the political cost of taxes is significantly higher for Republican controlled legislatures than for Democratically controlled ones, Republican controlled legislatures are less likely to increase taxes. Second, because the political cost of increasing taxes is significantly higher than the political cost of expenditure reductions for Republican controlled legislatures, they will be likely to favor reducing expenditures in order to fund tax reductions. Third, because the political costs of taxes and spending are the same for Democratically controlled legislatures, they should show no systematic preference for either.<sup>13</sup> The findings also suggest that it is constituent preferences, rather than party ideology, that leads Republicans to favor tax reductions more and spending increases less than Democrats. In fact, these results suggest that the parties' ideological stances may be driven by their desire to reduce the electoral losses associated with adverse changes in taxes and spending.

These results also have important implications for explaining the observed preference of Republicans for smaller government budgets. Their preference for smaller budgets must be founded in either a lower electoral benefit from

expenditures or a higher electoral cost of taxes. The above results suggest the latter. That is, the reason for Republicans favoring lower government size is not that they are rewarded less at the polls for spending money, it is rather that Republican constituents punish their legislators more for taxes.

During the elections of 1994 there were drastic changes in the composition of state legislatures. The Republican landslide gained them control of 18 additional state legislatures. Prior to the 1994 elections, 14 state lower bodies and 17 state upper bodies were in Republican control, while after the elections, 24 state lower bodies and 25 state upper bodies were in their control.<sup>14</sup> This shift in party control suggests that the state-level fiscal reactions to another recession will be quite different than they were during the 1990–1991 recession. The shift toward Republican control will mean heavier reliance on spending reductions, and less reliance on tax increases, in the face of future state fiscal crises. This will result in a massive change from the way that state legislatures handled the most recent recession, with the largest state-level tax increases in history. Through the entire recession almost \$35 billion in new taxes were raised through tax rate increases and base broadenings. Twenty billion of this total came in fiscal year 1992 alone.

As mentioned in the introduction to this paper, these results also have implications about the U.S. Congress' reaction to a Federal Balanced Budget Amendment. Should such an amendment ever pass, Congress would face a situation where they must either raise taxes, or reduce spending, to balance the budget. If these relative political costs of taxes and spending hold at the federal level, it could be concluded that a Republican Congress might rely more heavily on expenditure reductions to balance the budget, while a Democratic Congress might rely more equally on both. For the above result to be applicable to the U.S. Congress requires that voters punish their U.S. Congressmen in the same manner as they do their state legislators. That is, constituent's voting calculus must be equivalently affected by taxes and spending at the state and federal levels.

## 6. Conclusion

The political costs of a legislator's actions play a central role in models of the political process; such as Becker (1983), Kau, Keenan, and Rubin (1982), Lott and Reed (1989), Dougan and Munger (1989), and Sobel (1992). The attractiveness of a policy to a legislator depends crucially on how much it impacts his or her probability of reelection. This paper provides state-level empirical estimates of this political cost for discretionary changes in the levels of government taxes and spending. These estimates are important because

they provide insight into the policies more likely to be favored by the average legislator.

The results in this paper suggest that both tax increases and expenditure reductions carry significant political costs. There appears, however, to be no significant difference between the political cost of increasing taxes and cutting expenditures. This finding is consistent with models where legislatures act as cartels to maximize the joint probability of reelection of the members. When these costs are estimated separately for legislatures controlled by the Republican and Democratic parties, it is found that the political cost of taxes is significantly higher for Republicans. This suggests that the party's relative bias toward smaller government is founded in stronger constituent preferences against taxes, not constituent preferences for lower spending. Additionally, by being ideologically conservative, Republicans lower the political cost of taxes, while by being more liberal, Democrats lower the cost of cutting expenditures. Using the results of this paper to infer about the U.S. Congress, suggests that if a Federal Balanced Budget Amendment ever passes, a Republican Congress might rely more heavily on expenditure reductions to balance the budget, while a Democratic Congress might rely more equally on both.

## Notes

1. Parker (1989) has suggested an objective of maximizing discretion subject to a constraint of being reelected. Sobel(1992) has a model in which legislators attempt to maximize their utility and have an endogenous choice to shirk themselves out of office if it is in their best interest. In both of these alternative models, the political cost of a policy remains a major influence on its attractiveness to the legislator.
2. In a non-balanced budget framework, where the legislature may choose to use deficit financing, one would also need to know the political cost of borrowing funds. While all but one of the U.S. states is constrained by a balanced budget requirement, the U.S. Federal government is not. Thus, the applicability of these results to the U.S. Congress would become more accurate under a balanced budget amendment.
3. Additionally, all of the variables needed for the analysis are not yet available for the 1992 elections, making 1990 the most recent year for which all data was available.
4. Political scientists, however, have also been performing these studies. See, for example, David (1974), Shin and Jackson (1979), Niemi and Wilensky (1987), Calvert (1979), Squire (1988), and Oxendale (1979).
5. The reader may refer to Greene for a more complete discussion of these variables and their expected impacts.
6. The measurement of expenditure reductions as changes in the real or nominal level of expenditures would result in a serious coefficient bias. Legislators are rewarded or punished for changes from the status quo. For example, when public employees' salaries do not rise, the legislators will still feel political fallout even though there were no actual cuts. Additionally, public budget announcements are not done using a zero-base. Headline stories in the newspaper about cuts in spending are not about actual cuts in spending. A recent newspaper story, for example, mentioned a state having to make \$20 million in budget cuts. It failed to mention that these cuts were from the planned state budget,

which was \$60 million larger than the budget during the previous year. Thus a \$40 million increase in state expenditures was headlined in the news as a \$20 million budget cut. To account for this, expenditure cuts are measured as departures from the real trend growth in the state budget. This will capture the fact that zero growth in expenditures still carries electoral losses.

7. It is worth mentioning that these variables can take on negative values if a state either cuts taxes or has expenditures above real trend growth.
8. Alternative specifications of this variable, such as squaring it and splitting it by party rule, were also tried. It was insignificant regardless of how it was included. The results shown later are not sensitive to the way in which this variable is specified.
9. The lack of voting and ideology data for several states (AK, HI, NE, NV, CT) required their exclusion from the expanded model, they are, however, included in the standard model. For the House Republican vote share, the results from the open primaries, rather than the closed general election runoffs, were used for the state of Louisiana. Additionally, the House vote share in Vermont was troublesome because an independent candidate (Bernie Sanders) won a majority of the votes in the at-large election because Vermont has only a single Congressional district. Thus, the Republican vote share in the Senate election for the next closest election year (1992) was used. The Republican share is calculated out of the total Republican plus Democrat vote in the House elections in 1990 for the remainder of the states.
10. The political support function should theoretically be nonlinear, decreasing at an increasing rate with taxes and expenditures. In an attempt to capture this, the squares of both the tax and expenditure variables were included in an earlier specification. All of these higher order terms were insignificant, and their inclusion did not change the magnitude of the original variables. The specification reported in this paper is actually a linear approximation of the local political support function. It is the author's belief that there was not enough variance in the tax and expenditure values to obtain estimates of the nonlinear properties of the equation.
11. The null hypothesis for this test is common intercepts and slopes between houses and senates. Because this hypothesis cannot be rejected there is no need to perform independent tests for common slopes or a common intercept. Given this finding of a common intercept and common slopes there is no need to include a dummy variable denoting houses, and there is also no reason to include interaction terms for the fiscal variables. This, of course, implies that the political costs do not differ across the bodies, a result that is discussed in more detail later in this paper.
12. Regressions using interactions, of course, yielded the same results. For a better explanation see note 9.
13. In 1990 there were 11 states who had split control of their legislatures. In most cases, the lower house was controlled by Democrats while the upper house was controlled by Republicans. In these cases, one would expect high costs of passing legislation given the different preferences for taxes and spending across the two legislatures.
14. Control of a legislature is defined as a party having a majority of the seats occupied by the two major parties. Prior to the 1994 elections, 34 lower bodies were in Democratic control, 14 in Republican control, and 1 was evenly split; for upper bodies, 30 were in Democratic control, 17 in Republican control, and 2 were evenly split. After the 1994 elections, 23 lower bodies were in Democratic control, 24 in Republican control, and 2 were evenly split; for upper bodies, 24 were in Democratic control, 25 in Republican control, and none were split. The data used in the empirical model for this paper are for 1990, prior to the election. At that time, 37 lower bodies were in Democratic control, 12 in Republican control, and none were split; for upper bodies, 32 were in Democratic control, 17 in Republican control, and none were split. The total number of lower bodies here is 49, and the total number of upper bodies is also 49. This is because Nebraska has a unicameral legislature, and that single body is nonpartisan.

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