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The impact of tax rates, political partisanship and economic variables on the distribution of state and local tax burdens

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ABSTRACT

This study finds that the effective state and local tax rate for the top 1% of income households as a percentage of the effective state and local tax rate for the bottom 20% of income households in 2002 is significantly influenced by whether a state has a multi-rate income tax, right-to-work laws, the liberalism of a state's electorate, the average tax burden in a state and past tax policy. Democratic Party strength in state government, Republican or Democratic Party institutional control of state government, change in real per capita income, a Democratic Governor and the change in the share of income going to the top 1% of income households are not significant predictors. The empirical results are identical for the top 2–5% of income households to the bottom 20% of income households.

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1. Introduction

Over the past three decades income inequality in the United States has widened considerably. As Greenstein and Shapiro (2003) note, during the 1979–2000 time period the average after-tax income of the top 1% of income households increased by 201%, while the corresponding increases for the middle fifth and bottom fifth of income households were 15% and 9%, respectively. This increasing share of after-tax income accruing to the top 1% of households has led to the greatest disparity in incomes in the United States in the last 50 years (Piketty & Saez, 2007). The relative tax burdens between income groups is one of the major ideological differences between the Democratic Party and the Republican Party.

Since citizens live on after-tax income, the distribution of the tax burden can be an important method of changing relative living standards resulting from the pre-tax distri-

bution of income. While many factors impact the degree of after-tax income inequality, one policy measure that has received insufficient attention in the literature is the way in which state and local governments distribute their tax burdens according to a household's ability to pay. Table 1 lists the average state and local tax rate for the top 1% of income households as a percentage of the average state and local tax rate of the 20% of households at the bottom of the income distribution for the years 1989 and 2002. A state percentage greater than 100 indicates a progressive tax system, a percentage less than 100 indicates a regressive tax system and a percentage equal to 100 characterizes a proportional tax system.

As Table 1 indicates, states vary noticeably in the relative tax burdens they place on their citizens. In the most progressive tax state Delaware, the effective state and local tax rate of the top 1% of income households was 102% of the effective state and local tax rate of the bottom 20% of income households in 2002. In the least progressive tax state Washington, the effective state and local tax rate of the top 1% of income households was 59% of the effective state and local tax rate of the bottom 20% of income house-

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Table 1

Effective state and local tax rate of the top 1% of income households as a percentage of the effective state and local tax rate of the bottom 20% of income households for 1989 and 2002.

State	1989	2002	State	1989	2002
Alabama	41.6%	35.8%	Montana	88.2%	85.2%
Alaska	89.1	65.7	Nebraska	92.8	62.7
Arizona	51.9	39.2	Nevada	21.5	21.7
Arkansas	62.5	54.2	New Hampshire	46.4	23.5
California	76.2	63.7	New Jersey	40.7	47.6
Colorado	57.6	44.4	New Mexico	66.0	52.1
Connecticut	37.5	43.1	New York	61.4	51.6
Delaware	115.6	102.1	North Carolina	76.8	57.5
Florida	20.0	18.8	North Dakota	29.4	50.0
Georgia	56.5	45.3	Ohio	78.3	61.5
Hawaii	74.1	46.0	Oklahoma	47.7	47.5
Idaho	78.3	62.9	Oregon	90.3	64.9
Illinois	39.1	35.1	Pennsylvania	39.1	30.7
Indiana	48.6	40.1	Rhode Island	52.3	46.2
Iowa	64.1	54.7	South Carolina	77.5	69.6
Kansas	54.7	49.6	South Dakota	25.8	21.0
Kentucky	59.0	57.1	Tennessee	26.0	25.6
Louisiana	39.5	42.6	Texas	28.3	28.1
Maine	74.7	68.0	Utah	59.4	48.2
Maryland	65.5	54.3	Vermont	112.3	71.0
Massachusetts	67.0	49.4	Virginia	60.5	53.3
Michigan	61.8	37.6	Washington	21.6	17.6
Minnesota	72.6	61.0	West Virginia	68.0	69.9
Mississippi	53.7	53.0	Wisconsin	86.8	57.8
Missouri	49.5	53.5	Wyoming	40.0	21.1

Calculated from Citizens for Tax Justice (2003).

holds in 2002. In 2002, the mean (average) effective state and local tax rate for the top 1% of income households was 49% of the effective state and local tax rate of the bottom 20% of income households and in 1989 the mean was 59%. Thus, the mean state and local tax burden of the top 1% of income households relative to the state and local tax burden of the bottom 20% of income households declined by nearly 17%, over the time period 1989–2002.

A large increase in income inequality might be expected to trigger governmental attempts to reduce it, especially when the income gains are disproportionately concentrated on a relatively small group at the top of the income distribution. State governments have a wide variety of both tax and spending policies that can change the absolute and relative living standards of various income groups. Since, by definition, redistributive policies change the distribution of economic benefits and tax burdens between income groups, each political party tends to promote tax policies that reward its own core supporters. If this were not the case, voters would likely switch parties.

A substantial literature in political behavior finds that the average income of Democratic Party voters is lower than the average income of the Republican Party voters (e.g., Hershey, 2009; Stonecash, Brewer, & Mariani, 2002). Since Democratic Party voters typically have lower incomes than Republican Party voters do, we would expect greater Democratic Party strength in state government to be associated with redistributive tax policies that favor lower income groups. Conversely, we would expect greater Republican Party strength in state government to be associated with greater tax redistribution toward upper income groups (or less redistribution in favor of lower income groups).

The purpose of this paper is to examine the impact of a state's partisan political environment (i.e., Democratic Party and Republican Party strength and control of the Governorship and state legislature) and economic variables on the distribution of state and local tax burdens grouped on the basis of their incomes (not wealth). Since the income gains during the past three decades have gone disproportionately to those in the top 1% of income households and since households at the bottom of the income distribution are the most vulnerable to the business cycle, this study uses a "top/bottom" ratio – the ratio of state and local taxes as a percentage of income of the top 1% of income households to the corresponding figure for the bottom 20% of households – to measure inequality in state and local tax burdens. More encompassing inequality measures, such as the Gini ratio, measure inequality over the entire income distribution. Since this study is concerned with income inequality at the extremes of the income distribution, we use a "top/bottom" ratio of state and local tax burdens. As discussed in the next section, our measure of state and local tax burdens is best captured for the years 1989 and 2002 which is the time period of this study.

This study complements and extends the literature in a number of important and significant ways. (1) This is the first study to explore the impact of the increasing share of income in the top income brackets on the distribution of state and local tax burdens at the extremes of the income distribution. (2) This is also the first study to examine the impact of the average tax burden in a state on the distribution of state and local tax burdens. (3) This study uses a more recent time period (1989–2002) than previous studies. This is important because the period 1989–2002 exhibited a marked increase in the income

inequality between the top 1% of households and the bottom 20% of households. This permits us to examine whether prior research findings of earlier time periods are robust using more current data.

2. Literature review and model

Previous literature suggests three categories of independent variables that influence the progressivity of state and local tax burdens: political environment, tax policy history and economic variables (Berch, 1995; Chernick, 2005; Dennis, Moore, & Somerville, 2007; Lowery, 1987). The dependent variable in this study is the degree of tax progressivity as measured by the effective state and local tax rate of the top 1% of income households as a percentage of the effective state and local tax rate of the bottom 20% of income households (i.e., the ratio of state and local taxes to income of the top 1% of households as a percentage to the corresponding figure for the bottom 20% of households) for 2002.

2.1. Political environment variables

The independent variables of particular interest are the political environment variables. Four different measures of a state's partisan political environment are used in this study and each is estimated separately in the regression model.

Prior research suggests that Democratic legislators are more supportive of tax progressivity than are Republican legislators (e.g., Dennis et al., 2007). Democratic control of both houses of the state legislature and the Governorship should be associated with greater state tax progressivity. Conversely, Republican control of state government should be associated with a less progressive state tax system. The longer the Democrats (Republicans) control all the branches of state government the greater (lesser) the likelihood of a state's tax system becoming more (less) progressive. Accordingly, this study uses the percentage of years a state had both a Democratic Governor and Democratic majorities in each house of the state legislature during the 13-year period 1989–2001 as the measure of Democratic Party control of state government (*% Democratic Control*). A similar variable (*% Republican Control*) measures Republican Party control.

We also use Berry and Berry's (1992) alternative measure of Democratic Party political strength in a state's government. Average Democratic Strength is calculated by treating the Governor and the legislature equally (i.e., both are 50%) and both chambers of the legislature are also treated equally (i.e., each chamber is worth 25%). Thus, Average Democratic Strength in a state is calculated as follows: Average Democratic Strength = $(1/2)\text{Governor} + (1/4)\text{Upper Chamber} + (1/4)\text{Lower Chamber}$, where Governor equals 100% if the state has a Democratic Governor; Upper Chamber equals the percentage of the Upper House who are Democrats; Lower Chamber equals the percentage of the Lower House who are Democrats. For example, a state with a Democratic Governor, 60% of the Upper Chamber being Democratic and 52% of the Lower Chamber being Democratic would receive a score of 78% $\{50\%$ for the

Democratic Governor + 15% $\{(.25)(60) = 15\}$ for the Upper Chamber + 13% $\{(.25)(52) = 13\}$ for the Lower Chamber}. Average Democratic Strength is a percentage that ranges from 0 (all state legislators and the Governor are Republicans) to 100 (all state legislators and the Governor are Democrats) in any year and is averaged for each state over the 13-year period 1989–2001.

A state's Governor is often the catalyst of a state's legislative process. Berch (1995) used the number of years a state had a Democratic Governor as a predictor of the tax progressivity of a state. In order to keep the metric of the gubernatorial measure consistent with the other political variables in this study, this study uses the percentage of years a state had a Democratic Governor over the 13-year period 1989–2001 (*% Democratic Governor*). The longer a Governor was a Democrat the greater the capability to increase the degree of state tax progressivity.

The public choice and political science literature (e.g., Erikson, MacKuen, & Stimson, 2002; Peltzman, 1984) find that public officials take the ideological views of their constituents into account when enacting public policy. The relative liberalism or conservatism of a state's electorate is likely to influence state policy. Erikson, Wright, and McIver (1993) find that, the more liberal (conservative) a state's electorate, the more liberal (conservative) the policies of that particular state. In terms of the distribution of state and local tax burdens, the more the liberal (conservative) the electorate, the higher (lower) the relative tax burden that should fall on the top 1% of income households in a state. Following Erikson et al. (1993) this study uses the percentage of those surveyed in the annual CBS/New York Times Poll who identify themselves as liberal minus the percentage who identify themselves as conservative averaged over the 10 year period 1990–1999 (*Liberalism of the Electorate*).

While public officials may be influenced by the public's ideology, they also respond to the demands of strong interest advocacy groups. Two such interest advocacy groups are labor unions that generally prefer more progressive tax systems and business interests that prefer less progressive tax systems. The measurement of the absolute strength of each group is subjective and problematic. Berch (1995) has suggested one way of measuring the relative strength of each is the presence or absence of a right-to-work law in a state. State right-to-work laws weaken labor union power by eliminating the requirement that workers must join a union as a condition of employment. Berch (1995) finds that union political success (the absence of right-to-work laws) is positively associated with state tax progressivity. This study measures relative labor union strength by a dummy variable (*Right-to-Work Law*) equal to 1 if a state has a right-to-work law and 0 if a state does not have a right-to-work law. It is expected that the stronger business interest groups are relative to labor union groups the more likely a state will have a right-to-work law and concomitantly the less progressive a state's tax system.

2.2. Tax policy history

Lowery (1987) argues that, because of structural impediments, there is some inertia in changing a state's tax

system. States that initially adopted progressive tax systems would be expected to continue to rely on that type of tax system, even over an extended period of time. In other words, a state's current tax policy is a historical function of its past tax policy. A measure is needed that incorporates the impact of past state tax policies at the beginning of the time period of study. Berch (1995) used the distribution of state and local tax burdens in 1985 (the earliest year of the study) to predict the distribution of state and local tax burdens in 1990 (the last year of the study). Accordingly, this study uses the 1989 effective state and local tax rate of the top 1% of income households as a percentage of the corresponding figure for the bottom 20% of income households as a control variable (1989 Tax Burden – the earliest year of this study). By including this control variable, the causality between the 2002 state and local tax burden and the other independent variables in the model can be more accurately determined.

In states that have no income tax or a single income tax rate, it is both politically and administratively difficult to make their tax systems more progressive (Hansen, 1983). Politically, it is easier for states that have multiple income tax rates to increase their progressivity by increasing their tax rates and/or decreasing the size of their income tax brackets (Berch, 1995; Hansen, 1983). Hence, this study uses a dummy variable equal to 1 to control for a state that has a multi-rate income tax rate and 0 for a state that has either a single income tax rate or no income tax (*Multi-Rate Income Tax*).

2.3. Economic variables

The magnitude of the average effective state and local tax rate could have an important impact on the distribution of the state and local tax burdens. The smaller the average state and local tax rate, the less “costly” progressive taxation is to income groups above the median. Citizens of above average income might be more likely to support paying a higher relative state and local tax burden if taxes are 5% of their income than if their taxes are 25% of their income. To control for this possibility, we include a state's average tax rate in 2002, which was calculated as the weighted average of the percentage of income paid in state and local taxes by households in seven different income groups (i.e., top 1%, 2–5%, 6–20%, 21–40%, . . . , lowest 20%), weighted by that particular income group's proportional share of the state's population in 2002 (*Average Tax Rate in 2002*).

Thurow (1980) argues and Berch (1995) and Lowery (1987) find that voters are more willing to accept more progressive tax systems the greater the growth of their income over time. This study includes the percentage change in real per capita income in a state over the period 1989–2001 as an independent variable ($\% \Delta RPI$). The greater the percent increase in real per capita income the more progressive a state's tax system is likely to be.

In addition to economic factors within a state, economic conditions from bordering states could influence a state's tax progressivity. Following Chernick (2005), the distribution of the state and local tax burden of border states was calculated by weighting the ratio of state and local taxes

as a percentage of income of the top 1% to the bottom 20% of households of each bordering state by the percentage of that state's population to the total population of the bordering states (*Border States*).

Changes in the share of income going to a particular income group over the period 1989–2001 may change the relative tax burden state officials' impose on that group. For example, given the large increase in the relative share of income going to the top 1% of income households during the 1989–2001 period, either because of “fairness” or the political resentment of those whose incomes have been growing at a considerably slower rate, state officials might be more willing to increase the relative tax burden on the top 1% of income households. Furthermore, the smaller numerical size of the top 1% of households might make it easier to increase their income tax rates than on the numerically larger bottom 20% of households. Accordingly, this study uses as a measure of the relative political vulnerability of the top 1% of households the percentage change in the share of income going to the top 1% of income households over the 1989–2001 period ($\% \Delta \text{Share of Income of Top 1\%}$).

3. Data

The data on the distribution of state and local tax burdens by income groups are from the Citizens for Tax Justice (2003) and are available for both 1989 and 2002. While the Citizens for Tax Justice has calculated state and local tax burdens by income groups for other years, only the 1989 and 2002 data are calculated by the same methodology. Because the methodology was identical for both years, differing results cannot be the product of different methodologies. Since states often treat elderly households differently than non-elderly households for tax purposes, the data are for non-elderly singles and couples with and without children. As taxpayers receive a deduction for state taxes paid on their federal income tax, the measure used in this study includes federal offsets for state taxes. However, as data including federal deductions for state taxes are almost perfectly correlated with data excluding federal deductions for state taxes (.97 or higher), choice of an indicator makes little difference. The Citizens for Tax Justice data have been used in a number of studies on state and local tax burdens by income class (Berch, 1995; Chernick, 2005; Dennis et al., 2007; Morgan, 1994).

Political control and political strength variables were calculated from various editions of the *Book of the States* and the *Statistical Abstract of the United States* (2003). Gerald C. Wright supplied the state ideology data. Change in real per capita income was from the Bureau of Economic Analysis. Whether a state had a multi-income tax rate, a single income tax rate or no income tax was from the Citizens for Tax Justice (2003). Data on the percentage of income going to the top 1% of income households in 1989 and 2002 was from Sommeiller (2006). The relative tax burdens for neighboring states was calculated from the Citizens for Tax Justice (2003).

4. Empirical results

Before reporting the empirical results, it is important to mention three statistical concerns. As with any econometric analysis three obvious concerns are (i) multicollinearity, (ii) heteroscedasticity, and (iii) the presence of a lagged endogenous variable. To test for multicollinearity, a variance inflation factor (VIF) analysis was computed. None of the independent variables had a variance inflation factor of over 3.3 when 10 is considered the threshold for a severe multicollinearity problem (Gujarati, 1995, p. 339). Using the Breusch-Pagan test, the null hypothesis of homoscedasticity could not be rejected at the .05 level of significance for any of the empirical results reported in this paper. Because the data are not annual observations for the years 1989 through 2002, the relative tax burden in 1989 is better thought of as an initial condition or control variable rather than as a lagged endogenous variable (William Greene, 2010 personal communication).

Table 2 shows the empirical results of the previously discussed model with the dependent variable being the effective tax state and local tax rate for the top 1% of income households as a percentage of the effective tax state and local tax rate of the bottom 20% of income households in 2002. A positive (negative) sign for a regression coefficient means that, *ceteris paribus*, that independent variable is associated with a more progressive (less progressive) state and local tax system in 2002. Because the relative importance of the partial regression coefficients cannot be directly compared because they are measured in different units, we converted the partial regression coefficients into beta coefficients (units of standard deviations).

4.1. Impact of political environment variables

Over the period 1989–2002, a state's partisan political environment has little effect on the incidence of tax progressivity. Not one of the four measures of the partisan composition of a state's political environment – Average Democratic Strength, % Democratic Control, Democratic Governor, % Republican Control – has a statistically significant influence on a state's tax progressivity. Over the period 1989–2002, states in which the same political party controlled the Governorship and both houses of the state legislature were no more likely to increase their state's tax progressivity than states in which control of state government was divided between the two political parties. Furthermore, a Democratic Governor had no significant effect on a state's tax progressivity.

The more liberal a state's electorate the less progressive its tax system became over the period 1989–2002. The negative relationship between the liberalism of a state's electorate and the incidence of tax progressivity was statistically significant in each model. This result, which may seem paradoxical, may be due to how respondents answered the CBS/New York Times Poll survey question "Would you describe your political philosophy as liberal, moderate or conservative." Our measure of the liberalism of a state's electorate is the percentage of respondents identifying themselves as liberal minus the percentage identifying themselves as conservative averaged over the

1990–1999 period. During the 1990–1999 period many respondents, when asked their political philosophy, may have answered on the basis of cultural issues instead of economic issues (Bartels, 2008). Since the 1980s, cultural issues became more important relative to economic issues in influencing which party a voter supports (Bartels, 2008). The increasing relative importance of cultural issues has been more pronounced in the upper one-third of the income distribution, precisely those voters least supportive of tax progressivity (Bartels, 2008). Therefore, over the 1989–2002 period, self-reported liberalism may have increasingly included voters who desired less, not more, tax progressivity. Thus, finding that state electoral liberalism is negatively associated with state tax progressivity is not as surprising as might first be thought.

The empirical results for the state right-to-work variable strongly supports the hypothesis that powerful business interest groups do influence tax progressivity. State right-to-work laws have a statistically significant negative impact on the progressivity of state and local tax burdens. Over the period 1989–2002, the tax burdens of states with right-to-work laws became less progressive relative to states without right-to-work laws.

4.2. Impact of tax policy history

A state's tax progressivity in 1989 is one of the most important determinants of its tax burden progressivity in 2002. The more progressive a state's tax system was in 1989, the more progressive its tax system in 2002. In addition, a state with a multi-rate income tax system had a more progressive tax system in 2002 than states without a multi-rate income tax system. These two results suggest that a state's prior tax policy plays a significant role in determining the degree of tax progressivity over time.

4.3. Impact of economic variables

The percentage change in real per capita income, the percentage change in the share of income going to the top 1% of income households and the distribution of the state and local tax burdens in bordering states were all statistically insignificant. This suggests that, over the period 1989–2002, (1) tax policies of bordering states did not induce policymakers to rely on a less progressive tax system; (2) the top 1% of income households were not asked to bear a greater relative tax burden even though their incomes were growing larger relative to other income groups; and (3) the real income growth of households was not associated with a movement toward a more progressive tax system.

The average tax rate is negatively signed and statistically significant in every equation. The higher the average tax rate in a state the lower the likelihood that the top 1% of income households incurred a greater relative tax burden over the period 1989–2002. This finding suggests there is a tradeoff between the *average* tax rate and the *distribution* of state and local tax burdens: the *greater* a state's average tax rate, the *less* progressive a state's tax system.

Ferguson (1995) has argued that because both major American political parties receive large campaign contri-

Table 2

The impact of political and economic variables on the effective state and local tax rate of the top 1% of income households to the bottom 20% of income households in 2002 (standardized coefficients).

	(1)	(2)	(3)	(4)
1989 Tax Burden	.603 (7.72)	.612*** (7.83)	.597*** (7.89)	.584*** (7.55)
Multi-Rate Income Tax	.378*** (5.32)	.365*** (5.08)	.387*** (5.39)	.378*** (5.47)
Average Democratic Strength	.048 (.79)	–	–	–
% Democratic Control	–	.038 (.63)	–	–
% Democratic Governor	–	–	.034 (.58)	–
% Republican Control	–	–	–	–.102 (1.62)
Liberalism of the Electorate	–.218** (2.29)	–.209** (2.21)	–.220** (2.32)	–.207** (2.25)
Right-to-Work Law	–.212** (2.42)	–.211** (2.40)	–.232*** (2.73)	–.195** (2.26)
Border States	.030 (.44)	.022 (.35)	.020 (.32)	.062 (.91)
% Δ RPI	–.044 (.66)	–.047 (.70)	–.046 (.71)	–.023 (.36)
% Δ Share of Income of Top 1%	–.053 (.78)	–.056 (.81)	–.059 (.88)	–.074 (1.14)
Average Tax Rate in 2002	–.122** (2.02)	–.125** (2.08)	–.125** (2.12)	–.133** (2.26)
Constant	24.131** (2.09)	27.002** (3.01)	27.525** (3.24)	27.537*** (3.13)
Adj. R ²	.86	.86	.86	.87

Absolute value of *t*-statistics in parentheses: * *p* < .10; ** *p* < .05; *** *p* < .01.

Table 3

The impact of political and economic variables on the effective state and local tax rate of the top 2–5% of income households to the bottom 20% of income households in 2002 (standardized coefficients).

	(1)	(2)	(3)	(4)
1989 Tax Burden	.508*** (5.76)	.508*** (5.77)	.506*** (6.03)	.500*** (5.78)
Multi-Rate Income Tax	.461*** (5.46)	.459*** (5.37)	.461*** (5.50)	.451*** (5.44)
Average Democratic Strength	.003 (.04)	–	–	–
% Democratic Control	–	.010 (.15)	–	–
% Democratic Governor	–	–	–.014 (.20)	–
% Republican Control	–	–	–	–.087 (1.24)
Liberalism of the Electorate	–.317*** (3.01)	–.315*** (2.99)	–.319*** (3.07)	–.318*** (3.08)
Right-to-Work Law	–.288** (2.61)	–.287** (2.61)	–.301*** (2.81)	–.265** (2.43)
Border States	.025 (.34)	.026 (.36)	.029 (.41)	.053 (.73)
% Δ RPI	–.059 (.80)	–.059 (.80)	–.061 (.85)	–.043 (.59)
% Δ Share of Income of 2nd–5th	.004 (.04)	.004 (.04)	.004 (.05)	.022 (.28)
Average Tax Rate in 2002	–.135** (2.01)	–.136** (2.02)	–.138** (2.09)	–.146** (2.19)
Constant	33.787*** (2.91)	33.942*** (3.01)	35.471*** (3.24)	34.542*** (3.13)
Adj. R ²	.81	.81	.81	.82

Absolute value of *t*-statistics in parentheses: * *p* < .10; ** *p* < .05; *** *p* < .01.

butions from the highest income groups neither political party will favor extremely high rates of taxation on the top income households. To investigate this possibility we analyzed the effective state and local tax rate on the top 2–5% of income households (i.e., the next highest 4% of income households) as a percentage of the effective state and local tax rate of the bottom 20% of income households in order to determine if the empirical results reported in Table 2 are robust for the next highest 4% of income households. In this analysis the independent variables, 1989 Tax Ratio, Border States and % Δ Share of Income of 2nd–5th, are for the households in the top 2% through 5% of the income distribution. The empirical results appear in Table 3. The findings in Table 3 do not differ from those reported in Table 2 in any meaningful way. This result suggests that the partisan political composition of a state's government has no effect on the relative tax burden of either the top 1% of households or the next top 2–5% of income households.

5. Alternative specifications

The empirical results from the previous section support some of the findings from previous research, challenge other findings and offer new findings about previously untested hypotheses. One way to test the sensitivity (validity) of the previously reported empirical results is to estimate alternative specifications of the estimated model in Table 2 (because of space limitations the complete empirical results are available upon request).

In view of the fact that state right-to-work laws are disproportionately located in Southern states (12 of the 13 Southern states have right-to-work laws), we re-estimated the models in Table 2 for only non-Southern states. In terms of both substantive and statistical significance there is no appreciable difference between the empirical results for the non-Southern states and all 50 states reported in Table 2.

Since a multi-rate state income tax makes it easier for states to increase the progressivity of state taxes, we re-estimated the models in Table 2 for those states that only have a multi-rate income tax system. The empirical results are very similar to those in Table 2: no independent variable that is statistically significant in Table 2 becomes statistically insignificant or vice versa.

Radcliff and Saiz (1998) find that the percentage of a state's labor force that belongs to a union is positively associated with the progressivity of state and local tax burdens. Replacing the variable Right-to-Work Laws with the percentage of a state's employed workers who belong to a union (averaged over the 13-year period 1989–2001) produces only one change from the empirical results reported in Table 2: % Republican Control becomes marginally negatively significant.

The presidential vote in a state is often used as a measure of the ideology of a state's electorate (Canes-Wrone, Brady, & Cogan, 2002). Therefore, we re-estimated the models in Table 2 using the percentage of the statewide presidential vote for George W. Bush in 2000 as a measure of the ideology of a state's electorate. Replacing the Erikson et al. (1993) measure of a state's public ideology with the percentage of the statewide presidential vote for George W.

Bush in 2000 results in the following changes: state liberalism of the electorate and right-to-work laws become statistically insignificant, % Republican Control and change in the Share of Income going to the top 1% of households become marginally statistically significant in one of the four equations.

Another possible alternative would be to change the dependent variable from the effective state and local tax rate of the top 1% of income households as a percentage of the effective state and local tax rate of the bottom 20% of income households in 2002 to the difference between the 2002 Percent Tax Burden – 1989 Percent Tax Burden or the ratio of the 2002 Percent Tax Burden/1989 Percent Tax Burden. However, changing the dependent variable to the either of these alternative measures is not a statistically valid alternative unless the unstandardized coefficient for the 1989 Percent Tax Burden in an equation in which the dependent variable is the 2002 Tax Ratio is 1.0 (William Greene, 2010 personal communication). Since the unstandardized coefficients for the 1989 Tax Burden in the models estimated in Table 2 have a 99% of being less than .669, we cannot legitimately use either of these alternative measures.

6. Discussion

Declining relative state and local tax burdens on the top 1% of income households marked the time period 1989–2002. In 2002 the ratio of state and local taxes as a percentage of income of the top 1% of households to the bottom 20% of income households was lower in 44 of the 50 states than it was in 1989. In 1989, the effective state and local tax rate of the top 1% of income households was 59% of the effective state and local tax rate of the bottom 20% of income households. By 2002 the mean (average) ratio was only 49%. Thus, over the time period analyzed in this study, the relative mean state and local tax burden of the top 1% of income households declined by nearly 17%. Additionally, while the relative tax burden of the top 1% was decreasing, their absolute tax burden was also decreasing. State and local taxes as a percentage of income of the top 1% of income households was lower in 2002 than in 1989 in 32 of the 50 states. State and local taxes represented approximately a quarter of a percentage point (mean .264) less of income for the top 1% of households in 2002 than in 1989.

This study examined the impact of partisan political environment, tax policy history and economic variables on the ratio of state and local taxes as a percentage of income for the top 1% of households to the bottom 20% of households in 2002. The empirical results indicate that the presence of state right-to-work laws and the liberalism of the electorate are both negatively associated with state tax progressivity and statistically significant in all models.

The empirical results also indicate that tax policy history is important. The greater the tax burden of the top 1% of income households relative to the tax burden of the bottom 20% of income households in 1989 the greater this same ratio in 2002. Additionally, the presence of a multi-rate state income tax is associated with a higher relative tax burden on the top 1% of households in 2002. Both empirical

findings for the tax policy history variables are significantly positive in every model.

Among economic variables, the average tax rate in 2002 is negatively associated with the relative tax burden of the top 1% of income households and is statistically significant in every equation. None of the other economic variables (percent change in real per capita income, the progressivity of state and local taxes in bordering states or the percentage change in the share of income going to the top 1% of households in a state) are statistically significant in any model.

None of the four measures of partisan political strength/control (Average Democratic Strength, % Democratic Control, Democratic Governor, % Republican Control) are statistically significant in any model. The finding that partisan political strength/control has no impact on the change in the effective state and local tax rate of the top 1% of income households as a percentage of the effective state and local tax rate of the bottom 20% of income households over the 1989–2002 period may be due to two factors.

First, as a result of the increasing share of income going to the top 1% of households over the 1989–2002 period, campaign contributions from wealthy households made up a greater share of total campaign spending over this period. This change means that the top 1% of income households were financially more important to state elected officials in 2002 than in 1989. Second, since campaign expenditures are a greater share of income for households at the upper extremes of the income distribution than for either middle income or lower income households (Verba, Schlozman, & Brady, 1995), a reduction in the state and local tax burden of the top 1% of households would likely produce greater campaign contributions than reductions in state and local tax burdens for either middle or low income households. Thus, state elected officials had a greater financial incentive to lower the tax burden for the top 1% of income households.

Both of the two aforementioned changes made elected Democratic officeholders more financially dependent on the top 1% of income households. Since over the 1989–2002 period the top 1% had an increased share of income and are more likely to contribute a greater percentage of any additional income to politicians, Democratic politicians were more likely to be indebted to upper income households for campaign contributions in 2002 than in 1989. Additionally, since the percentage of competitive state legislative seats (i.e., where either political party has a reasonable chance of winning) declined over the 1989–2002 period, strategic Republican contributors in safe Democratic state legislative districts had a greater incentive to contribute to the Democratic candidate: since the Democratic candidate was almost certain to be elected, it is better to be a contributor to a “winner” rather than to antagonize the victorious candidate by contributing to their opponent. Therefore, Democratic candidates in many state legislative contests were more financially indebted to the top 1% of income households in 2002 than in 1989. The more elected Democratic officeholders were financially indebted to upper income households, the less likely they were to pursue a more progressive tax system. In terms of tax policy this would mean a lower relative tax burden for upper income households.

Bartels (2005, 2008) provides another reason for why Democratic policymakers desiring greater state tax progressivity may have difficulty getting voters to favor it: voters frequently fail to distinguish between a move toward greater progressivity (which would benefit most taxpayers) from an across-the-board tax increase (which would harm all taxpayers). For example, Bartels (2005, 2008) finds the strongest predictor of a voter's position on the Bush Tax Cuts in 2001 was their perception of the fairness of their own tax burden, not their perception of the tax burden of the upper income households. Citizens who thought their tax burden was too high were much more likely to support the Bush Tax Cuts than voters who thought their own tax burden was either “just right” or “too low.”

Furthermore, Bartels (2005, 2008) finds that voters frequently separate tax and spending decisions (i.e., those desiring greater government spending also favor tax cuts). Such confusion may also partially explain the finding that public liberal ideology is significantly negatively related to the relative state and local tax burdens of the top 1% of income households: more liberal voters either confused the income groups that would benefit from changes in state taxes or were primarily interested in their own tax burden and not the relative tax burdens of other income groups.

The results of this study also reinforce Hansen's (1983) assessment and Berch's (1995) empirical results that the presence of a multi-rate income tax system increases the likelihood that relative state and local tax burdens will become more progressive. It is often politically difficult to change state and local tax policies. Typically, the easiest path for state lawmakers is to build onto an already existing tax structure. Since citizens in a state with a multi-rate income tax are already accustomed to a progressive income tax rate structure, it is easier for such states to increase the progressivity of state and local tax burdens than for states without a multi-rate income tax. The results of this study also support the prior finding of Radcliff and Saiz (1998) and Berch (1995) that business interest group strength matters. The presence of a right-to-work law in a state significantly reduces the progressivity of state and local tax burdens in every model.

This study is the first to consider a state's average tax rate as a predictor variable of the distribution of the state and local tax burdens. In every estimated equation, the average tax rate in a state has a significantly negative impact on the progressivity of a state's relative tax burden over the time period 1989–2002. In other words, there is a tradeoff between the *average* tax rate and the *distribution* of state and local tax burdens: the *greater* a state's average tax rate, the *less* progressive a state's tax system. This suggests that future empirical work on state and local taxation should include a state's average tax rate as a predictor variable.

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