

Partisan Governors and Economic Policy

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Abstract

In this paper, we evaluate the role of elections for governors' tax policy making. Do voters *affect* state tax policies by pushing politicians to set middle-of-the-road policies (yielding policy convergence), or do voters *pick* the politician who announces the most preferred policies (yielding policy divergence)? We show that political behavior differs across tax instruments, regions, and time periods. Findings include evidence that voters both *pick* and *affect* income tax policy. However, they primarily *affect* sales tax and corporate tax policies. Voters induce governors to engage in reputation building; Republican lame ducks frequently raise total taxes at a higher rate than do their Democratic counterparts, particularly in the South and in the time period starting with Reagan's Presidency.

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1. INTRODUCTION

What is the role of elections for policy making? One strand of the literature argues that competition for votes will force political candidates to moderate their partisan views and promise policies that are closer to the center of the policy spectrum (Downs, 1957; Wittman, 1983; Calvert, 1985). In this view, voters “affect” policy, and the effect is policy convergence across political parties (Lee et al., 2004). A crucial assumption underlying the perspective of Downs (1957) is that candidates’ can commit to campaign promises such that these promises become credible.

Another strand of the literature argues that promises by political candidates to keep their policy choices moderate after taking office are unlikely to hold (Besley and Case, 2003). For example, in the citizen-candidate model by Osborne and Slivinski (1996) and Besley and Coate (1997) politicians cannot credibly commit to implement policies that deviate from their own preferences. Since voters perfectly foresee reneging on any other policy, politicians must make campaign promises in accordance with their most-preferred policy positions. Moreover, Alesina (1988) finds that partisan politicians with different policy preferences may be unable to commit to middle-of-the-road policies if their promises are not perceived by voters as credible.¹ According to this view, voters will consequently “pick” the politician with the policy closest to their own preferences and policy will diverge across political parties (see Lee et al., 2004).

In this paper, we seek to evaluate empirically whether voters *affect* or *pick* state level policies in the U.S. While Lee et al. (2004) have analyzed this issue for members of the U.S. House of Representatives and Ferreira and Gyourko (2008) for U.S. mayors, we study U.S.

¹ Since the politician’s (or her party’s) promises of moderation are dynamically inconsistent, voters will not believe that candidates will compromise. This suggests that politicians will set policy based on party affiliation when partisanship is taste-based.

governors' state tax policy choices. Our focus on governors appears advantageous when addressing the question at hand due to the institution of gubernatorial term limits utilized in a majority of the states. As shown by Alesina (1988), in a one-shot game (such as when a governor campaigns for a final lame duck term) a politician's promises of policy compromise lack credibility and she opts to set policy at her bliss point upon winning the election. Thus, possible differences in Democratic and Republican governors' behavior when accountable to voters (eligible for re-election) and in the lame duck term, respectively, should help answer the question of the role of elections.

Moreover, insight into the role of elections can be gained from the literature on reputation building, which studies inter-temporal policy differences between re-electable and lame duck governors (Besley and Case, 1995, 2003; List and Sturm, 2006).² Sharp policy reversals upon gaining lame duck status would be evidence of reputation building, and thus that voters affect policies as long as politicians are exposed to political competition. A finding that no discernible change occurs would indicate that voters instead pick policies by selecting politicians with the closest policy preferences.

We utilize 1970-2007 state level data on gubernatorial electoral outcomes and four different tax yearly growth rates:³ (i) Income tax revenues per capita; (ii) Sales tax revenues per capita; (iii) Corporate tax revenues per-capita; and (iv) Total tax revenues per capita. We use a regression-discontinuity approach to deal appropriately with the endogeneity and omitted

² In Besley and Case's (1995) theoretical model, voters with imperfect information re-elect a governor with a higher probability, the greater the incumbent's effort and thus her reputation. In the final term, the governor lacks re-election prospects, and thus receives no payoff from reputation building. Her effort level therefore falls and her policy choice changes from earlier periods. List and Sturm (2006) develop a two-policy model where a politician sets a "frontline policy" (e.g., government spending, the degree of wealth redistribution) and a "secondary policy" (e.g., environmental policy, trade policy). The model predicts that if the secondary policy is some voter group's main priority, politicians may distort the secondary policy to attract these "single-issue voters."

³ More precisely, we have data for 1970-2000, 2002, and 2004-2007, and dropped (as is common in the literature) Alaska, Hawaii, and Nebraska.

variable problems associated with governors' political affiliations. The advantage of this empirical technique is that it mimics a random assignment of the governor's party affiliation (Lee *et al.*, 2004; Lee, 2008). This approach allows us to identify the pure effect of governor party affiliation, both on average and conditional on eligibility for re-election. A second contribution is the separation of the sample into governors eligible for re-election and those that are term-limited, respectively. The literature on the roles of elections, voters, and political competition appears not to have fully recognized, or fully utilized, the institution of term limits. An additional contribution is that we extend our analysis to study differences across regions and time periods. In particular, we study whether political behavior differs in the Southern states, and whether President Reagan's policies affected state level policy making. Party affiliation is commonly seen as less consequential in the South (Lee *et al.*, 2004), and it therefore appears of potential importance to investigate regional differences. Moreover, President Reagan pursued a devolution of policy making to the states, potentially making tax policy of greater importance to voters and state politicians. The Economic Recovery Act of 1981 (the Kemp-Roth tax cut) and the later Tax Reform Act of 1986 (TRA-86) may all have contributed to a novel political behavior in the states starting in the early 1980s.

Our evidence suggests that whether voters "pick" or "affect" policy depends on the type of tax, the governor's re-election potential, the region and the time period. For total per capita taxes, we find only scant evidence of significant differences under re-electable Democratic governors and their re-electable Republican counterparts. By contrast, lame duck Democratic governors reduce per-capita taxes by between \$10.70 and \$27.70 per year (in real 1984 dollars) compared to their Republican colleagues. Over a four year term, the lower estimate suggests a difference of about 5 percent since the average tax level in the period is about \$800 per capita.

The effects are particularly larger in the South and appear limited to the post-1980 era. In these cases, voters affected tax policies since voters pushed governors to set similarly moderate policies while eligible for reelection. This pressure caused governors to undertake reputation building activities. Somewhat surprisingly, Democratic lame ducks lowered these taxes by more than their Republican colleagues.⁴ The fact that the governor's party plays a more important role in determining tax policy in lame duck periods is consistent with the literature (Besley and Case, 1995), but the sign of the effect we find is novel. This difference suggests that the OLS results reported in the literature are contaminated with misleading bias, either due to endogeneity of the governor's party and tax policy or due to omitted variables correlated with both.

Next, our results suggest that voters affect sales tax policies set by re-electable governors. These governors are engaged in reputation building activities as evidenced by lame duck governor behavior, although this appears to vary geographically and over time. In Southern states, lame duck Democratic governors decrease sales taxes about \$12 per year, compared to their Republican counterparts, while in Non-Southern states the relative decline is less than half that magnitude and statistically insignificant. Over a 4-year term, this relative decline results in a difference of about \$50, over 10 percent of the mean level of sales tax per capita. The detected difference in the sales tax across parties occurs only in the post-1980 period.

There is some evidence that voters "pick" income tax policy during non-lame duck periods, as regular Democratic governors raise the income tax by between \$5.60 and \$7 more per year than do their Republican counterparts. The effect is particularly strong in Non-Southern

⁴ The literature suggests, for example, that lame duck governors may be compensated (by her party, or the party's next candidate) for moderating policies (in particular, neutralizing earlier-period policy choices) and thus raise the probability of keeping the governorship within the party (Alesina and Spear 1988), or chose to moderate policy in order to raise the probability of electoral success by a politician closer in ideology (from her own party) (Harrington, 1992). However, results presented by Besley and Case (1995) suggest that lame duck governors do *not* care for either their own or their party's reputation, as only re-electable governors respond to natural disasters by raising expenditures.

states and subsequently to President Reagan's election. Moreover, in Non-Southern states Democratic lame duck governors decrease income taxes by about \$12.30 per year, compared to their Republican counterparts, suggesting that reputation building is also ongoing. This effect is less pronounced in Southern states. Finally, there is no clear relationship between the party of the governor and corporate taxes in any geographic region or era.

We believe that the different effects found across tax types may partially be explained by lobbying and the mobility of the tax bases, and some interaction between these two forces. Industry lobby groups may influence governors from both parties to set low growth rates of sales- and corporate taxes forcing convergence, but are less interested in income tax policy. High mobility of the underlying tax base may also make governors more attentive (or accountable) to other states' sales- and corporate tax rates, irrespective of party affiliation. Governors' discretion may thus be severely restricted by inter-jurisdictional sales- and corporate tax competition (see Brueckner (2003) for a survey of this literature).⁵ The literature contains results consistent with this view.⁶

We believe our findings make a novel contribution to the literature, especially in light of the fact that the recent empirical evidence on the role of elections and candidate behavior is mixed. While Ferreira and Gyourko (2008) find no difference between U.S. mayors' spending across political parties, suggesting that voters at the city level "affect" policy. Lee et al. (2004) report that U.S. House members from the two main political parties vote differently. This suggests that voters "pick" policies rather than "affect" policies. At the state level, neither Knight (2000), Reed (2006), nor Leigh (2008) find evidence of an effect of governor party affiliation on

⁵ This may be a topic suitable for future research, but is beyond the scope of the current study.

⁶ See Devereux *et al.* (2007) and Eggert and Sørensen (2008).

state tax rates.⁷ However, we believe the literature using state level data suffers from several potential weaknesses, including an insufficient approach to the endogeneity problems associated with the governor's party and from not taking the role of term-limit legislation sufficiently into account.

In the related area of reputation building the literature shows that policy is frequently distorted by politicians seeking to attract voters (Besley and Case 1995, 2003; List and Sturm 2006). Besley and Case (1995) found that Democratic term-limited governors set significantly higher per capita total state taxes and state expenditures than other governors, while Besley and Case (2003) (who extend their previous data set to 1997) find a significant effect only for state expenditures.⁸ Besley and Case (2003, p. 55) find that “over time, the impact of having an incumbent who cannot stand for reelection has changed from being on average positive and significant, in the half of the period, to being on average negative and significant (and much more variable year-to-year) in the second half. We can offer no explanation for this pattern.” Moreover, Besley and Case (2003, p. 55) also argue that “It seems likely that some omitted variable is responsible for the change in behavior observed for governors working under a term limit. This is an area ripe for future research.”⁹ However, we find that these studies do not fully address the endogeneity and omitted variable issues inherent in investigations of the role of party affiliation and tax policy. We believe that by utilizing a regression-discontinuity approach and more recent data, and by separating the analysis into several less aggregated tax measures, geographic regions and time periods, we are able to shed new light on this puzzle.

⁷ At the state level, Besley and Case (2003) establish that a higher share of Democratic state legislators results in higher state spending, while Knight (2000) and Reed (2006) find that Democratic control of state legislatures raises the tax burden.

⁸ List and Sturm (2006) report that governors' environmental policies change notably once they obtain lame duck status, and the change is conditional on the preferences of the electorate.

⁹ Millimet *et al.* (2004) (who again extend the Besley and Case sample to 1999) report strong positive effects of lame duck status; and find that Republican lame ducks raise taxes and spending per capita more than do their Democratic counterparts.

The paper is organized as follows. In Section 2 we discuss the data and the empirical model utilized in our analysis. Section 3 outlines the results, and Section 4 concludes.

2. EMPIRICAL METHODOLOGY AND DATA

2.1. Empirical Methodology

To begin, let Y_1 and Y_0 denote two variables of tax policies to be compared. In particular, if these are the policies set when the governor is a Democrat or Republican, respectively,

$$Y_{1i} = x_i\beta + \delta + u_{1i} \tag{1}$$

$$Y_{0i} = x_i\beta + u_{0i} \tag{2}$$

where x is a vector of observable characteristics of state i (including an intercept) and u is the error term as usual. The difference in tax policy between Democratic and Republican governors is captured by δ . Note that we never observe both Y_1 and Y_0 for the same governor as the governor cannot be a Democrat and Republican at the same time. The observed tax policy for governor i can be expressed as $Y_i = Y_1D_i + (1 - D_i)Y_0$ where D_i is the party membership of the governor in state i , $D_i = 1$ if Democratic, $D_i = 0$ if Republican. Thus, we may write the observed outcome as a regression model,

$$\begin{aligned} Y_{it} &= Y_1D_{it} + (1 - D_{it})Y_0 \\ &= D_{it}(x_i\beta + \delta + u_{1it}) + (1 - D_{it})(x_i\beta + u_{0it}) \\ &= x_{it}\beta + \delta D_{it} + u_{it}, \end{aligned} \tag{3}$$

where $u_{it} = u_{0it} + D_{it}(u_{1it} - u_{0it})$. Eqn. (3) is a common regression model. If $E[u|D] = 0$, we can consistently estimate the effects of party ideology on tax policy by Ordinary Least Squares

(OLS). If we take advantage of the panel structure and further assume that the error term consists of two parts; a time-variant u_{it} part and a time-invariant v_i part, (3) becomes

$$Y_i = x_{it}\beta + \delta D_{it} + v_i + u_{it}. \quad (4)$$

If party ideology D conditional on x is uncorrelated with time-variant shocks to tax policy, fixed-effect OLS (FE-OLS) estimation of (4) yields a consistent estimate. While plausible, such an assumption may still be too restrictive and potentially fail to hold. For example, an adverse economic shock that impacts a particular state may lead to a need to reduce the tax burden in the state. If a particular party, say the Democratic party, is more likely to be elected during difficult times, there exists a negative correlation between Democratic party and unobservable determinants of tax policies. In this case, the negative correlation leads to underestimated effects of party on policies. As a result, we may not find any significant evidence of policy divergence, as the estimates are biased toward zero. Although we can alleviate the bias by controlling for those (observable) variables that are commonly regarded as the determinants of tax policy, it still may not be sufficient to identify the causal effect of party ideology. As a result, recent studies of the party effects on policy outcomes have utilized the regression discontinuity (RD) method (Lee et al. 2004). This method exploits the fact that the election rule is a deterministic function of vote margin (“sharp” RD design),

$$D_i = I(m_i > 0), \quad (5)$$

where m_i is vote margin. Note that in the sharp RD design,

$$E[u|D, m] = E[u|m] = f(m), \quad (6)$$

which implies that we could include and explicitly model the conditional expectation $E[u|D, m]$ in (3). Equation (3) becomes

$$\begin{aligned}
Y_{it} &= x_{it}\beta + \delta D_{it} + v_i + \varepsilon_{it} \\
&= x_{it}\beta + \delta D_{it} + v_i + E[u_{it}|D, m = m_{it}] + \varepsilon_{it} \\
&= x_{it}\beta + \delta D_{it} + v_i + t + f(m_{it}) + \varepsilon_{it}
\end{aligned} \tag{7}$$

where β is a constant, δ is the coefficient of interest, $f(\cdot)$ is a flexible function of m , and $\varepsilon_{it} = u_{it} - E[u_{it}|D, m = m_{it}]$ is the error term. δ can be consistently estimated via OLS. Prior to continuing, several estimation issues warrant further discussions. First, the main issue in the estimation is selecting the correct functional form of $f(\cdot)$. While over-specification of $f(\cdot)$ leads to consistent yet less precise estimates, under-specification produces inconsistent but more efficient estimates. To construct the control function, we either use a linear function or include cubic polynomials of the Democratic vote margin, interacted where appropriate with a dummy for lame-duck. The specification with cubic polynomials is more flexible than the linear one, and thus it is considered to be the preferred specification. Second, the inclusion of time and state fixed effects is noteworthy. As noted in Hoxby (2000) and Petterson-Lidbom (2008), the inclusion of these variables allows us to use only within-state variations to identify the party effects. This is desirable since it is "more powerful and less subject to bias" (Hoxby, 2000, p. 1253). Finally, the inclusion of additional variables x_{it} is not necessary in RD design estimation. However, if these variables are orthogonal (exogenous) to the party affiliation, the inclusion of these variables could potentially improve the precision of our estimates. This may be particularly important when we assess the robustness of our results by looking at the part effects by region and time period, as the number of observations may become small for some sub-groups. To justify the inclusion of these variables, we also conduct a set of falsification tests to examine whether or not these variables are indeed exogenous to the party affiliation. In particular, following the literature (see Petterson-Lidbom, 2008), we regress each additional covariate on

party affiliation, along with the control function as discussed above, for all the models presented below. In these regressions the party affiliation coefficients are not statistically significant at conventional levels (except population in the non-South subsample), suggesting that these covariates are well-balanced and our RD design indeed mimics the random assignment as desired. The results are available from the authors upon request.

2.2 Data Sources and Construction

The dependent variables for this study consist of the rate of change in four per capita state tax policy measures: total state tax revenues, sales tax revenues, income tax revenues, and corporate tax revenues. All tax variables are deflated to 1983 dollars and are collected from the Census Bureau's *Statistical Abstract of the United States*. We difference these tax variables since our expectation is that policy acts in terms of changes from the extant level. Data on gubernatorial term limits come from List and Sturm (2006), but are updated to 2007. In the U.S. states, governors frequently face term limits after two terms in office. However, one-, three, and no term limits also exist in the states. The party affiliation and vote data come from Ansolabehere and Snyder (2006), updated through 2007 from individual state election websites. Vote margins are constructed as the Democratic candidate's two-party vote share (minus 50 percent). We include only elections where a Democrat and a Republican are the top two candidates.

In all specifications, we control for the state population, the real income per-capita, the proportion of the population aged under 18, and the proportion aged over 65. These data come from the Census Bureau's *Statistical Abstract of the United States*. Summary statistics are reported in Table 1.

3 RESULTS

3.1 Results by Re-Election Eligibility

Table 2 reports the estimated effect of having a Democratic governor in office rather than a Republican on four different measures of tax policy. Columns (1)-(2) and (3)-(4) report coefficients produced using linear and cubic control functions, respectively. Columns (1) and (3) display the results for governors eligible for re-election, while Columns (2) and (4) show the lame duck governor results. In all cases, the reported coefficient can be interpreted as the expected yearly change in the real per capita tax under a Democratic governor, as compared to a similarly situated Republican governor.

We start by discussing the results for re-electable governors. For total taxes in Panel A, the estimated effect of a Democrat is positive, but only significant in Column (1) at the 10 % level ($p=.07$). For income taxes in Panel C, we detect a consistently positive and significant effect of Democratic governors on the rate of increase. Re-electable Democratic governors raise income taxes at by about \$5.65-\$7 per capita per year, as compared to their Republican counterparts. The average level of income taxes over the sample is about \$250 per capita, so over a 4-year term this results in a difference of about 10 percent. Thus, the result for income taxes suggests that voters “pick” policies.

For sales- and corporate taxes in Panels B and D, the primary result is an inability to reject the hypothesis of no difference between Republicans and Democrats. The effect of a Democrat is completely indistinguishable from zero in all specifications, suggesting that voters “affect” policies. The differential effects across the types of taxes suggest that a more careful investigation of individual taxes is warranted, a quest we take up below.

We turn now to the pattern of partisan effects for lame ducks. This pattern is quite different than for the re-electable governors, with the growth in total- and income taxes now significantly higher for Republican lame ducks than for their Democratic counterparts. Moreover, these results are quite large and robust. Panel A suggests that Republican lame ducks increase total taxes per capita about \$11.00 per year as compared to their Democratic counterparts. Since the average level of per-capita taxes in the sample is about \$840, this ends up leading to about 5 percent higher taxes after a 4-year term under a lame duck Republican, as compared to a lame duck Democrat. A somewhat similar pattern holds to some degree for sales taxes (although these results are not significantly different from zero), but there is little evidence of a difference in corporate taxes.

Our results suggest that voters pick income tax and (to some degree) total tax policies (leading to policy divergence) while governors run for re-election, while voters simultaneously affect these policies leading to reputation building. We explore such reputation building activities further below.

3.2 Tax Types by Geography and Era

In Tables 3 through 6, we partition the data set in two different ways in order to gain a more nuanced view of policy making. In Panel A of each of these tables we divide the data in Southern states and non-Southern states.¹⁰ In Panel B we investigate the time periods before and after President Reagan's electoral victory in year 1980. The controls are unchanged from the specification in Table 2, and throughout we use a cubic control function in the Democratic vote share.

¹⁰ The South is defined consistent with the US Census region (SC, NC, FL, GA, AL, MS, LA, MD, VA, DE, WV, KY, TN, AR, OK, TX).

In Table 3, we find that the pattern in total taxes seems quite similar across regions, but seems to vary significantly by era. There is little evidence of partisan differences in total tax policy for re-electable governors in any region or era. Lame duck Republican governors increase taxes, both in the South and Non-South, as compared to their Democratic counterparts. Perhaps due to a relatively small sample, the result in the Non-Southern states is not statistically significant at traditional levels ($p=0.11$), although the estimated effect is quite large and consistent with the Southern state estimate. It appears that voters affect total tax policy in both regions, and that governors are engaged in reputation building.

Splitting the sample by era reveals that the lame duck effect is being driven by the post-Reagan era. Before 1981, there is no significant difference, while after 1981 Republican lame duck governors increase per capita taxes by about \$27.70 more per year compared to their Democratic counterparts. Since the average tax level in this era was about \$900, over a 4-year term this differential change would lead to a difference in total taxes of over 10 percent.

In Tables 4 through 6, we find that the mechanism by which the party of lame duck governors affects total tax policy varies significantly by region and era. In particular, we find that in the South, the difference in total taxes is driven by sales taxes; the estimated effect of having a Democratic lame duck governor (Panel A, Column (2), Table 4) is -12.22 and statistically significant at the 5 percent level. In the Non-South, by contrast, the effect works through income taxes; the estimated effect of having a Democratic governor (Panel A, Column (4), Table 5) is -12.30 and statistically significant at the 5 percent level. This result again suggests that the insignificant total tax result previously found for the non-Southern states (column (4) in Panel A, Table 3) may be due to the small sample size. We find no significant results for corporate taxes in Table 6.

While we cannot provide a definitive explanation for the differences across regions, one reason may be that the relative importance of sales and individual income taxes differs across regions. For example, in year 2007 sales taxes accounted for about 29 percent of the total tax revenue in the Southern states, while the corresponding number was roughly 24 percent in the non-Southern states.¹¹ Since sales tax revenue is more important in the South, suggesting that reputation building using sales taxes may be more important in this region.¹² Voters appear to affect sales tax policy to a greater degree in the South.

The time period-specific results for sales taxes mirror those for total taxes, where the effect seems concentrated in the post-1980 era. For income taxes, the results appear quite similar before and after 1980, with Republican lame ducks increasing taxes by about \$11 more per capita compared to their Democratic counterparts.

Table 5 also allows us to further investigate the unique effect of party affiliation on income taxes among re-electable governors. Although present in both regions, the effect of a Democratic governor appear stronger and larger in Non-Southern states (the two estimates are not statistically distinguishable). Moreover, President Reagan's reforms appear to have played a role, as only the post-1980 results are significant for re-electable governors. Democrats have a significantly higher growth rate of income taxes when eligible for re-election, but a significantly slower growth rate when facing a binding term limit. Reputation building is thus taking place. Our results suggest that voters both pick and affect income tax policies, particularly in the Non-Southern states and post 1980.

¹¹ Source: <http://www.taxadmin.org/fta/rate/slsource.html>. For other years available, see http://aysps.gsu.edu/frc/files/fiscalimpact/State_tax_collection.pdf.

¹² On the other hand, income tax revenue accounted for 24 percent in the South and 25 percent in the non-Southern states, not providing a good explanation for the observed pattern.

Our results suggest another puzzle: why are our estimates for income taxes generally significant for both types of governors, while our estimates for sales taxes and corporate taxes generally are insignificant? This difference is particularly clear for governors who are eligible to seek re-election. We believe some possible reasons are (i) differences in the mobility of the tax bases; and (ii) the focus of industry lobbying on corporate- and sales taxes.

We believe the insignificant differences exhibited for sales- and corporate taxes may be due to the greater mobility of these tax bases. Inter-jurisdictional tax competition may make governors more attentive (or accountable) to other states' tax rates irrespective of party affiliation, tying governors' hands (see Brueckner (2003) for a survey of the tax competition literature). On the other hand, workers are relatively less mobile and thus the elasticity of the income tax base is lower, resulting in increased feasibility for politicians to set different policies. Eggert and Sørensen (2008) find that the higher is the tax base elasticity, the greater is the marginal cost of public funds, and therefore the more expensive are tax increases in both economic and political terms. Devereux *et al.* (2007) argue that for goods that are easy to smuggle across borders (such as cigarettes), neighboring jurisdictions' taxes have an effect on state tax rates, suggesting politicians' hands are somewhat tied when it comes to sales taxes.

An additional explanation is that industry lobbying is likely focused on sales- and corporate taxes, and political support (campaign contributions) and pressure are likely to be similar whichever party occupies the governor's mansion.

3.3 Direct Lame Duck Effect

In Table 7, we further assess the effects of voters on governor policy selection by region and era. In these models, the excluded category is re-electable Republicans. The coefficient for Democrat thus shows the effect of a re-electable Democrat relative to the corresponding

Republican; the *Lame Duck* coefficient shows the difference in policy as a Republican governor turns lame duck; and the sum of the three coefficients (*Democrat*, *Lame Duck*, and *Lame Duck x Democrat*) shows the effect of a Democratic lame duck governor relative to re-electable Republican governors. The change as a Democratic governor turns lame duck is equal to the sum of the two coefficients *Lame Duck* + (*Lame Duck x Democrat*). No significant effects were found for corporate taxes and we omit these results from the table (results available upon request).

In the South before 1981 re-electable Republicans set higher total taxes than their Democratic counterparts, but post 1980 there was no significant difference. Moreover, while there was a significant inter-temporal decline in total- and income taxes as Republicans gained lame duck status in the South prior to 1981, this pattern subsequently changed. Post 1980, Republicans in the South winning a lame duck term set higher income taxes and raised total- and sales taxes, but did not significantly change income taxes.

In the South post 1980, voters consequently affected total taxes and sales taxes leading to reputation building by Republicans. On the other hand, voters picked income tax policies and no reputation building occurred by Republicans.

Similarly, in the Non-Southern regions of the U.S. Republicans competing for re-election implemented lower income taxes than did the Democrats throughout the sample period, and did not change any tax policy significantly as they became lame ducks. Again, voters picked income taxes and no reputation building occurred by Republicans. Voters did affect total- and sales tax policies, although no reputation building occurred by Republicans in the Non-South.

We find several significant results suggesting that Democrats in the South changed total tax policy in a significant fashion upon gaining lame duck status. For example, it occurred post

1980 when the growth rate of per capita total taxes decreased by \$18.22 per year ($p=0.046$) (Panel A, Column (3)). This suggests reputation building by Democrats. Recall that their Republican counterparts raised total taxes per capita as they become lame ducks. Moreover, since there is no significant difference in total taxes for re-electable governors of the two parties, our results suggest that voters affect total tax revenue per capita.

In the Non-South, the intertemporal effect of a Democrat gaining lame duck status was a decrease in the growth rate of per capita income taxes by \$31.42 prior to year 1981 ($p=0.003$), and a decrease by \$15.07 after year 1980 ($p=0.004$). This indicates reputation building by Democrats in income taxes, even though they also display significant differences relative to Republicans while re-electable. Thus, voters both picked and affected income taxes in the Non-Southern states. Voters appear to have pushed re-electable Democratic governors to set a higher income tax growth rate than what their preferences dictate.

Finally, post 1980 in the Non-South, Democrats reduced the growth of per capita sales taxes by \$10.67 ($p=0.092$), again suggesting that Democrats engaged in reputation building and voters affected sales taxes.

In sum, Tables 3-7 suggest that when studying the roles of elections and the effect of voters, the tax instruments in focus, regional differences, and sample periods make a difference. Such differences may help account for the puzzling findings by Besley and Case (2003) regarding the effects of term limits. Future work in this area may want to keep these findings into account.

3.4 Robustness Analysis

Next, we further assess the degree of robustness of our results. We recognize that lame-duck status is not necessarily exogenous. We attempt to deal with this in several ways. We have

indeed included state and time fixed effects in all estimations. Conditioning for the fixed effects, we control for all time-invariant unobservable determinants of tax policies, as well as those common to all states. However, there could still be some time-variant determinants that we fail to address, thereby biasing our estimates. To address this concern, we first re-estimate our models including a cubic polynomial control function of the Democratic vote share from the previous term (four years prior). The results are displayed in Table 8. Again, the results are qualitatively unchanged, and in some instances even strengthened.

Second, we have so far treated governors from states without term limits as equal to re-electable governors from the states with term limits. While they are all re-electable, they may be fundamentally different from each other. For example, the literature suggests that seniority moderates a politician's policy preference (see, e.g., Strattman, 2000). Suppose governors from the states without term limits stay in office for three terms. While still re-electable, they may have different policy views than their less senior counterparts from states with term limits. This effect, if it exists, may underestimate the degree of party divergence. To make sure that the results obtained are not affected in this fashion, we exclude all states without term limits. The results are presented in Table 9. The results remain qualitatively unchanged, although the result for re-electable governors in the Non-South now turn significant for total taxes (Table 9, Panel A, Column (3)). Moreover, the exclusion of states without term limits also leads to larger coefficient estimates in some instances, consistent with seniority-effects.

4 CONCLUSION

To be completed..

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Table 1. Sample Means and Standard Deviations, by Party and Lame-Duck Status

	Democratic		Republican	
	Lame Duck	Total	Lame Duck	Total
Total Tax	811.8	825.5	823.4	861.1
	225.2	233.1	240.8	264.7
Sales Tax	415.9	415.6	414	429.2
	127.2	149.1	154.6	142.9
Income Tax	244.2	256.8	255.11	278.7
	164.4	156	150.9	168.6
Corporate Tax	51.5	58.7	50.3	59.4
	28.3	33.3	30	31
Normalized Democratic Vote	11.02	9.12	-9.97	-7.02
	10.19	8.04	8.3	6.41
Income	12863	13207	13520	13896
	3115	2860	3059	2943
Population	4.67	4.75	5.53	5.71
	3.23	4.62	5.81	6.28
Percent over 65	11.7	11.7	11.9	12.1
	2.2	2	1.9	2
Percent under 18	21	20.9	20.4	20.6
	3.2	3	3	3
n	240	882	186	735

Notes: Sample includes the 47 states other than AK, HI, NE, and spans the years 1970-2000,2002,2004-2007. Tax and income variables are measured in real 1983 dollars per-capita. Normalized Democratic Vote is the Democratic share of the two-party vote minus fifty. Lame duck status occurs when incumbent is not eligible to run again.

Table 2. Effect of Democratic Governor on Change in Per-Capita Taxes, by Lame Duck Status and Alternative Control Functions

	Non Lame Duck (1)	Lame Duck (2)	Non Lame Duck (3)	Lame Duck (4)
Panel A: Total Tax				
	Linear		Cubic	
Dem. Effect	6.56* (3.52)	-10.70** (4.61)	5.27 (4.28)	-11.29** (5.26)
No. of Observations	1114	400	1114	400
Panel B: Sales Tax				
	Linear		Cubic	
Dem. Effect	0.53 (1.76)	-4.03 (2.88)	0.73 (2.33)	-4.00 (3.24)
No. of Observations	1114	400	1114	400
Panel C: Income Tax				
	Linear		Cubic	
Dem. Effect	5.65** (1.91)	-6.77** (2.91)	6.96*** (2.18)	-8.68** (3.46)
No. of Observations	986	364	986	246
Panel D: Corporate Tax				
	Linear		Cubic	
Dem. Effect	0.44 (0.82)	0.02 (1.42)	0.19 (1.02)	1.24 (1.39)
No. of Observations	1022	389	1022	389

Notes: Each entry is the estimated coefficient on a Democratic Governor Indicator, in a regression of changes in the indicated real tax per-capita, controlling for real state income per capita, population, percent over 65, percent under 18, state and year fixed-effects, and a control polynomial of the indicated degree. ***, **, and * indicate significance at the .01, .05, and .10 levels, respectively.

Table 3. Effect of Democratic Governors on Change in Total Tax per Capita, by Region, Lam Duck Status, and Era

	Non Lam Duck (1)	Lam Duck (2)	Non Lam Duck (3)	Lam Duck (4)
Panel A: Southern vs. Non-Southern				
	Southern States		Non-Southern States	
Dem. Effect	3.21 (8.22)	-18.98* (5.71)	6.35 (5.91)	-14.27 (8.88)
No. of Observations	298	225	816	175
Panel B: Pre-1981 vs. Post-1980				
	Pre-1981		Post-1980	
Dem Effect	0.30 (6.84)	1.47 (8.15)	6.67 (6.05)	-27.7** (9.82)
No. of Observations	360	125	754	275

Notes: Each entry is the estimated coefficient on a Democratic Governor Indicator, in a regression of changes in the indicated real tax per-capita, controlling for real state income per capita, population, percent over 65, percent under 18, state and year fixed-effects, and a cubic polynomial in normalized Democratic vote share. ***, **, and * indicate significance at the .01, .05, and .10 levels, respectively.

Table 4. Effect of Democratic Governors on Change in Sales Tax per Capita, by Region, Lam Duck Status, and Era

	Non Lam Duck (1)	Lam Duck (2)	Non Lam Duck (3)	Lam Duck (4)
Panel A: Southern vs. Non-Southern				
	Southern States		Non-Southern States	
Dem. Effect	-4.85 (4.12)	-12.22** (4.57)	3.35 (3.33)	-5.41 (6.61)
No. of Observations	298	225	816	175
Panel B: Pre-1981 vs. Post-1980				
	Pre-1981		Post-1980	
Dem. Effect	0.71 (3.39)	6.13 (7.46)	-0.14 (3.08)	-16.54** (5.56)
No. of Observations	360	125	754	275

Notes: Each entry is the estimated coefficient on a Democratic Governor Indicator, in a regression of changes in the indicated real tax per-capita, controlling for real state income per capita, population, percent over 65, percent under 18, state and year fixed-effects, and a cubic polynomial in normalized Democratic vote share. Standard errors reported in parentheses, clustered by governor. ***, **, and * indicate significance at the .01, .05, and .10 levels, respectively.

Table 5. Effect of Democratic Governors on Change in Income Tax per Capita, by Region, Lam Duck Status, and Era

	Non Lam Duck (1)	Lam Duck (2)	Non Lam Duck (3)	Lam Duck (4)
Panel A: Southern vs. Non-Southern				
	Southern States		Non-Southern States	
Dem. Effect	5.50 (3.15)	-4.10 (4.80)	7.56*** (2.91)	-12.30** (6.28)
No. of Observations	248	213	738	151
Panel B: Pre-1981 vs. Post-1980				
	Pre-1981		Post-1980	
Dem Effect	4.78 (3.86)	-11.33* (5.84)	8.10*** (2.79)	-11.51* (6.73)
No. of Observations	310	30	676	330

Notes: Each entry is the estimated coefficient on a Democratic Governor Indicator, in a regression of changes in the indicated real tax per-capita, controlling for real state income per capita, population, percent over 65, percent under 18, state and year fixed-effects, and a cubic polynomial in normalized Democratic vote share. ***, **, and * indicate significance at the .01, .05, and .10 levels, respectively.

Table 6. Effect of Democratic Governors on Change in Corporate Tax per Capita, by Region, Lame Duck Status, and Era

	Non Lame Duck (1)	Lame Duck (2)	Non Lame Duck (3)	Lame Duck (4)
Panel A: Southern vs. Non-Southern				
	Southern States		Non-Southern States	
Dem. Effect	-0.87 (2.05)	1.42 (1.51)	-0.03 (1.32)	1.66 (3.13)
No. of Observations	264	225	758	164
Panel B: Pre-1981 vs. Post-1980				
	Pre-1981		Post-1980	
Dem. Effect	-0.65 (1.52)	4.63 (3.99)	0.98 (1.43)	0.53 (1.85)
No. of Observations	322	120	700	269

Notes: Each entry is the estimated coefficient on a Democratic Governor Indicator, in a regression of changes in the indicated real tax per-capita, controlling for real state income per capita, population, percent over 65, percent under 18, state and year fixed-effects, and a cubic polynomial in normalized Democratic vote share. ***, **, and * indicate significance at the .01, .05, and .10 levels, respectively.

Table 7. Effect of Democratic Governor and Lame Duck Status by Region and Era

	South (1)	Non-South (2)	South (3)	Non-South (4)
Panel A: Total Tax				
	Pre-1981		Post-1980	
Democrat	-36.62* (19.32)	7.52 (8.13)	11.35 (9.69)	5.85 (8.41)
Lame Duck	-31.34** (14.41)	-0.45 (10.92)	25.82*** (7.58)	-0.02 (7.94)
Lame Duck x Democrat	33.16 (21.91)	-18.43 (18.83)	-44.04*** (13.94)	-15.61 (17.07)
No. of Observations	163	332	360	669
Panel B: Sales Tax				
	Pre-1981		Post-1980	
Democrat	-2.85 (9.03)	2.84 (3.98)	-1.20 (4.68)	1.21 (4.04)
Lame Duck	0.99 (7.85)	-11.77 (8.47)	13.41*** (4.53)	-2.60 (4.09)
Lame Duck x Democrat	-1.17 (11.27)	18.65 (13.83)	-16.43** (7.04)	-8.07 (9.02)
No. of Observations	163	332	360	669
Panel C: Income Tax				
	Pre-1981		Post-1980	
Democrat	-10.09 (6.08)	8.09* (4.57)	6.35* (3.75)	6.94** (3.62)
Lame Duck	-11.07* (5.89)	6.61 (5.87)	6.99 (4.90)	4.88 (4.53)
Lame Duck x Democrat	9.90 (7.11)	-38.03*** (12.20)	-11.40 (9.05)	-19.95*** (7.92)
No. of Observations	141	332	320	609

Notes: Each regression above reports the coefficient on an indicator for Democratic Governor, an indicator for Lame-Duck Status, and their interaction. Each also contains a cubic control function, in normalized Democratic vote share and it's interaction with lame-duck status, income per-capita, population, percent of the population over 65, percent of the population under 18, state fixed effects, and year fixed effects. ***, **, and * indicate significance at the .01, .05, and .10 levels, respectively.

Table 8. Effect of Democratic Governors on Change in Taxes per Capita, by Region and Lame Duck Status, Controlling for Lagged Democratic Vote Share

	Non Lame Duck (1)	Lame Duck (2)	Non Lame Duck (3)	Lame Duck (4)
Panel A: Total Taxes				
	Southern States		Non-Southern States	
Dem. Effect	8.21 (6.82)	-28.21*** (7.15)	13.60** (6.41)	-29.23*** (8.78)
No. of Observations	246	171	646	145
Panel B: Sales Taxes				
	Southern States		Non-Southern States	
Dem Effect	-4.55 (4.05)	-18.24*** (4.79)	5.29 (3.54)	-15.48*** (5.36)
No. of Observations	246	171	646	145
Panel C: Income Taxes				
	Southern States		Non-Southern States	
Dem Effect	1.94 (2.99)	-5.85 (6.61)	8.68*** (3.20)	-21.52*** (6.80)
No. of Observations	204	159	587	123
Panel D: Corporate Taxes				
	Southern States		Non-Southern States	
Dem Effect	0.74 (2.36)	0.99 (1.87)	-1.20 (1.48)	-4.37* (2.24)
No. of Observations	219	171	602	135

Notes: Each entry is the estimated coefficient on a Democratic Governor Indicator, in a regression of changes in the indicated real tax per-capita, controlling for real state income per capita, population, percent over 65, percent under 18, state and year fixed-effects, a cubic polynomial in normalized Democratic vote share from four years prior, and a cubic polynomial in normalized Democratic vote share. ***, **, and * indicate significance at the .01, .05, and .10 levels, respectively.

Table 9. Effect of Democratic Governors on Change in Taxes per Capita, by Region and Lame Duck Status, Limited to States Which Ever Had Term Limits

	Non Lame Duck (1)	Lame Duck (2)	Non Lame Duck (3)	Lame Duck (4)
Panel A: Total Taxes				
	Southern States		Non-Southern States	
Dem. Effect	5.56 (8.88)	-18.98*** (7.42)	11.96** (6.05)	-14.28 (8.87)
No. of Observations	264	225	526	173
Panel B: Sales Taxes				
	Southern States		Non-Southern States	
Dem Effect	-3.13 (4.83)	-12.22*** (4.57)	3.66 (3.12)	-5.43 (6.60)
No. of Observations	264	225	526	173
Panel C: Income Taxes				
	Southern States		Non-Southern States	
Dem Effect	5.50* (3.14)	-4.10 (4.80)	8.47** (3.82)	-12.30* (6.27)
No. of Observations	245	213	450	149
Panel D: Corporate Taxes				
	Southern States		Non-Southern States	
Dem Effect	-0.75 (2.08)	1.42 (1.52)	-0.30 (1.49)	1.66 (3.30)
No. of Observations	261	225	471	162

Notes: Each entry is the estimated coefficient on a Democratic Governor Indicator, in a regression of changes in the indicated real tax per-capita, controlling for real state income per capita, population, percent over 65, percent under 18, state and year fixed-effects, a cubic polynomial in normalized Democratic vote share from four years prior, and a cubic polynomial in normalized Democratic vote share. ***, **, and * indicate significance at the .01, .05, and .10 levels, respectively.