DOES ELECTORAL ACCOUNTABILITY AFFECT ECONOMIC POLICY CHOICES? EVIDENCE FROM GUBERNATORIAL TERM LIMITS*

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This paper analyzes the behavior of U. S. governors from 1950 to 1986 to investigate a reputation-building model of political behavior. We argue that differences in the behavior of governors who face a binding term limit and those who are able to run again provides a source of variation in discount rates that can be used to test a political agency model. We find evidence that taxes, spending, and other policy instruments respond to a binding term limit if a Democrat is in office. The result is a fiscal cycle in term-limit states, which lowers state income when the term limit binds.

I. Introduction

The desire to maintain a reputation is often thought to be the mechanism that keeps politicians in check. Officials who care to run again for office must act sufficiently often in the voters' interest to merit reelection. While models based on this idea have become increasingly popular in the formal political agency literature, little is known about their practical relevance. U. S. states provide a natural testing ground for such models, for in almost half of all U. S. states governors at some point face a binding term limit, beyond which political reputation becomes less important. This paper analyzes the behavior of U. S. governors from 1950 to 1986 and provides empirical support for the reputation-building model.

The literature on principal-agent models of politics is now quite extensive. With asymmetric information about politicians' "types" or some imperfect information about the state of the world, the reelection mechanism can raise effort or otherwise induce less opportunistic behavior. If voters are uncertain about incumbent characteristics, they may use outcome measures of performance to gauge their incumbent's type. If incumbents desire reelection, either because of rent that they receive while in office or because of the influence they wield in determining policy, then the

possibility of reelection will affect policy choices. Individuals are keen while in office to develop a reputation that enhances reelection chances.

Barro [1970] is one of the earliest models in this spirit. More recently, Banks and Sundaram [1993] develop a fairly general theoretical approach based on unobservable effort by incumbents (see also Austen-Smith and Banks [1989]). Harrington [1993] has recently extended this framework to look at distortions in economic policy choice induced by elections. More specific models have also been developed to explain particular policy choices. Rogoff [1994] shows that the political business cycle can be a rational phenomenon when there is asymmetric information between incumbents and voters. Besley and Case [1995] have extended the basic model to permit yardstick competition in tax setting. Coate and Morris [1993] investigate whether an incumbent might be tempted to make disguised transfers to special interests when there is imperfect information.

Almost all work on political agency is theoretical. However, there is a link between our analysis and the empirical literature on political business cycles. In their review and extension of that literature, Alesina and Roubini [1992] argue that there is evidence that elections affect GNP and unemployment, and use the OECD economies as a testing ground. There are two main differences between our work and most of these studies. First, we use data on policy variables on the left-hand side, rather than general indicators of economic performance. Second, we focus not on the behavior of *all* incumbents, but primarily on that of governors who are ineligible to stand for reelection.

There is also a literature that examines the effect of political institutions on policy outcomes in U. S. states. A good example is Poterba [1994], who studies the effects of politics on state deficits.[1] Most of that literature is not focused on testing any particular theoretical model of political competition. In contrast, in our paper there is a straightforward interpretation of the impact of gubernatorial term limits, making it possible to view our work as testing a particular theory of political actions.

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1. Poterba [1994] also provides an extensive review of the earlier literature. Political variables can at times be used as instruments in estimating policy effects. For example, Levitt [1994] uses mayoral elections to instrument for the level of policing, in examining how the latter affects crime rates.

Our empirical analysis of the effect of term limits on policy fits into a wider debate on the design of incentive schemes in principal-agent problems. There is a large body of theoretical work on how deferred rewards can help to deal with problems of hidden action. For two good examples, see Holmstrom [1982] and Stiglitz and Weiss [1983]. Moreover, it has been argued, for example in Tirole [1994], that career concerns are a particularly important incentive device in the public sector, where monetary reward schemes are less likely to be high powered than those in the private sector. The kind of exogenous change in the discount rate represented by a term limit provides a way of seeing whether reputation-building models appear consistent with the evidence. Thus, finding that term limits matter would make us more sanguine about the relevance of such models for understanding the real world.

The remainder of the paper is organized as follows. The next section sets out a simple reputation-building model of politics that offers predictions on the effect of a binding term limit for gubernatorial behavior. Section III presents our empirical analysis. Consonant with the theory, we find large and significant effects of binding term limits on economic policy outcomes. Section IV provides discussion and further tests of the theory. Section V concludes.

II. A REPUTATION-BUILDING MODEL

We interpret our results as a test of a reputation-building model of politics. We use an example based on Banks and Sundaram [1993] to illustrate the link between our empirical test and the political agency literature. The objective is to show that, in a world with imperfect information where both voters and incumbents behave rationally, a binding term limit should have implications for policy choice.

Each possible governor is characterized by some unobservable type ω_j that belongs to a finite set, which is ordered $\omega_1 < \ldots < \omega_N$. The probability that he is of type ω_j is denoted π_j. While in power, the incumbent takes an unobservable action $\alpha \in [\underline{\alpha}, \bar{\alpha}]$, interpreted as the amount of effort put in by the incumbent, which contributes to successful policy making. This probabilistically affects an outcome that voters care about, denoted by $r \in \mathscr{R}^+$. This could be interpreted as voters' utility, which could also depend upon other unmodeled observable policy choices. The distribution of this

outcome is given by $F(r;\alpha)$.[2] The incumbent's utility function when in power is denoted by $v(\alpha,\omega)$. He gets zero utility otherwise.[3]

Voters' payoffs are denoted by r. They decide whether or not to reelect their incumbent, and their strategy is $\sigma(r) \in \{0,1\}$, where $\sigma(r) = 1$ denotes reelection. We consider a two-period setup with timing as follows. First, the incumbent chooses his first-period action. The outcome r is then realized. Voters then make a reelection decision (assuming that no term limit is reached). In period 2 the (possibly new) incumbent gets to choose the action over again, and a second-period outcome is realized, at which point the game ends. The equilibrium concept is perfect Bayesian equilibrium.

We compare the incumbent's behavior under two regimes. The first has a one-period term limit, so that a new incumbent must be chosen each period, and the second offers the possibility of a second period in office. The difference illustrates the effect of reputation building on behavior. First, consider

(1) $\alpha_s(\omega) = \arg \max_{\alpha} \{v(\alpha,\omega) : \alpha \in [\underline{\alpha},\bar{\alpha}]\},$

where the subscript s stands for the one-period or "short-run" decision. This is the action that maximizes immediate payoffs. The assumption of a positive cross-derivative in $v(\alpha,\omega)$ makes $\alpha_s(\omega)$ an increasing function. A term limit precludes reputation building and the choice in (1) will result. Variation in effort reflects differences in incumbents' types.

To examine the case where reelection is possible, let $R(\sigma) = \{r : \sigma(r) = 1\}$ represent the set of r's for which an incumbent is reelected. Since this will not have any effect in period 2, the second-period choice will still be as above in (1). However, the first-period choice will be governed by

(2) $\alpha_l(\omega) = \arg \max_{\alpha}$

$\{v(\alpha,\omega) + \delta \Pr \{r \in R(\sigma) : \alpha\}v(\alpha_s(\omega),\omega) : \alpha \in [\underline{\alpha},\bar{\alpha}]\},$

where l stands for "long-run" and δ represents the discount factor.

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2. We suppose that this is decreasing and concave in α and that the associated density function has the monotone likelihood ratio property ($f(r;\alpha)/f(r;\alpha')$ is increasing in r for $\alpha > \alpha'$). That is, for higher values of α, the distribution of r first order stochastically dominates that for lower values.

3. We suppose that $v(\alpha,\omega_i) > 0$ for all $\alpha \in [\underline{\alpha},\bar{\alpha}]$ and $i = 1, 2, \ldots, N$. We also assume that $v(\alpha,\omega)$ is strictly quasi-concave in α, decreasing in ω, and that the cross-derivative between α and ω is positive. (The latter says that, other things being equal, individuals with higher ω_j's desire to put in more effort.)

The primary difference here is the fact that the action may affect the probability of reelection. This reputational dependence is easy to see for this environment. The voters care about the incumbent putting in as much effort as possible since their reward is then likely to be highest. Thus, they will reelect someone who, by delivering a high first-period r, is more likely to have a high ω. The formal link is via Bayes rule. The probability that the incumbent is of type k, given that the payoff was r, is

$$(3) \qquad \beta_k(r) = \frac{\pi_k f(r; \alpha_l(\omega_k))}{\sum_{j=1}^{N} \pi_j f(r; \alpha_l(\omega_j))} .$$

Voters' expected period 2 payoffs, given r, are $W(r) = \sum_{j=1}^{N}$ $(\int zf(z; \alpha_s(\omega_j)) \, dz)\beta_j(r)$ if the incumbent is kept, and $\overline{W} = \sum_{j=1}^{N}(\int zf(z; \alpha_s(\omega_j)) \, dz)\pi_j$ if a new incumbent is selected. Banks and Sundaram [1993] show that there are equilibria where voters use a cutoff rule (i.e., there is an r^* such that $\sigma(r) = 1$ if $r \geq r^*$) and incumbents put in extra effort over their short-run choice (i.e., $\alpha_s(\omega_j) < \alpha_l(\omega_j)$). The latter is the reputation-building aspect of the model. Incumbents increase effort in the hope that it will convince voters that they have high values of ω. A political agency model such as this has interesting predictions for gubernatorial behavior under term limits. We would expect to see different application of effort when term limits are binding relative to when term limits do not bind which may show up in all manner of policy choices. The theoretical model would, however, have to be enriched to handle the details of each. To summarize:

PROPOSITION 1.   If two terms are allowed, then incumbents who give higher first-term payoffs to voters are more likely to be retained to serve a second term. Those in their last term put in less effort and give lower payoffs to voters, on average, compared with their first term in office.

Our objective is to test for the effects of term limits on policy choices using data on U. S. states. Suppose, then, that we measure the impact of a binding term limit on policies of interest to voters, such as taxes and expenditures in a particular state s at time t, labeled as P_{st}. We could then estimate an equation of the form,

$$(4) \qquad P_{st} = \zeta_s + \psi_t + \gamma T_{st} + \alpha Z_{st} + \epsilon_{st},$$

where ζ_s is a state fixed effect, ψ_t is a year effect, T_{st} is a variable that

equals one if the governor in office in year t cannot run again, and Z_{st} is a vector of other variables (including state income and demographic variables) that might be thought to affect policy choices. The main coefficient of interest from the point of view of theory is γ. If this is equal to zero, then this suggests that the reputation-building model of politics does not seem to fit the data for the policy in question.

Before moving to the results, we discuss three features that were absent from the simple model, but which might be germane to the effects of term limits in practice.

(i) *Party Control.* Since a political party will exist after the governor is gone, it will have an interest in preserving the reputation of the party with the voters. Whether this has an effect will depend upon whether the party has sufficient power to prevent the governor from increasing personal gain at the expense of the party's reputation. Formally, one could allow the incumbent's future payoff to depend upon his or her party's success in future elections and allow the party's future success to depend in turn on current policy choices. Party loyalty arises naturally if the incumbent cares about the party's political or social agenda. However, unless the individual is motivated purely by party success, this may be insufficient to overcome the effect of term limits. Party loyalty may nonetheless act to mitigate the effect of term limits. Parties might also take active steps to protect their chances in future elections, after the incumbent steps down. Such actions might include party honor systems that reward past incumbents who remain in favor. Future sinecures might also be used as carrots. The party might protect itself by selecting candidates who are more likely to be servile or respect the party's mission. In the extreme, one could move to a model where the incumbent is completely subservient to the party so that a binding term limit does not affect the time horizon of a political agent (which is a collective rather than an individual). In our model above, we go to the other extreme, modeling the behavior of individual agents. The relevance of the latter case is, we believe, borne out in our empirical results. Anyone who wanted to subsume individual political behavior and focus entirely on a party-based model would have to explain the results presented below, which are suggestive of incomplete party discipline.

(ii) *Lack of Gubernatorial Discretion.* Another reason why the findings of this simple model may fail is that governors are held under a tight rein by their constitutions and legislatures, so that

they are unable to influence policies effectively. Policy discretion may be so limited that we would not expect the effect of term limits to be important.

(iii) *Life After Governorship*. Many governors run for further political office. Political capital is then still valuable even if a gubernatorial term limit is reached. Thus, the importance of political reputations may not end with a binding term limit.

These three features tend to weaken the predictions of the simple model laid out above. The results below suggest that these features, if present at all, are not strong enough to rein in governors whose days are numbered.

III. Empirical Evidence

We present empirical evidence on the effect of term limits on taxes, expenditures, state minimum wages, and workers' compensation using data for the 48 continental U. S. states from 1950 to 1986.[4] Table I provides information on sitting governors during this period. Democrats held office in roughly half the states in each year of our sample, with the exception of the mid to late 1970s, which saw a swell in the number of Democratic governors in the wake of Watergate. In every year of our sample, a significant fraction of all sitting governors (roughly a third) were ineligible to stand again for office. Of these, on average, two-thirds were Democrats, and one-third were Republicans.

We provide more detailed information on gubernatorial term limits in Table II. Roughly half of all states had no term limitations during this 37-year period. These states help us to identify year effects and the impact of state economic and demographic variables on state policy choices. Only seven states adopted term limits during this period: Maryland, South Dakota, Maine, Ohio, Nebraska, Kansas, and Nevada. Such changes may signal that decisions on term limits and state policies are made simultaneously, making it inappropriate to condition on term limits binding. For this reason, we repeated the analysis excluding these seven states, finding virtually identical results. Hence, throughout we focus on results for the full sample.

4. For a description of the data used in this analysis, see Appendix 1. We also considered using data on debt. We could not, however, locate a consistent data series on debt issued by state governments for this period. There was significant growth in private activity state debt during the later years of our sample. Using available data on state debt, we do find effects of term limits, but we are reluctant to report them here because of the inadequacies of the data.

TABLE I

GUBERNATORIAL ELECTIONS, PARTY AFFILIATION, AND TERM LIMITATIONS
1950–1986

Year	Party in office = 1 if Democrat	Incumbent cannot run = 1 if term limit binds	Incumbent Democrat cannot run	Incumbent Republican cannot run
1950	0.60	0.33	0.25	0.08
1951	0.48	0.31	0.25	0.06
1952	0.48	0.33	0.27	0.06
1953	0.38	0.33	0.21	0.13
1954	0.40	0.31	0.21	0.10
1955	0.56	0.29	0.25	0.04
1956	0.56	0.29	0.25	0.04
1957	0.60	0.38	0.27	0.10
1958	0.60	0.40	0.29	0.10
1959	0.69	0.35	0.29	0.06
1960	0.69	0.35	0.29	0.06
1961	0.69	0.33	0.33	0.00
1962	0.69	0.31	0.31	0.00
1963	0.67	0.38	0.29	0.08
1964	0.67	0.38	0.29	0.08
1965	0.65	0.31	0.25	0.06
1966	0.65	0.33	0.27	0.06
1967	0.48	0.27	0.19	0.08
1968	0.48	0.27	0.19	0.08
1969	0.40	0.27	0.19	0.08
1970	0.35	0.25	0.15	0.10
1971	0.58	0.27	0.19	0.08
1972	0.58	0.27	0.19	0.08
1973	0.60	0.25	0.15	0.10
1974	0.63	0.25	0.15	0.10
1975	0.73	0.33	0.25	0.08
1976	0.73	0.35	0.27	0.08
1977	0.75	0.33	0.27	0.06
1978	0.75	0.35	0.29	0.06
1979	0.65	0.21	0.15	0.06
1980	0.63	0.19	0.13	0.06
1981	0.54	0.23	0.15	0.08
1982	0.52	0.21	0.15	0.06
1983	0.67	0.35	0.23	0.13
1984	0.69	0.35	0.23	0.13
1985	0.67	0.31	0.21	0.10
1986	0.67	0.33	0.21	0.13
Mean	0.60	0.31	0.23	0.08

TABLE II
TERM LIMITATIONS BY STATE, 1950–1986

State law:	
States with no term limits	AZ, AR, CA, CO, CT, ID[a], IL, IA, MA, MI, MN, MT, NH, NY, ND, RI, TX, UT, VT, WA, WI, WY
States limiting governors to 1 term in office	KY, MS, VA[b]
States limiting governors to 2 terms in office	DE[c], NJ, OR
State law changed from no limit to 2-term limit (year of change)	KS (1974), ME (1966), MD (1954), NB (1968), NV (1972), OH (1966), SD (1956)
State law changed from allowing 1 term to allowing 2 terms in office (year of change)	AL (1970), FL (1970), GA (1978), IN (1974), LA (1968), MO (1966)[c], NC (1978)[c], OK (1968), PA (1972), SC (1982), TN (1980), WV (1972)
State law changed from 2-term to 1-term limit (year of change)	NM (1972)

a. No term limitation after 1956.
b. Restriction on terms enacted in VA in 1954.
c. Two-term limit over a lifetime. Enacted in DE (1968), MO (1968), and NC (1978).

Table III provides means and standard deviations of the variables in our analysis, with information provided separately for states that had a term limit at some point from 1950 to 1986 and for states that did not. In those states in which governors' terms are limited by law, the limitation leads to a lame-duck governor in office in roughly half of the years in our sample (51 percent of all years). States with term limits are significantly more likely to be governed by Democrats (66 percent of all years versus 51 percent for states without term limits).

We include as explanatory variables state income per capita, the proportion of the population between the ages of 5 and 17, the proportion of the population over age 65, and state population. States without term limits are significantly larger on average. In addition, these states are significantly wealthier, as measured by income per capita. States without term limits have higher income taxes, corporate taxes, and total taxes per capita[5] than states with term limits and have higher state spending levels as well. Given the

5. Total taxes are the sum of sales, income, and corporate taxes. Total taxes per capita are lower than total state expenditures per capita; the difference is made up primarily by additions to the level of state debt outstanding and by intergovernmental grants received.

TABLE III
STATE POLICY AND ECONOMIC VARIABLES, 1950–1986[a]
(STANDARD DEVIATIONS IN PARENTHESES)

	All states All years	States with term limits	States without term limits
Number of observations	1776	1073	703
Sales tax	276.26	275.60	277.27
	(127.43)	(127.59)	(127.27)
Income tax*	96.93	89.68	108.00
	(110.04)	(105.21)	(116.24)
Corporate tax*	32.43	30.81	34.87
	(29.07)	(25.93)	(33.11)
Total tax*	405.33	395.63	420.14
	(198.00)	(187.97)	(211.67)
State spending*	849.74	811.59	907.97
	(392.60)	(367.88)	(421.23)
Minimum wage* ($n = 1769$)	1.85	1.59	2.26
	(1.48)	(1.48)	(1.36)
Maximum weekly benefits* ($n = 1650$)	177.99	162.53	201.83
	(77.99)	(64.66)	(89.93)
State income*	8588.87	8366.10	8928.89
	(2476.72)	(2517.57)	(2374.80)
Proportion elderly (65+) ($n = 1728$)[b]	0.099	0.099	0.100
	(0.020)	(0.022)	(0.018)
Proportion young (5–17) ($n = 1728$)	0.238	0.239	0.236
	(0.030)	(0.030)	(0.029)
State population (millions)*	4.080	3.542	4.902
	(4.210)	(2.673)	(5.726)
Party of governor (=1 if Dem)*	0.598	0.656	0.509
	(0.490)	(0.475)	(0.500)
Governor cannot stand for reelection	0.308	0.510	0
	(0.462)	(0.500)	

*Asterisks denote that the mean of this variable is significantly different in states with and without term limits (p-value < 0.01).
a. All taxes, income, and expenditure are per capita in 1982 dollars.
b. Information on proportion elderly and proportion young was not available for 1959.

economic and demographic differences between states with and without term limits, we will control for state-level fixed effects in all of the results presented below. In this way the effect of having a governor in place who cannot run for reelection is identified from the differences in the state's fiscal behavior when an incumbent can run again, and when one cannot. With the stability observed in the states' laws, we are not identifying the effect of term limits primarily from the change in the composition of states that limit terms but from the variation in a state's behavior when the law

binds and when it does not. In addition, in all estimation we allow for year-specific effects in order to avoid convoluting shocks to the macroeconomy or national political mood with decisions made by incumbents who cannot stand for reelection.

The empirical results of this section are presented in three parts. In the first we present results of conditioning state policy choices on whether the incumbent faced a binding term limit.[6] The second set of results adds information on party affiliation to the analysis. As we argued at the end of the previous section, this may be an important consideration. Here, we add an indicator for the governor's party and variables interacting party affiliation with whether or not a term limit is faced. Finally, we examine the fiscal cycle to which term limits give rise in greater detail.

III.1. Basic Results

The first four columns in Table IV consider the effect of term limits on taxes. We find a positive and significant effect of a governor working under a term limit on the level of state sales taxes (column 1). When a governor faces a term limit, sales taxes per capita will be $7 to $8 higher in all years of this final term. (This is roughly 3 percent of the mean state sales tax.)

Income taxes also rise significantly in states led by governors ineligible to stand for reelection. On average, income taxes per capita are nearly $9 higher in all years of a lame duck's term. This is roughly 7 percent of the average income tax collected in states that have income taxes ($127). There appears to be no effect on corporate taxes, which may explain why we get only weak positive results when we look at total taxes in the fourth column. Overall, the results in Table IV support the predictions of our political agency model.

Results presented in Table IV also suggest that term limits have significant effects on other policy variables as well. Term limits have a positive and significant effect on total government expenditures per capita. We expect that, when a governor faces a term limit, state spending per person will rise by roughly $15. State demographic variables also have significant effects on state spending, which rises with the proportion of young in the population and falls with increases in the proportion who are elderly.

6. The results presented in the tables that follow condition on state economic and demographic variables. Such variables could be endogenous (state income and state population, for example, may be both functions of taxes and determinants of taxes). Hence, we reran all of the results omitting these variables and found qualitatively and quantitatively similar results.

TABLE IV

THE IMPACT OF TERM LIMITS ON TAXES, SPENDING, AND MANDATES,[a] 1950–1986

(*t*-STATISTICS IN PARENTHESES)

	Dep var: sales taxes	Dep var: income taxes[b]	Dep var: corporate taxes	Dep var: total taxes	Dep var: state expenditure per cap	Dep var: state minimum wage[c]	Dep var: maximum weekly benefits[d]
Incumbent cannot stand for reelection	7.86 (2.58)	8.74 (2.54)	0.57 (0.67)	6.71 (1.56)	14.38 (2.10)	−0.14 (2.57)	2.25 (0.83)
State income per capita (1000s)	17.46 (4.58)	9.96 (2.52)	6.60 (5.27)	25.46 (4.87)	3.52 (0.46)	−0.04 (0.88)	8.64 (3.92)
Proportion state population elderly	980.78 (5.38)	20.68 (0.08)	8.36 (0.13)	695.14 (2.74)	−1143.34 (2.21)	−9.22 (3.69)	−1358.73 (6.65)
Proportion state population young	229.57 (2.08)	1564.84 (9.39)	221.38 (5.92)	1590.94 (9.95)	1293.53 (4.00)	0.18 (0.10)	646.86 (6.67)
State population (millions)	−0.99 (1.04)	7.68 (5.02)	2.61 (8.39)	−1.41 (0.62)	−16.70 (4.07)	−0.05 (4.39)	−7.74 (5.90)
R^2	0.8938	0.8721	0.8253	0.9170	0.9397	0.7619	0.7462
Number of observations	1728	1327	1364	1728	1728	1721	1604

a. See notes to Table III for sample information.
All taxes and income are per capita in 1982 dollars.
All regressions include year and state effects. Huber standard errors were used in calculating *t*-statistics.
b. Income tax regressions are restricted to states that have an income tax. Corporate taxes are treated analogously.
c. State minimum wages are in 1982 dollars.
d. Maximum worker compensation weekly benefits are in 1982 dollars.

We also observe a negative and significant effect of a binding term limit on real state minimum wages. Having a governor in his or her last term in office yields a *reduction* of the real state hourly minimum wage of between $0.12 and $0.14 (equivalent to roughly 8 percent of the mean wage for states with term limits). The effect on maximum weekly workers' compensation benefits for temporary total disability is less robust. Without controls (results not presented), there appears to be a significant positive effect. However, this finding is not robust to the presence of controls for state income and demographics.

In summary, term limits do appear to affect policy choices. We view this as consistent with a model where incumbents care about building political reputations when they can run again for office.

Since they care less about reputation when they are unable to run again, they reduce the effort expended to keep taxes and expenditures down. The results in minimum wages and workers' compensation may reflect willingness of governors to resist certain special interests, or the legislature, when they are lame ducks.[7]

III.2. Adding Information on Party Affiliation

We argued above that parties may be important in extending the time horizon of policy-making. Our next step, therefore, is to add information on the party affiliation of the governor. We do so at two levels. We add an indicator variable that equals one if the incumbent is a Democrat. We also interact the party of the governor with the term-limit variable. Results for taxes are given in Table V. We find positive and significant effects of term limits on all taxes if the incumbent is a Democrat. When a Democrat faces a term limit, per capita sales tax and income tax collections are each roughly $10 higher, and corporate taxes roughly $2 higher, on average. Total taxes increase by $10 to $15 on average when an incumbent Democrat is ineligible to stand for reelection. In stark contrast, Republicans ineligible to stand for reelection do not raise taxes significantly in their last term. This suggests that the results observed earlier, in Table IV, were being driven by Democratic governors ineligible for reelection. This is indeed the case: rerunning the regressions in Table IV, restricting the sample to Democratic governors, we find that governors facing a binding term limit significantly increase sales, income, corporate, and total taxes. The results in Table V suggest that the reason we found only weak effects of term limitations on total taxes in Table IV was because we were grouping heterogeneous governors: Democrats, who raise taxes in the face of term limits, and Republicans, who do not. Results in Table V also suggest that when the governor is a Democrat, income taxes rise significantly, independent of term limitations.

Table V also adds party affiliation to our study of other policies. Again, we find much larger effects on expenditures when a Democrat is in office and faces a binding term limit. On average, spending per capita is roughly $17 higher during years that a Democratic governor faces a term limit. We also find an effect of

7. This could go either way. Incumbents in their last term may be able to take a harder line, because they do not care about their reputation in bargaining with these groups. However, they may be more willing to concede to find the path of least resistance.

TABLE V
TERM LIMITS, PARTY AFFILIATION, AND FISCAL BEHAVIOR,[a] 1950–1986
(t-STATISTICS IN PARENTHESES)

	Dep var: sales taxes	Dep var: income taxes[b]	Dep var: corporate taxes	Dep var: total taxes	Dep var: state expenditure per cap	Dep var: state minimum wage[c]	Dep var: maximum weekly benefits[d]
Democratic incumbent cannot stand for reelection	11.25 (3.55)	9.43 (2.56)	1.86 (1.95)	11.30 (2.42)	17.28 (2.17)	0.03 (0.51)	6.41 (2.02)
Republican incumbent cannot stand for reelection	−0.21 (0.04)	4.38 (0.78)	−1.61 (1.23)	−4.28 (0.68)	4.91 (0.50)	−0.46 (5.90)	−4.89 (1.28)
Governor's party (=1 if Democratic)	2.72 (1.02)	8.07 (2.61)	−2.03 (2.30)	4.18 (1.13)	13.39 (2.13)	−0.15 (3.38)	−6.70 (2.42)
Controls included: income per capita, state population, proportion elderly and young	YES	YES	YES	YES	YES	YES	YES
R^2	0.8942	0.8734	0.8261	0.9175	0.9401	0.7660	0.7474
Number of observations	1728	1327	1364	1728	1728	1721	1604

a. See notes to Table III for sample information.
All taxes and income are per capita in 1982 dollars.
All regressions include year and state effects. Huber standard errors were used in calculating t-statistics.
b. Income tax regressions are restricted to states that have an income tax. Corporate taxes are treated analogously.
c. State minimum wages are in 1982 dollars.
d. State maximum worker compensation weekly benefits are in 1982 dollars.

having a Democratic governor on the level of government expenditures, regardless of whether a term limit is faced. Republicans facing term limits do not change state spending levels significantly, consistent with the results observed for taxes.

Republicans in their last term change state policy on minimum wages. This result is much stronger than that presented in Table IV, where all lame ducks were grouped together. When a Republican faces a binding term limit, real minimum wages in the state fall by $0.46 on average. The level effect from having a Democratic incumbent is negative (about $0.15), but there is no additional

effect on minimum wages of having a Democrat in office who cannot run again. Putting in party controls now gives us significant effects on maximum weekly workers' compensation benefits. Democrats in their last term in office raise maximum weekly benefits by almost $10 a week (or 7 percent of the state average). The significance of this effect is robust to the exclusion of state income per capita and demographic variables as controls.[8]

The results that incorporate information about party affiliation confirm that term limits have an effect on policy outcomes. The difference between Democrats and Republicans can be seen as indicative of differences in the way in which the parties select candidates, or else in the internal workings of the parties as a disciplinary device.

III.3. The Fiscal Cycle Induced by Term Limits

Although the results on taxes and spending are consistent with an increasing divergence in the levels of taxes and spending between states with term limits and all other states, such divergence does not occur. Over the sample period 1950 to 1986, the growth rates of state taxes and of expenditures do not differ significantly between states with and without term limits.[9] The main effect of term limits is to generate a fiscal cycle, with incumbents holding spending below the state's mean in their first term in office and spending significantly above the state's mean in the lame-duck term.

To explore this in greater detail, Table VI incorporates indicator variables for each point in the electoral cycle—that a given year is an election year, that next year is an election year, that the election is two years away, or that the election is three years away.

8. There is some regional variation in the effect of term limits. We designated "Southern" states (AL, AR, DE, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA, and WV) using U. S. Census region codes and added to the regressions in Table V an indicator that the governor was a Southern Democrat, and an indicator that the governor was a Southern Democrat who could not stand for reelection. We found that these two indicators were jointly insignificant for sales taxes, income taxes, total taxes, and total state expenditure per capita. However, we found that Southern Democrats held corporate taxes significantly lower, and real maximum weekly workers' compensation benefits significantly higher, than other Democratic governors. Southern Democrats who could not run again for office held minimum wages and workers' compensation benefits significantly lower than Southern Democrats who could stand again for office.

9. We estimate the average annual growth rate of total taxes per capita at 3.9 percent and of state expenditures per capita at 3.7 percent, with no statistically significant difference between term-limit and no-term-limit states. (Note also that states that allow only one term in office are not contributing to the coefficients presented on binding term limits: the effects of their term limits are absorbed in their state fixed effects.)

TABLE VI
Taxes, Expenditures, and the Electoral Cycle
(Standard Errors in Parentheses)

Dependent variables:[a]	Total state taxes per capita			State expenditure per capita		
	All governors	Democratic governors only	Dem govs, term-limit states	All govs	Dem govs only	Dem govs, term-limit states
Explanatory variables:						
Election year X governor can run for reelection	529.67 (10.01)	448.52 (26.72)	449.68 (20.11)	1059.41 (16.36)	1025.99 (19.41)	1027.61 (23.58)
Election next year X governor can run for reelection	528.41 (11.13)	442.93 (27.40)	449.89 (21.24)	1058.93 (17.96)	1019.51 (21.20)	1022.17 (25.93)
Election in 2 years X governor can run for reelection	534.26 (9.78)	452.53 (27.41)	451.78 (21.95)	1049.99 (15.78)	1014.46 (21.33)	1005.93 (28.50)
Election in 3 years X governor can run for reelection	524.84 (11.33)	444.75 (27.69)	450.14 (21.73)	1052.35 (18.40)	1022.05 (22.89)	1027.51 (28.95)
Election year X governor cannot run for reelection	541.25 (9.59)	472.43 (27.56)	469.85 (21.23)	1075.08 (15.73)	1045.18 (22.43)	1043.57 (26.50)
Election next year X governor cannot run for reelection	536.60 (9.91)	464.71 (27.74)	463.31 (21.65)	1065.50 (16.16)	1033.85 (23.18)	1034.77 (27.23)
Election in 2 years X governor cannot run for reelection	536.54 (9.29)	466.82 (27.53)	465.29 (21.33)	1072.31 (15.48)	1040.34 (22.17)	1039.59 (26.29)
Election in 3 years X governor cannot run for reelection	533.76 (10.04)	460.59 (27.73)	457.88 (21.57)	1084.45 (16.53)	1053.71 (24.34)	1051.64 (28.74)
F-test: (cycle X can run) = (cycle X cannot run)[b]	1.15 (.3312)	4.04 (.0029)	2.55 (.0383)	2.39 (.0486)	1.87 (.1141)	1.59 (.1742)
F-test: (election year X cannot run) = (election next year X cannot run)	0.57 (.4498)	1.46 (.2265)	1.15 (.2843)	0.90 (.3441)	1.01 (.3163)	0.65 (.4222)
F-test: (election year X cannot run) = (election in 2 years X cannot run)	0.67 (.4132)	0.78 (.3780)	0.58 (.4455)	0.08 (.7788)	0.21 (.6499)	0.15 (.6988)
F-test: (election year X cannot run) = (election in 3 years X cannot run)	1.22 (.2693)	3.44 (.0639)	3.72 (.0544)	0.65 (.4190)	0.47 (.4950)	0.42 (.5185)
State and year indicators	yes	yes	yes	yes	yes	yes
Number of observations	1776	1062	637	1776	1062	637

a. All regressions reported with correction for heteroskedasticity (Huber standard errors).

b. This F-test is a joint test of the equality of the following coefficients: (election year X can run) = (election year X cannot run), (election next year X can run) = (election next year X cannot run), (election in 2 years X can run) = (election in 2 years X cannot run), (election in 3 years X can run) = (election in 3 years X cannot run). (p-values are printed in parentheses for each F-statistic.)

It also allows these effects to vary for governors who are facing binding term limits. The pattern of coefficients gives us further insight into the electoral cycle.[10] Columns 1 through 3 of Table VI present results on taxation for all governors in all years (column 1), for all Democratic governors (column 2), and for Democratic governors in states with term limits (column 3). Consistent with the results presented above, the results in columns 2 and 3 for Democratic governors suggest that taxes are higher in the years in which the governor is a lame duck. An F-test rejects that, for Democratic governors taken as a group, the regression coefficients on different years in the electoral cycle are identical for governors who may run again and for governors who cannot ($F = 4.04$, p-value $= 0.0029$).

The presence of an electoral cycle within a term in office can be explored by testing whether the coefficient on a lame duck in the year he must leave office (election year X governor cannot run again) is significantly different from the coefficient for lame ducks in the year prior to the election, and in the years prior to that. We do not find much evidence of within-term variations in the year indicators for governors who can and cannot run. In fact, there is no significant difference in the coefficients for the Election year and Election next year coefficients for lame ducks, or for Election year and Election in two years time coefficients. The only exception is the significant difference between the Election year indicator and Election in three years time indicator; taxes are significantly lower at the beginning of the lame duck's term than at the end. The theory makes no particular prediction of this kind. However, it could be explained if it takes time to fully incorporate lower gubernatorial "effort" into taxes. No similar timing effect is found in state spending (columns 4–6). Spending appears to be higher by a (roughly) constant amount in all lame-duck years. Table VI finds no evidence of significant patterns across the years for incumbents who can run again. Even if one suspects that voters weight more heavily the most recent gubernatorial performance, it does not seem to result in a discernible behavioral pattern.

Overall, the most pronounced pattern continues to be between terms where the governor can and cannot run again. Figure I illustrates the resulting fiscal cycle for Democratic governors in states with term limits. It plots coefficients on indicator variables

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10. In these results, governors in states with two-year electoral cycles contribute information to only the Election year and Election next year indicators. Note also that all regressions continue to include state and year indicators.

State Expenditure Per Capita

1 = 1st year nonlame-duck term, 5 = 1st year of lame-duck term.
TERM LIMIT STATES, DEMOCRATIC GOVERNORS

Total Taxes Per Capita

1 = 1st year nonlame-duck term, 5 = 1st year of lame-duck term.
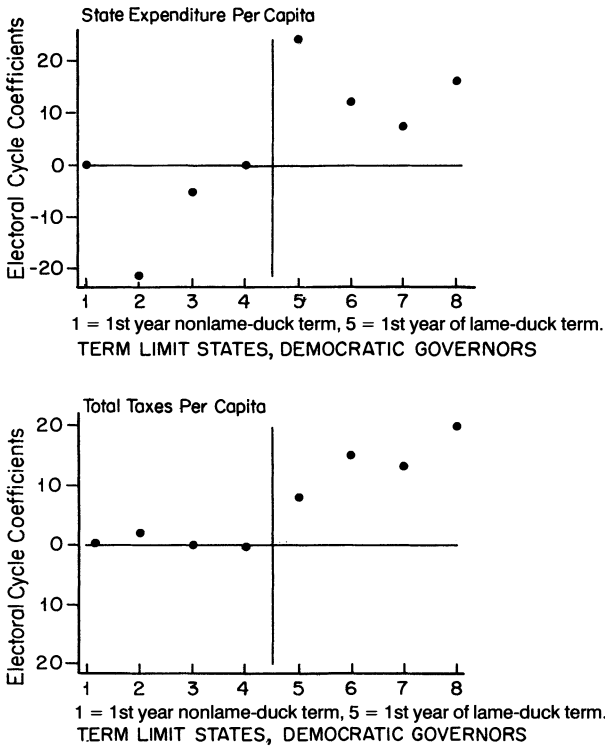TERM LIMIT STATES, DEMOCRATIC GOVERNORS

FIGURE I
The Impact of Term Limits on State Spending and Taxation

that a governor is currently in his first (second, third, etc.) year in office, taken from columns 3 and 6 of Table VI. This figure also illustrates a prediction from the model of Section II, if we interpret r as taxes and spending.[11] Governors hold taxes and expenditures low in their first term (providing a high value of r), and voters allow them a second term. At that point the governors care less about putting in effort, resulting in increased taxes and spending.

IV. EXTENSIONS AND DISCUSSION

This section considers some extensions of the earlier results, which cast further light on the interpretation of our findings. First,

11. This assumes a rather pessimistic view in which voters view government spending as valueless.

we look at how governors facing term limits behave in the face of an exogenously imposed need to increase public expenditures and taxes, by examining their behavior following a natural disaster. We also relate our results to the earlier literature on congressional retirements. Finally, we consider directly whether term limits impose a cost on state economies. We show that there is a negative and significant effect on state income per capita. In light of this we discuss why we might actually see term limits in practice.

IV.1. Term Limits and Natural Disasters

Another look at our results is offered by gubernatorial behavior at points where the governor has to raise expenditure for exogenous reasons. Natural disasters provide exogenous shocks to state economies that require spending on infrastructure and public welfare. They may therefore affect voters' perceptions of tax increases, changing the relationship between taxation, spending, and reelection chances. A governor may no longer be penalized for increasing taxes if the proceeds are used in ways that voters perceive to be necessary. The differences between lame-duck and other governors' responses is again interesting, since we would expect their incentive to please voters to be different.

We identify natural disasters from disaster relief data collected from the *Small Business Administration*'s (SBA) disaster loan program. A description of disaster relief efforts can be found in Appendix 2. Virtually all states received some disaster relief assistance from the SBA in this period. Figure II provides a picture of the loans. Each year, a few states have large disasters—floods, hurricanes, blizzards, earthquakes—for which the SBA makes a substantial number of relief loans available to households and small businesses. The largest loans are highly visible in Figure II. In fiscal year 1966, for example, Louisiana and Colorado were the largest recipients. In September 1965 Hurricane Betsy hit New Orleans, causing catastrophic damage. Outlying parishes were especially hard hit. Estimates of storm damage in Louisiana exceeded $1 billion. In Colorado in June 1965 heavy storms brought major flooding on both the South Platte and Arkansas rivers. Damage estimates topped $100 million. In FY 1973 South Dakota was a large recipient, as were the states along the eastern seaboard—Pennsylvania, New York, Virginia, and Maryland. In June of 1972 the eastern United States was pounded by Hurricane Agnes. President Nixon declared the existence of major disasters in Florida, Virginia, Maryland, Pennsylvania, and New York. Shortly

FIGURE II
Disaster Loans 1954–1980

afterward, West Virginia and Ohio were also recognized as disaster areas caught in Agnes' wake. In South Dakota the Rapid Creek flooded Rapid City in June 1972, killing more than 230 people and causing physical damage in excess of $120 million.

Most states, however, received more modest amounts of disaster relief. The disasters underlying even the smaller loans are still potentially large enough to affect the state's needs. For example, if a flood washes away parts of a state's infrastructure, the state may need to mobilize additional resources in order to dig out and rebuild. There are potentially many different ways of using these data to construct measures of whether a state faces a disaster. We choose to do so by constructing a categorical variable that equals one if SBA disaster loans per capita in that year were in the top quartile of disaster loans to all states in all years. There is nothing special about choosing the top quartile, and the results do not appear too sensitive to this choice over a reasonable range.[12] A list of states facing natural disasters is provided in Appendix 3.

Table VII provides a summary of results for the effect of natural disasters on total taxes and total state expenditures.[13] Columns 1 and 4 demonstrate that state taxes and spending increase significantly during a natural disaster, with tax and

12. Our results are robust to choosing a cutoff between the sixtieth to the eightieth percentile of disaster loans to all states in all years.
13. Results are similar if we control also for state income per capita and state population. Results are similar if we regress taxes and spending on an indicator of a disaster last year.

TABLE VII
THE IMPACT OF TERM LIMITS AND NATURAL DISASTERS ON FISCAL BEHAVIOR
(*t*-STATISTICS IN PARENTHESES)

Dependent variables:[a]	Total state taxes			Expenditure per capita		
Explanatory variables:						
Incumbent cannot run for reelection	13.97 (2.72)	·18.55 (3.38)	—	11.85 (1.44)	15.99 (1.86)	—
Democratic governor cannot run	—	—	27.56 (4.61)	—	—	17.59 (1.81)
Republican governor cannot run	—	—	−0.80 (0.11)	—	—	4.28 (0.37)
Natural disaster	12.65 (3.20)	—	—	17.26 (2.57)	—	—
Disaster X incumbent cannot run	—	0.52 (0.08)	—	—	6.29 (0.58)	—
Disaster X incumbent can run	—	17.19 (3.70)	—	—	21.36 (2.72)	—
Disaster X Dem incumbent cannot run	—	—	−4.99 (0.65)	—	—	7.09 (0.58)
Disaster X Rep incumbent cannot run	—	—	14.98 (1.42)	—	—	−3.74 (0.19)
Disaster X Dem incumbent can run	—	—	16.58 (2.87)	—	—	13.15 (1.35)
Disaster X Rep incumbent can run	—	—	18.49 (2.35)	—	—	28.20 (2.30)
Governor's party = Democratic	—	—	−3.48 (0.86)	—	—	9.94 (1.44)
State and year indicators	yes	yes	yes	yes	yes	yes
R^2	.9218	.9221	.9229	.9426	.9426	.9429

a. All taxes and expenditures are in per capita 1982 dollars. Total state taxes are the sum of state sales, income, and corporate taxes. Expenditures per capita are the sum of all state spending. Data are from years 1954 to 1980, with the omission of 1976 (1248 observations in each regression).

All regressions are reported with correction for heteroskedasticity (Huber standard errors).

spending increases in the range of $15 per capita.[14] Columns 2 and 5 demonstrate that it is only governors who may run for reelection who change their behavior in the face of a natural disaster. Lame ducks, who increase taxes and state spending independently of a disaster, do not increase taxes or spending further in response to a disaster. Columns 3 and 6 of Table VII allow Democratic and Republican governors to differ in their responses. It appears that the Democratic lame ducks, that is, those governors who increased spending and taxes in the face of binding term limits, are least

14. Increases in state spending in the face of natural disasters are concentrated in highway and public welfare spending. Additional results are available from the authors.

likely to change their behavior when disaster strikes. Republicans who may stand again increase taxes and spending most significantly during such crises, and there is weak evidence that Democrats who may run again and Republicans who cannot also respond to disasters. If tax and expenditure increases are necessary when a disaster strikes, as column 1 suggests, then nonresponse by Democrats who may not stand for reelection is further evidence that this group may not be responding to voter interests, as the theory suggests. Both Democrats and Republicans who can run again behave similarly in the face of disasters.

The size of the tax increases is roughly the size of the disaster loans received. On average, a disaster as defined above leads to an inflow of SBA loan monies of $45 million (in 1982 dollars). Taking from column 1 an estimate of the impact of such a disaster on total taxes ($12.65 per capita), we find on average that taxes increase by roughly $50 million in the year following the disaster and spending increases by roughly $70 million on average. Although it is difficult to gauge this without further information on money received directly from the Federal government, it does not appear that the tax and spending increases are out of line with size of the disaster.

IV.3. Term Limits versus Retirements

It is interesting also to examine the behavior of governors who retire voluntarily. Since they too are in their last term, perhaps they behave as those who face binding term limits. In fact, much of the existing literature on term limits has used *announced* retirements to identify term limit effects.[15] It is also interesting to think about life after governorship, which we referred to above. Some individuals run for other offices after they step down. Since this extends their time horizons, we would predict that these governors would try to build their reputations even though they actually retire.

These issues are investigated in Table VIII, for total taxes and expenditures per capita. In addition to the usual term-limit indicator, we include retirements separately. The latter are divided into two groups, those who do and do not run for Congress. Interestingly, we do not find any retirement effect among those who retire and do not run for Congress. This is consonant with the

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15. For a review and extension of the literature on legislators, see Lott and Davis [1992]. Standard practice in that literature is to look at the effect of announced retirements on congressional voting records as published by such Congress watchers as Americans for Democratic Action.

TABLE VIII
TERM LIMITS, RETIREMENTS, AND CONGRESSIONAL BIDS,[a] 1950–1986
(*t*-STATISTICS IN PARENTHESES)

	Dep var: total state taxes per cap				Dep var: state expenditure per cap			
Governor cannot stand for reelection	7.97 (1.83)	—	—	8.21 (1.87)	17.98 (2.60)	—	—	18.52 (2.68)
Governor retires and does not run for Congress	—	3.13 (0.59)	—	3.83 (0.72)	—	7.27 (0.75)	—	8.83 (0.92)
Governor retires and does run for Congress	—	—	−9.27 (1.65)	−9.20 (1.64)	—	—	−25.07 (2.50)	−24.91 (2.49)
R^2	.9102	.9101	.9102	.9104	.9374	.9372	.9374	.9377
Number of observations	1776	1776	1776	1776	1776	1776	1776	1776

a. Taxes and income are per capita in 1982 dollars.
All regressions include year and state effects. Huber standard errors were used in calculating *t*-statistics.

congressional literature, as reviewed, for example, in Lott and Davis [1992]. The absence of a retirement effect is usually attributed to the effects of sorting; i.e., the fact that over time there is sorting with only the good politicians surviving to retirement age (see Lott and Reed [1989]). Such effects could explain the lack of a retirement effect in the gubernatorial data too. As we conjectured, incumbents who will run for Congress at the end of their current gubernatorial term significantly hold taxes and spending down.[16] This is consistent with the results in Peltzman [1992] and Besley and Case [1995] in which voters penalize incumbents who are big taxers and spenders. Besley and Case [1995] build a model in which it is rational for voters to impose these penalties because of an adverse selection effect from higher taxes; the latter are more likely to be set by rent-seeking incumbents. Thus, our finding on governors who run for Congress is quite consonant with the idea that incumbents are trying to build reputations as good political agents.

To summarize, we continue to get positive effects from those

16. Care should be taken in interpreting this coefficient. We cannot measure intentions to run again, only whether the incumbent *actually* ran. There may be a bias toward our finding if only those who hold down taxes are actually able to run, even though many other incumbents may have harbored such intentions.

TABLE IX

THE IMPACT OF TERM LIMITS ON STATE INCOME PER CAPITA,[a] 1950–1986

DEP VAR: LOG (STATE INCOME PER CAPITA)

(t-STATISTICS IN PARENTHESES)

Democratic governor (=1)	−0.0011	−0.0011
	(0.28)	(0.35)
Dem gov who cannot run for reelection	−0.0218	−0.0115
	(4.29)	(2.91)
Rep gov who cannot run for reelection	0.0069	−0.0009
	(0.98)	(0.14)
State demographic vars?[b]	no	yes
Year effects?	yes	yes
State effects?	yes	yes
Number of obs	1776	1728
R^2	.9585	.9713

a. Huber standard errors.
b. State population, proportion population elderly, and proportion population young.

who face a binding term limit even when we break out retirements from those who face such limits. However, the results in Table VIII suggest grounds for caution in using the earlier evidence on announced retirements for conjecturing what would happen if a term limit were introduced into Congress.

IV.4. Costs and Benefits of Term Limits

Our analysis so far has been purely positive. However, if a Democratic incumbent who is ineligible to stand for reelection holds taxes and spending down in his first term in office, and raises taxes and spending to a high level in his last term in office, then this suggests an inefficiency. In particular, a distortion in resource mobilization and public good provision may arise if the marginal deadweight loss of taxation is increasing in taxes raised.[17] We would expect this to show up in lower state income per capita when a lame-duck Democratic governor is in office. Table IX presents the results of regressions of log state income per capita on indicators for whether the governor is a Democrat, a lame-duck Democrat, or a lame-duck Republican, together with year indicators, state indicators, and (in column 2) demographic information about the state. States led by Democrats show no difference in state income per capita, while those led by a lame-duck Democrat show a negative and significant effect on income per capita, controlling for

17. That the deadweight loss depends upon the square of the tax rate is a standard proposition in public finance. Barro [1979] exploited this to argue that governments would ideally avoid cyclical changes in taxes.

state effects and year effects.[18] If we attribute the whole of this to the marginal excess burden of taxes, then this would imply a marginal excess burden of around 50 percent for total taxes, which is in the mid-range of existing estimates (see, for example, Browning [1987]).[19]

Our results, especially those on state income, might lead one to wonder why term limits exist at all. Of course, recent debates and ballot propositions do suggest that they are popular among voters as far as Congress is concerned. Perhaps the most compelling argument in favor of term limits is that they reduce the entrenchment problem in politics. Long-lived incumbents might entrench themselves by amassing certain kinds of political capital that subvert the efficacy of electoral discipline. In this case, the introduction of term limits is beneficial in the long run, reducing the accumulation of certain kinds of political capital.[20] On the other hand, it is conceivable that the effect of term limits is imperfectly understood by voters and others. We were certainly unaware that there were significant policy effects from term limits before we undertook this research.

V. CONCLUDING REMARKS

This paper has shown that gubernatorial term limits have a significant effect on economic policy choices. This is consistent with a model where incumbents who are eligible to run again care about building their reputations. This confirms that analyses which focus on political reputation-building to explain features of policy choice are a fruitful way to understand political competition. A corollary of this is that predicting which policies actually get chosen requires

18. Although we find that states led by Democratic lame ducks have lower state incomes per capita, we find no evidence that term limits reduce the *growth* rate of state incomes per capita. This would be true if there were a constant effect of a term limit on income. States that were alternating between having the term limit binding and then not binding would have an alternating positive and negative effect on the difference in per capita incomes, netting out to zero. We ran regressions of the change in log state income per capita on: (i) an indicator that the state has term limits, with and without allowing for differences in log income per capita in 1950, year effects, and state demographic variables; and (ii) indicators that the state is currently run by a governor who cannot stand for reelection, allowing separate effects for Democrats and Republicans, with and without state fixed effects and year effects and state demographic variables. In none of our specifications did we find a significant effect of term limits on state growth rates. While such effects could be predicted from some endogenous growth models, the theoretical link between growth and deadweight losses from taxation is less well established than the level effect that is borne out by Table IX.

19. Taxes increase by around 2 percent per year, and the effect on per capita income is around 1 percent.

20. See Shleifer and Vishny [1989] for discussion along these lines in the case of corporate managers.

an understanding of how enacting them enters the incumbents' probability of reelection function. This reinforces the importance of research in which such things are studied empirically using state level data. Some research in this direction is already available for expenditures and taxes in Peltzman [1992] and Besley and Case [1995]. However, the domain of policies over which the link between implementation of economic policies and electoral success can be studied is ripe for expansion.

APPENDIX 1

Data used in our analysis come from several sources. Data on taxes are taken from the *Statistical Abstract of the United States,* published by the Bureau of the Census. Sales taxes are per capita "general sales or gross receipts"; income taxes per capita are "individual income" taxes; corporate taxes per capita are "corporation income" taxes; and our measure of total taxes per capita is the sum of sales, income, and corporate taxes per capita. Data on total state expenditures per capita were collected by Diane Lim Rogers and John Rogers, and are per capita "total general expenditures" reported annually by state in the *Compendium of State Government Finances.* Data on workers' compensation benefits are the maximum weekly workers' compensation benefits for temporary total disability, reported in the *Analysis of Workers' Compensation Laws* for years, 1952, 1954, 1956, 1958, 1960, 1961, 1962, 1966, and 1970–1986, and reported in *The Book of the States* for years, 1951, 1953, 1955, 1957, 1959, 1963, 1965, 1967, 1969, and 1976. State minimum wages were collected primarily from the *Monthly Labor Review.* These data were augmented with data from *The Book of the States and the Report of the Minimum Wage Study Commission.* State minimum wages are generally lower than the federal minimum wage. However, the federal minimum wage law exempts workers in business establishments that do not meet the federal "enterprise test" because their sales fall below a specified minimum level. To the extent that a state minimum wage provides coverage for workers who are not covered by the federal minimum wage, the level of the state minimum wage provides an indicator of the generosity of a state-level mandate.

Data on state population and data on state income per capita ("personal income per capita") are taken from the *Statistical Abstract of the United States.* The proportion elderly is the fraction of state population greater than or equal to age 65, and the proportion young is the fraction of state population between the ages of 5 and 17. Both series are drawn from *Statistical Abstract of*

the United States and the *Current Population Report* published by the Bureau of the Census. Information on the governor's political party and on gubernatorial term limits are from *The Book of the States*.

APPENDIX 2

Our data on natural disasters come from two sources. For 1954–1975, data on natural disasters are the sum of SBA business and home disaster loans approved for each fiscal year. These data were published in a report from Louis F. Laun, Acting Administrator of the U. S. Small Business Administration to Hon. Joseph P. Addabbo, Chairman, Subcommittee on SBA Oversight and Minority Enterprise, Committee on Small Business, House of Representatives (see United States Congress [1975, 1976]). For 1977–1980 data are SBA physical disaster loans reported by the Executive Office of the President [1981]. Our analysis of natural disasters ends in 1980 because of the change in data reporting that occurred after the organization of the Federal Emergency Management Agency (FEMA) in 1979.

Prior to the organization of FEMA in 1979, relief following natural disasters came from many agencies. A prototypical example of the sources of aid is found in the list of agencies and departments that assisted West Virginia, Kentucky, Virginia, and Ohio following a major flood in April, 1977:

The President declared the situation a major disaster in the affected portions of these states, thereby making Federal disaster assistance available. Those Federal agencies involved included:
1. Corps of Engineers (debris clearance);
2. Department of Labor (unemployment assistance);
3. Department of Housing and Urban Development (temporary housing);
4. Environmental Protection Agency (consultation on the repair or reconstruction of sewage treatment facilities);
5. Federal Highway Administration (participation in surveying of damaged or destroyed streets, roads and bridges);
6. Small Business Administration (loans to businesses and homeowners); and
7. Farmers Home Administration (loans to agricultural concerns).[21]

In the 1970s more than 25 Federal agencies provided 85 different types of disaster assistance. However, of these many channels through which disaster relief was administered, the SBA was thought by many to be "the lead agency in disaster relief."[22]

Many states received small amounts of SBA aid annually. In

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21. See United States Congress [1977, p. 322].
22. Hon. Lloyd Meeds, Representative in Congress from the State of Washington (see United States Congress [1977, p. 2]).

hearings before Congress, eligibility for disaster loans was charac-
terized: a disaster declaration is made by "administrative deci-
sion," with the criterion "a very small figure, five businesses or 25
homes that would have 60 percent or more damage."

APPENDIX 3: NATURAL DISASTERS 1954–1980

Year	States
1954	none
1955	NV, NC, SC, RI
1956	NC, NJ, OK, PA, CA, OR, RI, NV, MA, CT
1957	NV, KY
1958	LA, ND
1959	KS
1960	SD
1961	MS, NH, AR, FL
1962	VA, NC, WV, FL, ID, MD, VT, NJ, TX, DE
1963	KY, NJ, DE, WV
1964	KY, WA
1965	CA, IA, ID, CO, FL, NH, OR, WA, MT, MN, VT
1966	MO, SD, OR, FL, AZ, LA, CA, MS, MN, CO, KS, WA, VT
1967	AZ, VT, LA, KS, WV
1968	TX, NB, MI, AZ, MA, MS, RI
1969	IA, ND, CA
1970	VA, TX, AL, MS, ND, LA, ME
1971	MS, TX, ND, CA, AZ, LA, NB, IA, OK
1972	MS, NJ, MD, SD, PA, NY, TX, CA, ME, WV, MA, NH, WA
1973	NY, MD, OH, AL, TX, NJ, MN, CT, IL, CA, TN, MI, IA, WI, VT, SD, MS, PA, VA, NH, FL, WA, AZ, MA, GA, ME, NM, WV, RI, MO
1974	IL, TN, OR, VT, ID, IN, WI, OK, MN, CO, OH, KY, KS, SC, NB, ME, TX, IA, LA, AL, MI, NM, NY, GA, SD, MS, PA, MO, NH, AR, NJ, MA, CT
1975	KY, TN, CO, IN, ME, AL, AR, MO, OK, MS, OH, LA, NB, IA, IL, GA, NJ, ID, MD
1977	GA, WV, FL, ID, MT, RI, CO, NJ, NY, PA, LA, VT, VA, MD, KY, CT, MA, NB, MO, CA, MN
1978	WY, ND, OR, WI, MT, IN, SD, MI, CT, MN, KY, NJ, AR, VA, AZ, WV, PA, NH, NY, TX, FL, CA, NC, RI, ME, WA, MO, ID, MA, KS, TN, NB, AL, SC, MS, GA, IA
1979	WV, NJ, MD, VA, ME, WI, IN, CT, IL, MO, WA, MT, MN, IA, CA, KY, RI, AZ, MI, NB, NY, MA, TN, WY, AL, AR, ND, SD, ID, KS, LA, NM, MS, OK, TX
1980	OR, SD, IL, SC, MI, WV, MA, MT, AR, TN, AZ, IA, NC, VA, IN, FL, KS, CT, MD, LA, NB, CA, OK, WA, ID, MS, NM, TX, AL

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