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Abstract

This paper investigates whether gubernatorial elections affect state governments' accounting choices. We identify two accounts, the compensated absence liability account and the unfunded pension liability account, which provide incumbent gubernatorial candidates with flexibility for manipulation. We find that in an election year, the liability associated with compensated absences and unfunded pension liabilities are both systematically lower. We also find that the variation in these employment related liabilities is correlated with proxies for the incumbent's incentives and ability to manipulate their accounting reports. Jointly these results suggest that state governments manipulate accounting numbers to present a healthier financial picture in an election year.

1. Introduction

This paper investigates whether political events affect accounting choices made by U.S. states in the preparation of their annual financial statements. Historically, when incumbents run for reelection, the fiscal performance of the governmental entity during their term is an important part of the election platform. For example, Brender [2003] finds evidence that fiscal performance influences the outcome of mayoral election results in Israel during the 1990's.[1] Brender and Drazen [2008] build on this result providing evidence that in democracies, incumbents increase their probability of re-election by 7-9% if they increase the surplus to GDP ratio by 1%. These results raise an interesting issue: do incumbents manage the outputs of the governmental financial reporting system to influence the outcome of elections?

To answer this question, we focus on gubernatorial general elections during the period 2000-2008. We collect state level financial data and search through the financial reports to identify accounts in which the accounting standards provide gubernatorial candidates with sufficient flexibility to allow for manipulation. Since states follow governmental accounting, there are no profit and loss statements. Thus we instead focus on state deficits and attempt to identify accounts that will impact this difference. This choice is consistent with Brender and Drazen's [2008] observation that "voters, especially in developed countries and established democracies, do not like deficits."

While there are a variety of potential candidate accounts, we ultimately focus on liabilities associated with the state's work force. Specifically, our main analysis focuses on the liability associated with compensated absences, and in supplemental tests we examine the

[1] Similarly, Peltzman [1992] finds that in state governor elections, the proportion of votes received by the incumbent governor's party is affected by measures of the states' fiscal performance. In particular, he finds in states that spend more the incumbent's party receives a disproportionately smaller share of votes. In a cross-country study, Alesina et al. [1998] find consistent evidence that voters value responsible fiscal policies.

liability associated with unfunded pension liabilities (i.e., unfunded actuarial accrued liability or UAAL). We believe that focusing on specific accounts, and in particular these two accounts, has several advantages. For example, both of these liabilities are relatively large and provide preparers with an opportunity to use discretion. We find that the compensated absence account balance is roughly 3% of the average state's total liabilities, and over four times of the average state's general fund balance. The magnitude of the unfunded pension liability is even larger. It is on average 57% of a state's total liabilities and over 90 times of a state's general fund balance. In addition, by focusing on specific accounts, we develop relatively better models of the non-discretionary portion of the account balances, and obtain less noisy measures of the extent to which an entity has engaged in earnings management.[2]

Our primary hypothesis is that the discretionary components of the liabilities associated with compensated absences and unfunded pension will be smaller (more negative) in the fiscal year prior to an election. We also conjecture that the extent of the accounting discretion used in an election year will also depend on the incumbent parties' incentives and ability to manipulate their financial reports. Specifically, states in relatively poor financial health or states with strict budget restrictions have stronger incentives to use discretion to reduce their liabilities; as these states have stronger incentives to improve the voter's perception of the incumbent and will be reluctant to cut spending or increase taxes in an election year to meet the budget requirement.

We expect the incumbent parties' ability to manipulate accounting information in an election year will be smaller for states with more independent state audit agencies and more independent state controllers.[3] We use whether state auditors (controllers) are elected by citizens

[2] See McNichols and Wilson [1988] for a similar discussion in the context of provision for bad debts.

[3] For most states, state auditors conduct audits of the state's annual reports. Even if they do not conduct a traditional financial audit of the annual report (such as Delaware), state auditors are still responsible for evaluating the state's fiscal accountability. Different states have different names for their state audit agencies. For example, for Alabama

or appointed by state governments as a proxy for auditor (controller) independence. We argue that state auditors who are elected are more likely to conduct high quality audits and thus less likely to afford the state government discretion. Similarly, we expect elected controllers to be more independent and less likely to prepare biased financial reports.

To provide evidence on these hypotheses, we obtain information on the liability associated with compensated absences, unfunded pension liabilities, state payrolls, elections, auditors, controllers, and other control variables from several public data sources (detailed below) over the period 2000-2008. We first develop a measure of the extent to which the liability for compensated absences has been manipulated by modeling the change in this account balance as a function of the change in the payroll for the state's full-time employees, changes in the state's employee benefit policies, and a series of control variables. The residuals from this regression reflect the unexplained change, and serve as our measure of the "discretionary" portion of this liability. We then investigate the extent to which the discretionary portion of the account balance varies with our hypothesized determinants. In the supplementary analysis section, we conduct a similar test for the unfunded pension liability.[4]

Focusing on our primary analysis on the compensated absence liability, we find that the change in state payrolls and our measures of changes in employment policies are statistically significant and correlated with the change in the compensated absence liability in the hypothesized direction. In particular, we find that compensated absences liability tends to increase when state employee payroll increases and the account balance tends to decrease when

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the audit agency is called Department of Examiners of Public Accounts. For Indiana, it is called State Board of Accounts. For brevity, we will henceforth collectively call these agencies state auditors.

[4] The control variables we select in determining the "normal" or unmanipulated portion of each of these accounts vary as we expect that there are different economic forces that shape these liabilities. For example, the unfunded pension liability is likely to be affected by changes in return on pension assets, while these returns will have no effect on the compensated absence account balance.

the state has potentially employed policies to reduce employee benefits. The model explains a significant portion of the variation in compensated absences liability, and so the residuals are reasonable estimates for the discretionary components of the account.

In support of our primary hypothesis, we find that the discretionary component of the change in compensated absences is smaller in the fiscal year right before a gubernatorial election. Compared to a non-election year, state governments on average abnormally accumulate $23.9 million dollars less in compensated absences in an election year. This is consistent with state government using accounting discretion to reduce liability balances before an election to present a healthier financial look of the state.

We also find results that are consistent with our hypotheses that the extent of accounting manipulation in an election year is associated with the governor's incentives and ability to manipulate accounting information. The manipulation in compensated absence liability is larger in states that expect to have poorer financial health and in states that have stricter balance budget requirements. We also find that states will be less likely to use accounting discretion in an election year when the state has independent controllers or auditors.

As we mention above, we conduct a set of supplemental tests on the liability associated with unfunded pension obligations. Since our primary analysis focuses on a specific account, we include these supplemental analyses to reduce the concerns that we are capturing a correlated omitted variable in our primary analysis. Specifically, we develop a model of the non-discretionary portion of the unfunded pension liability and use the residual from this regression as our alternative measure of accounting discretion. Consistent with the findings in compensated absences liability, we find that state governments make accounting choices to reduce unfunded pension liability in election years. Relative to non-election years, states on average recognize

$474 million dollars less in unfunded pension in election years. The extent to which such accounting discretion is used is correlated with both of our measures of the incumbent's ability to use accounting discretion and one of our measures of the incumbent's incentives to use accounting discretion (expected fiscal performance). We find that our proxy for the strictness of the balanced budget requirements is not significant in this analysis. The mixed results on this variable are likely to be attributable to the difficulty in measuring the extent to which states have balanced budget requirements, and thus we caution the interpretation of this variable. Overall, the results of the supplementary analysis on unfunded pension are consistent with our main tests, reducing concerns that we are simply capturing correlated omitted variables.

Our findings that elections influence outcomes of state financial reporting processes closely relates to two streams of literature. The first investigates accounting choices in state and local governments. Most of this literature focuses on the general accounting practices of the governments. For example, Zimmerman [1977] examines the determinants of the diverse municipal accounting practices in the 1970s. Evans and Patton [1983] identify economic incentives that lead to cities voluntarily providing high quality accounting. Baber [1983], Baber and Sen [1984], and Ingram [1984] argue that the cross-sectional variations in public sector accounting and auditing practices reflect demands for better monitoring. Evans and Patton [1987] provide counter evidence, suggesting that signaling is the main reason for the diversity of governmental financial reporting quality. Our paper adds to the literature suggesting that political incentives influence the outputs of the financial reporting process of state governments.

The second stream of research examines accounting choices and political costs. Watts and Zimmerman [1978] argue that large firms are more visible and thus subject to adverse political actions. To reduce political costs, firms select accounting procedures to minimize

reported earnings. Jones [1991] examines firms' accounting choices during import relief investigations, providing evidence that firms manage earnings downward to increase the likelihood of obtaining import relief. Ramanna and Roychowdhury [2010] find outsourcing firms with ties to candidates in the 2004 Congressional elections use income-decreasing accruals in the periods immediately preceding the election. They argue that corporate donors manage earnings downward to avoid negative political scrutiny over outsourcing. Similarly, Chaney et al. [2011] and Leuz and Oberholzer-Gee [2006] suggest that the extent to which firms are politically connected affects their accounting report quality and source of financing. By studying how elections affect the accounting choices made in the public sector, we add another dimension to the literature investigating the connection between political processes and accounting.

In conclusion, our paper offers an important next step in both the broad accounting choice literature, and more specifically, in the political cost hypothesis within this literature. The literature on accounting choices largely focuses on private sector enterprises. Given the recent heightened concerns over states fiscal performance, it seems reasonable to extend this literature to the outputs of the state financial reporting process. We suggest that our paper adds to this literature by identifying specific accounts likely to be manipulated prior to an election, and by investigating factors likely to affect state governments' accounting choices.

The rest of this paper is organized as follows: Section 2 provides background information on governmental accounting and the accounting for compensated absences. Section 3 develops hypotheses. Section 4 describes the data and the model of the discretionary component of compensated absences. Section 5 provides our main results and Section 6 provides robustness tests. Section 7 provides a supplementary analysis on unfunded pension obligations and Section 8 concludes the paper.

2. Background

2.1 The role of financial reporting for state governments

Established in 1984, the Government Accounting Standards Board (GASB) is the primary authority for setting financial reporting standards for governmental entities, including states, cities, towns, villages, school districts, and public utilities. GASB's first concepts Statement, Objectives of Financial Reporting, sets the foundation of governmental financial reporting in the United States. The Statement states, "Financial reports are used primarily to compare actual financial results with the legally adopted budget; to assess financial condition and results of operations; to assist in determining compliance with finance-related laws, rules, and regulations; and to assist in evaluating efficiency and effectiveness." (GASB, 1987) Therefore, governmental accounting emphasizes accountability rather than profitability.

In this paper, consistent with the GASB's objectives, we focus on the role of the financial statements as a tool for citizens to evaluate the efficiency and effectiveness of elected officials, like state governors. Since public scrutiny is most intense during elections, outputs from the state's financial reporting process are likely to affect citizens' votes. We argue that, in election years, parties in power have incentives to make accounting choices to "paint a rosy picture" and to improve voter's perceptions of the fiscal performance of the state.[5] Reporting surpluses or reducing deficits is likely to increase the odds that the party in power will remain in power.

We are less sanguine on the exact mechanism through which the improved fiscal performance enters into the voter's decision process when casting his or her vote. That is, news agencies, ratings agencies, and the candidates themselves are all likely to be sources of

[5] This is not to suggest that this is the only role the financial reports play. For example, Copeland and Ingram [1982], Raman [1981, 1982], Wallace [1981], Wescott [1984], Wilson and Howard [1984], Gore [2004], Gore et al. [2004], and Baber and Gore [2008] all suggest that a governmental entity's financial reports play an important role in creditors evaluation of the credit quality of their public debt. A state's financial reports are also likely to play a role in resource allocation issues, and as a control mechanism, to determine compliance with federal or state laws.

information regarding the fiscal performance of the state, and it is not clear which of these are important, or which is relatively more important. Future research might consider addressing these questions. In this paper, we focus on whether politicians take accounting actions to improve the fiscal performance of the state in an election year.

2.2. Accounting rules for states, and specific rules for compensated absences

Per GASB Statement No. 34, state governments are required to annually provide government-wide financial statements. State governments fulfill these requirements by reporting their operating results annually in a Comprehensive Annual Financial Report (CAFR). The CAFR displays a broad overview of the state's financial condition as a single unified entity. The CAFR consists of the statement of activities, a statement of net assets, and a series of fund statements.[6] The statement of net assets reports all financial and capital resources of the state after accounting for its liabilities, the statement of activities shows how net assets changed during the fiscal year, and the fund statements report revenues and expenditures for specific governmental units. It is from these financial statements that we obtain information on the liability associated with compensated absences.

Our primary tests focus on the liability associated with compensated absences. This liability represents the dollar value of the employees rights to unused vacation time, unused sick time, or unused other leave time that can be converted into monetary benefits upon employment separation.[7] GASB Statement No. 16, Accounting for Compensated Absences, provides guidance for state governments on how to account for these liabilities. The underlying principle of GASB

[6] Fund statements report the operating results of three fund groups--governmental, proprietary, and fiduciary. Proprietary and fiduciary funds are prepared using full accrual accounting, while governmental fund financial statements have a short-term focus and are prepared using modified accrual basis of accounting.

[7] The types of compensated absences covered by GASB 16 include: vacation leave, sick leave, sabbatical leave, and any other compensatory leaves, as well as any other fringe benefits, and other compensation costs that are directly associated with the employees' salary (e.g., the employers' portion of Medicare costs, employer provided life insurance, and pension obligations).

16 is that employers should accrue a liability for compensated absences that is attributable to services already rendered and is not contingent upon a specific event that is beyond the control of both the employer and the employee.[8] Compensated absences liabilities generally should be recorded based on the pay or salary rates in effect at the balance sheet date.

To determine the liability associated with compensated absences, the state is required to make a variety of estimates that will affect the relative size of the liability. For example, to estimate the liability for sick leave, GASB 16 permits a state government to use either the termination payment method or the vesting method. Under the termination payment method, a state government accrues the liability for sick leave payments only to the extent that "it is probable that the employer will compensate the employees for the benefits through cash payments conditioned on the employees' termination or retirement." Alternatively, under the vesting method, a state government estimates the liability for sick leave payouts for "those employees who currently are eligible to receive termination payments as well as other employees who are expected to become eligible in the future to receive such payments." Therefore, depending on the accounting option the state selects, the liability for sick leave depends on several estimations, including: the probability that the benefits will result in termination payments; the probability that current ineligible employees will become eligible to receive payments at termination; the likelihood that the employees who are eligible to receive payments will eventually receive those payments (rather than use accumulated leave, accumulate too much leave, waive payments in exchange for other consideration, etc.). Furthermore, states also have to make assumptions about how employees use their accumulated sick leave. For example, are employees using the sick leave they most recently accumulated (LIFO approach), or the sick

[8] Examples of leaves attributable to events outside the control of employees and employers include jury duty, military leave, potential sick leave because of illness or other medical related reasons, etc.

leave they accumulated 10 years ago (FIFO approach). All these assumptions affect the magnitude of the account balance.[9] Similar discretion exists with vacation leave and sabbatical leave.

As Ruppel [2010] indicates, "The calculation of the liability for compensated absences can be very complicated for governmental entities." He indicates that in state governments there are often various groups of employees that are working under various union contracts and have a wide range of benefits and as compensated absence benefits are changed, long term employees are often "grandfathered" into their old plans. These plan differences are compounded by governmental entities having lots of employees, and computer systems that are incapable of tracking leave balances. Ruppel [2010] concludes that "the compensated absence liability is subject to the use of estimates and historical payment patterns to determine reasonable liability amounts. Sometimes a sample of employees is taken, liabilities are calculated in detail, and the results are extrapolated to the workforce as a whole." He further cautions that governmental entities can spend an inordinate amount of time and costs to develop a precise estimate of this balance, and governmental entities may be better served by developing a reasonable estimate.

In addition to the inherent discretion that the GASB provides in determining the amount of this liability, the nature of the financial reporting process for state entities provides an additional layer of discretion for state governments. States typically don't have a regulator, like the SEC, monitoring their financial reporting process. It is not clear that states can be sued for

[9] Some states also allow employees to transfer their sick leave to other employees, and some states have restrictions on how many sick days may be accrued, and the rate at which employees can cash out their unused sick leave. For example, Alabama only allows employees to accumulate up to a maximum of 150 days sick leave. Moreover, employees can only be compensated for 1/2 of the maximum accrued sick leave upon retirement from state service. In addition, in many states employees have the option of converting any unused portion of their compensated absence balances into credits increasing their retirement benefits, and/or post employment health benefits. States that provide these options must estimate the amount of unused compensated absences that are likely to be converted into retirement benefits, and then determine the actuarial value of those benefits, and recognize the unfunded portion of those benefits as a compensated absence liability, providing additional accounting discretion.

accounting irregularities. In a recent article in the New York Times, the New York State Comptroller, Thomas DiNapoli, indicated that the state's balance sheet is unreliable, as the state routinely manipulated which costs were included or excluded from the general fund, and delayed liability/expense recognition.[10] Thus in addition to using the accounting discretion afforded to the state under the standard, states can also distort the compensated absence liability account by simply not recognizing changes in the value of the liability.

In Table 1, Panel A, we report descriptive information regarding the size of the compensated absence liability. In every year in every state that we are able to locate the state's financial statements (over the period 2000 – 2008), the liability for compensated absences is always sufficiently large enough that it is reported as its own separate line item. We find that for the average state, the liability is almost 5 times of the state's general fund balance, suggesting that this liability is a significant component of the state's fiscal performance.

Summarizing, we focus on the accounting discretion used by state governments for the compensated absence liability account. We focus on this account because it is both relatively large, and the accounting rules that govern this account (i.e. GASB 16) provide state governments opportunities to exercise discretion. By focusing on a specific account, we increase our ability to isolate the non-discretionary portion of the account balance, and increase the power of our tests, but we sacrifice the comprehensiveness of our study (McNichols and Wilson [1988]). We suggest that the manipulation associated with this liability is likely to be one portion of the total manipulation in the financial statements. If we fail to find results, this does not allow us to conclude that there are not other potentially large accounting manipulations. Similarly, if we do find results, we believe that our study provides a lower bound on the extent of the

[10] For a copy of the article see: http://cityroom.blogs.nytimes.com/2010/04/06/albany-accounting-hides-deficit-size-comptroller-says/?src=mv

manipulation, as other accounts are also likely to be manipulated. We recognize that there are tradeoffs associated with this choice, but we ultimately choose to reduce the comprehensiveness of our approach in favor of a more accurate measure and powerful test.

3. Hypothesis Development

We expect the presence of a gubernatorial general election to affect a state government's discretionary accounting choices. State governors are accountable for their states' fiscal performance and public scrutiny is especially intense during a gubernatorial election year. The electoral fate of the incumbent governor (or in cases where the incumbent does not run, the nominee of the incumbent governor's party) is likely to be influenced by the state's financial performance in the year leading up to the election.[11] Therefore, we expect that gubernatorial elections provide incentives for politicians to make accounting choices that would imply an overall healthy financial condition of the state.

This hypothesis is not without tension. For example Van Lent [2011] argues that elected officials have incentives to be transparent and that these incentives are potentially greater than the incumbent's incentives to manipulate the state's accounting reports. Ultimately, like most earnings management research, whether elected officials will manipulate the state's accounting reports in an election year depends on the benefits of the manipulation (an increased probability of the incumbent being elected and the incumbent's party retaining political power) and the costs of those manipulations (reduction in transparency and reputational costs if manipulations are discovered and revealed).

We further hypothesize that the extent to which politicians employ accounting discretion in an election year is conditioned by their incentives and their ability to use accounting

[11] We check our sample to ensure that the candidates for the gubernatorial elections have influence on the states' financial statements. In our data there are 92 election-years. We find that the incumbent governor, the lieutenant governor, or a member of the governor's cabinet ran in 79 of the 92 elections.

discretion. The first incentive we consider is the state's budget flexibility. Unlike the federal government, most states are constitutionally prohibited from running deficits and the stringency of this requirement varies by state.[12] States with rigorous budget restrictions have stronger incentives to employ accounting practices to ensure expenditures do not exceed revenues, as the alternative is to cut expenditures or increase taxes. Governors would prefer not to cut expenditures or increase taxes, as Poterba [1994] finds that state spending cuts and tax increases affect voters' choices in election years. In contrast, states with weak restrictions can use other fiscal techniques to run deficits or carry deficits forward to future fiscal years, and thus have fewer incentives to use accounting manipulations.

The second incentive we consider is the state's expected financial health. Prior studies (e.g., Brender and Drazen [2008], Brender [2003], and Peltzman [1992]) find that voters hold politicians accountable for the government's fiscal health. These results suggest that politicians in states that are expected to have relatively poorer fiscal performance will have stronger incentives to use accounting discretion to appear healthier. Thus, we predict that states that are expected to be less healthy during the period leading up to an election have stronger incentives to engage in accounting manipulations to attract votes.

In addition to the incumbent party's incentives to use accounting discretion, we also consider factors affecting their ability to use discretion. The first factor we consider is the state auditor's independence. Federal law requires states to conduct annual audits of their financial statements and internal control systems. States vary considerably in how they select their auditors. The position may be independently elected, appointed by the legislature, appointed by the governor, or jointly appointed. Hence, personnel who conduct the audit may be independent, or may be employees of the state who report directly to the governor or to the legislature. We

[12] All states except Vermont have balanced budget restrictions that curtail the use of deficit spending.

conjecture that auditors who are directly elected by citizens are more independent and are more likely to offer higher audit quality.[13] Compared to appointed auditors, the elected auditors are more likely to hinder a politician's ability to adopt favorable accounting treatment during an election year.

Finally, we suggest that the independence of the state controller (i.e. the financial statement preparer) will also affect a politician's ability to use accounting discretion in an election year.[14] The state controller is the agency that chooses the accounting principles to follow. We expect more independent controllers to be less likely to produce biased financial statements. Similar to state auditors, we conjecture that elected preparers are more likely to be independent and thus less likely to engage in earnings management during an election year.[15]

4. Modeling the Discretionary Accounting Choices Related to Compensated Absences

4.1 Research design

To test our hypotheses, we focus on the accounting choices states make when recognizing liabilities associated with state employees. State governments primary liabilities are the bonds and other long-term debt instruments that are used to finance public works, and the liabilities associated with the employment benefits they offer to their work force. Since there is very little accounting discretion in long-term debt, we focus on the liabilities associated with the state's

[13] For example, in April 2004 the year of their gubernatorial election, the elected state auditor for Washington released a report detailing 60 financial reporting problems at 18 different state agencies totaling $3.5 billion dollars in questioned costs. See "Opinion - In Our View: Dollars MIA; Auditor's 60 findings among government agencies add up to millions lost, missing" by Columbian editorial writers in the April 19, 2004 issue of the Columbian.

[14] We use the word controller to describe the head of the agency that is responsible for preparing the state's financial statements. For example, California's State Controller's Office is responsible for preparing California's financial statements. California Government Code Section 12460 and 12461 require that the Controller prepare the annual report in accordance with accounting principles generally accepted in the United States of America. The actual name of this agency varies by state. For example, in contrast to California, in Kansas the Department of Administration, Division of Accounts and Reports prepares for the financial statements.

[15] Ideally, we would also capture whether the controller or the auditor is in the same party as the governor. Unfortunately, we can only observe the party affiliation of elected auditors and elected controllers. In the sensitivity analysis, we attempt to measure this effect, but the small sample size hinders the analysis.

work force. Our primary analysis focuses on the liability associated with compensated absences. We also conduct supplemental tests examining the unfunded pension liability.

To measure the accounting discretion associated with compensated absences, we model the change in the compensated absence balance. We only consider compensated absence liabilities that are associated with the primary state government and exclude those related to component units. Component units are organizations legally separate from the state government (e.g., universities, public hospitals, utility companies, etc.). Since component units have separate governance and are legally different entities from the state government, we conjecture that the state governments are unable to manage the accounting numbers associated with these units. In addition, the nature of component units varies drastically across states and it is difficult to gather detailed data on the precise composition of component units in each state. Therefore, comparing state operations becomes difficult if component units are included in the analysis.[16]

Since the higher the employees' pay, the more the state needs to accrue compensated absences, we expect the change in compensated absences to be positively associated with the change in the employee payrolls. We also expect that the change in the amount of compensated absences will depend on the change in the economic conditions of the state (measured using GDP growth). States that are performing better are expected to grant more benefits. Moreover, we expect the change in the compensated absence balance will depend on whether the state changes their policies on granting compensatory leave. For example, when a state faces financial difficulties, the government may cut employee benefits, reducing vacation and sick leave

[16] State universities are a good example of the complexities that arise with component units. Most states have state universities and they are generally reported as separate component units in the state's CAFR. The extent to which the state is involved in the running of the universities varies considerably. In some states, the state government has considerable authority over the university, accounting for a substantial portion of the universities budget. Other states are less so. Measuring the extent to which a state influences the university is very difficult, and thus we exclude component units from our analysis.

benefits. Ideally, we would directly control for the affect of this change in policy in the model. Unfortunately, a state's policies on compensated absences are hard to observe. While some states disclose some information on their policies on CAFRs (e.g., Alabama, Kansas, Colorado), most states do not.

To capture any policy change, we develop two instruments. The first is based on the survey data from National Association of State Budget Officers (NASBO). The NASBO surveys provide annual data on whether a state government has used furloughs or early retirements to reduce or eliminate budget gaps. We conjecture that the greater the extent to which a state uses these strategies the more likely it is that the government will cut employee benefits such as compensated absences. Our second instrument is designed to measure the extent to which there are drops in employees' pay due to a policy change. We conjecture that when a state employs policies to cut employees' pay, it is likely that the state will also cut other benefits like compensated absences. Since the number of the employees is the main factor affecting the state employee pay, we proxy the salary cut due to a policy change using the residuals from a regression of the annual change in full time pay (scaled by total assets) on the change in the number of full time employees (scaled by total assets).[17]

Finally, we control for the size of the state. Although we scale the dependant and some of the independent variables by the state's total assets to control for the scale of the state government and to reduce the heteroscedasticity in the error term, we also include size as a control to reduce the possibility that our results are simply capturing a scale effect.

Our model takes the form:

[17] We find that the correlation between the change in full time pay and the change in the number of full time employees is 99% and the adjusted R^2 of the regression is 0.97. These results confirm that the number of employees is the main determinant for the employee payroll. Any unexplained portion from the regression is likely driven by factors such as policy changes.

$$\Delta CA_{i,t} = \alpha_0 + \alpha_1 \Delta FTPayroll_{i,t} + \alpha_2 Policy_{i,t} + \alpha_3 UnexpectedComp_{i,t} + \alpha_4 GrowthGDP_{i,t} + \alpha_5 LogTA_{i,t} + \varepsilon_{i,t} \quad (1)$$

where i indexes state and t indexes year. ΔCA is the annual change in primary government compensated absences scaled by primary government total assets. $\Delta FTPayroll$ is the annual change in average base monthly pay for full-time state employees scaled by primary government total assets. We focus on full-time employees because part-time employees usually are not eligible for compensated absences.[18] *Policy* is a dummy variable which equals 1 if the state uses furloughs or early retirements to reduce budget gaps. *UnexpectedComp* is the residual from a regression of a state's annual change in full time pay ($\Delta FTPayroll$) on the change in the number of full time employees (both scaled by the primary government total assets). *GrowthGDP* is growth in the state's gross domestic product per capita. *LogTA* is the log of the primary government total assets.

We estimate equations (1) by pooling all data over the sample period. The residual from the regression is the estimate for state i year t's discretionary compensated absence account. Since we are running a full panel, in all our analyses we cluster standard errors by state and by year to correct for possible correlations across observations of a given state and of a given year (Rogers [1993], Petersen [2009]). Appendix I lists detailed variable definitions.

4.2 Sample description

Our sample period covers the fiscal years beginning in 2000 through 2008. We use several public data sources to construct the sample. We collect state governments' accounting data from each state's CAFR. We obtain the reports from each state government's website. A few states do not provide a full time series CAFRs on their websites (e.g., Arizona's General

[18] Some state governments may provide certain amount of compensated absences to permanent (as opposed to temporary or contract) part-time employees, but at a different rate from full-time employees. Since, the data on the payrolls of permanent part-time employees are unavailable from the U.S. Census Bureau, we cannot control for this effect in the model.

Accounting Office publishes CAFR starting from 2002). These states have shorter sample periods. We collect state employment data from the U.S. Census Bureau Census of Government Employment. We collect state Gross Domestic Product data from Bureau of Economic Analysis and state population data from the U.S. Census Bureau. We collect a state's fiscal strength data from NASBO surveys. NASBO conducts surveys each year and obtains information on the states' actual and forecasted revenues, expenditures, ending general fund balances, and budget stabilization fund balances. After requiring non-missing data, our final sample for the compensated absence analysis has 359 state-year observations. Of the 359 observations, 92 are gubernatorial election years and 267 are non-election years.

For the 92 election state-year observations, we ensure that all the states' fiscal year ends are prior to the general election so that all the accounting information is observable to voters at the election. All gubernatorial elections in our sample are held in November. Two state-year observations have fiscal year ends in March; all the rest observations have fiscal year ends in June.[19]

4.3 Descriptive statistics on compensated absences

Table 1 Panel A reports descriptive information on the variables used in estimating the discretionary component of the change in compensated absences. The average compensated absences liability for the states in our sample is $336 million dollars. This is on average over 4 times of the states' general fund balance, and almost 1.5 times the sum of the general fund balance and budget stabilization fund (i.e., rainy day fund) balance.[20] We also find that, on average, compensated absences account for 3% of the state government's total liabilities and

[19] While we ensure that the fiscal year ends are prior to the elections, studies in political science have found that the relationship between fiscal policy and elections is not very sensitive to the definition of timing used. See for example, Alesina et al. [1998].

[20] These statistics are skewed downward as a few of our state years have 0 balances (or small negative balances) in their general fund. We exclude these observations when calculating these statistics.

with the maximum of 14.6%. When considering these statistics, it is important to note that a large portion (most of the time around 50%) of a state's liabilities come from its long-term debt, such as bonds and notes payable, which are not easy to manipulate. If we instead scale the liability for compensated absences by total liabilities after excluding bonds that are directly attributable to the primary government, we find that the percentage of compensated absences liability doubles. That is, compensated absences on average account for 6% of a state's non-bond related liabilities and with a maximum of 17%.[21]

We find that compensated absences are on average decreasing during the sample period. The average change in compensated absences scaled by total assets is -0.02%. The average monthly payrolls for full time state employees are $298 million dollars, which is on average 1% of the state's total assets. We also find payrolls decreasing during sample period. The average annual change in full-time employee monthly payrolls is -0.03% which is of similar magnitude as the change in compensated absences. During our sample period the average growth in states' GDP per capita is around 4% and an average state's total assets is about $32 billion dollars.

4.4 Measuring the discretionary portion of the compensated absence liability

Table 2 reports the results of equation (1). The coefficient on *ΔFTPayroll* is 0.907 and is statistically significant, suggesting that a $1 dollar increase in the change in monthly full-time employee payrolls is associated with an 91 cent increase in the annual change in compensated absences. Our two proxies for policy changes on compensated absence benefits are both statistically significant. Consistent with our expectation, the coefficient on *Policy* is negative, suggesting that when the state government uses furloughs or early retirements to close budget gaps, they may also cut the benefits on compensated absences. The coefficient on

[21] When calculating this statistic we only exclude General Obligation Bonds, Revenue Bonds, and Other Bonds that were listed as direct obligations of the primary government entity. The fact that we only exclude these three types of bonds understates the relative size of the compensated absences account.

UnexpectedComp is positive, consistent with the expectation that shocks, such as a policy change, to employee salary tend to also affect compensated absences benefits. We find that state GDP growth and government size are generally not associated with changes in compensated absences.

The model explains a significant portion of the variation in ΔCA, with an R^2 of 0.62. The strength of the results is reassuring in that our independent variables control for the factors determining changes in compensated absences and that the residuals are reasonable estimates for the discretionary components of ΔCA.

5 Gubernatorial Elections and Discretionary Change in Compensated Absences

5.1 Research design

We hypothesize that a state's accounting decisions are affected by its desire to influence the prospects of a gubernatorial election. In an election year, a state government has incentives to improve the financial look of the state by reducing liabilities. We predict that the accumulation of compensated absences liability is abnormally small in an election year. Moreover, the abnormal change in compensated absences is conditional on the state's budget restrictiveness, financial health, audit quality, and CAFR preparer independence. Our main regression model takes the form:

$$\begin{aligned} Discretionary\ \Delta CA = {} & \beta_0 + \beta_1 Election + \beta_2 Election*WeakBBR + \beta_3 Election*FinancialHealth + \\ & \beta_4 Election*\ AuditorIndep + \beta_5 Election*PreparerIndep + \beta_6 WeakBBR \\ & + \beta_7 FinancialHealth + \beta_8 AuditorIndep + \beta_9 PreparerIndep + \varepsilon \end{aligned} \quad (2)$$

We expect that states will discretionarily accumulate smaller compensated absences liability in the fiscal year right before a gubernatorial election and hence, a negative β_1. We further expect the accounting manipulation on compensated absences would be mitigated by weak balance budget requirements, strong financial health, high audit quality, and high preparer

independence. We expect the coefficients on the interaction terms *Election*WeakBBR*, *Election*FinancialHealth*, *Election*AuditorIndep*, and *Election*PreparerIndep* to be positive (i.e., β_2, β_3, β_4 and β_5 all > 0).

To measure the restrictiveness of balance budget requirements, we follow Hou and Smith's (2006) framework for state budget and identify five most restrictive budgetary rules:

(1) There is an explicit limit regarding the amount of debt that the state may accumulate. Without this restriction, the state government can simply take on additional short-term debt during a budgetary cycle and use the borrowing to pass a balanced budget.[22]
(2) The governor is required to sign a balanced budget bill. Without this restriction, it is possible for the governor to submit a balanced budget, have the legislature pass the balanced budget, and then have the final budget unbalanced by including deficit spending.
(3) The state has limitations regarding supplementary appropriations. Supplementary appropriations are expenditures that tend to occur after the passage of the final budget. A state lacking this restriction can pass a balanced budget, and then employ supplementary appropriations to result in an unbalanced budget.
(4) Explicit restrictions that prevent deficit spending within a specific budgetary cycle.
(5) The budget must be balanced at the end of a fiscal year (or biennium), so that no deficits can be carried over to the next budgetary cycle.

We define a state as having a weak balanced budget restriction (i.e., *WeakBBR* = 1) if it does not have any of the above anti-deficit rules.

We measure a state's expected financial health using the ratio of forecasted end-of-year total balances to forecasted general expenditures. Total balances are the sum of the general fund balances and the state's budget stabilization fund balances (i.e., rainy day fund balances). Total balances represent the cushion a state has when facing unexpected budget shortfalls. Both the NASBO and textbooks on governmental accounting suggest that scaled measures of general account surpluses (total balances) are common measures used to evaluate a state's fiscal health.[23]

[22] It is very rare that states are legally allowed to issue long-term debt to cover the budget gap. (The only 2 cases we are aware of are Louisiana in 1988 and Connecticut in 1991). States have more freedom in issuing short-term debt, so the stricter balanced budget requirement constraints states from borrowing short-term to make up the budget gap.
[23] For example, Ives et al. [2008] suggest using "budgetary cushion" ratios, such as unreserved fund balances to total revenues to analyze general-purpose government financial health.

The conventional rule of thumb is that to ensure a state has enough reserves its total balances should be greater than 5% of expenditures (NASBO Fiscal Survey of States).

We regard a state auditor to have higher independence and to conduct higher quality audits if the chief auditor is elected, rather than appointed (i.e., *AuditorIndep* = 1). Similarly, we consider a state's financial statement preparer to be more independent if the chief controller is elected, rather than appointed (i.e., *PreparerIndep* = 1).

5.2 Univariate results

The first three rows of Table 1 Panel C provide descriptive information on *Discretionary ΔCA*. By construction, *Discretionary ΔCA* is mean 0. When we separate the sample into gubernatorial election years (N = 92) and non-gubernatorial election years (N = 267), we find that the *Discretionary ΔCA* is, on average, lower in the election years than in the non-election years (-0.563 versus 0.194, *p-value* < 0.01). In fact, *Discretionary ΔCA* in election years has smaller minimum, median, first quartile, and third quartile values than *Discretionary ΔCA* in non-election years (untabulated). Given the mean of the total assets is $31,622 million, state governments on average abnormally accumulate $23.9 million dollars less compensated absences in an election year relative to a non-election year.

To put the magnitude of the manipulation into perspective, we calculate the amount of money state governments need to raise to restore fiscal soundness in an election year. Following NASBO, we define a state as fiscally healthy if its total balances are greater than 5% of its expenditures (i.e., *FinancialHealth* > 0.05). Of the 92 election-years, 42 expect not to be able to meet the 5% benchmark and their average *Discretionary ΔCA* is $24.3 million. To reach the 5% target, the average amount of money they need to raise is $289 million dollars. The manipulation in compensated absences is about 8% of the $289 million dollars these states need.

In Figure 1 we plot the discretionary component of *ΔCA* in event time, where year $t = 0$ is the fiscal year right before the election.[24] Figure 1 shows that there is a dip in the discretionary component of *ΔCA* during the election year and *Discretionary ΔCA* increases in the years after the election. Both Figure 1 and the univariate results provide support for the hypothesis that state governments opportunistically accrue less compensated absences before a gubernatorial election.

The bottom half of Table 1 Panel C provides descriptive information on the variables used in the main regression. We find that 13% of our sample has weak balance budget rules. The average forecasted reserves are 8.3% of forecasted expenditures. Almost 38% of the state chief auditors are elected and 18% of the chief controllers are elected.

5.3 Regression results

Table 3 presents the regression results for equation (2). The first specification reinforces our preliminary univariate findings that the discretionary accrual of compensated absences is abnormally small in a gubernatorial election year. Comparing the significant negative coefficient (-0.757, *t*-statistic of -2.685) on *Election* with the intercept, the result suggests that *Discretionary ΔCA* decreases almost 4 times in an election year relative to a non-election year.

In the second specification, we include *WeakBBR, FinancialHealth, AuditorIndep, PreparerIndep,* and their interaction terms with *Election* to investigate whether the election year accounting manipulation is conditional on the incumbent's incentives and ability to manipulate. The positive coefficient on the interaction term *Election x WeakBBR* (1.091, *t*-statistic of 2.914) suggests that the decrease in *Discretionary ΔCA* in an election year is mitigated if the state has weak balanced budget restrictions. In fact for states with weak balanced budget restrictions, we do not find accounting management in compensated absences in an election year. The sum of the

[24] Vermont and New Hampshire hold gubernatorial elections every 2 years. So we plot their discretionary component of *ΔCA* over (-1, 0).

coefficients on *Election* and *Election x WeakBBR* is not statistically different from 0 (*p-value* = 0.24). This finding suggests that since during election years states are less likely to cut spending or increase taxes, states with strict anti-deficit provisions are under more pressure to meet the budget and thus, have even stronger incentives to manage accounting numbers.

We also find that states expected to be in better financial health are less likely to manipulate compensated absences prior to an election. The coefficient on *Election x FinancialHealth* is positive and significant (1.518, *t*-statistic of 1.68). Finally, we find that the coefficients on *Election x AuditorIndep* and *Election x PreparerIndep* are both positive and significant, suggesting both state auditors and state financial statements preparers can curb the accounting manipulation. However, both the sums of the coefficients on *Election* and *Election x AuditorIndep* and on *Election* and *Election x PreparerIndep* are statistically smaller than 0 (both have *p-values* < 0.01). This result suggests that while state governments' ability to play accounting tricks is weakened by independent state auditors and controllers, independent state auditors and controllers cannot fully curtail the accounting management.

We do not have any predictions on the main effects of *WeakBBR*, *FinancialHealth*, *AuditorIndep*, and *PreparerIndep* on the manipulation of compensated absences. The negative coefficient on *WeakBBR* in column (2) suggests that states with loose budget restrictions tend to accumulate less compensated absences liabilities during non-election periods. This result is likely due to the difficulty we have in measuring the extent to which balanced budget restrictions are binding. A lot of balanced budget requirements are based on judicial interpretations and political expectations, and there is generally no legal mechanism to force compliance with a balanced budget. The General Accounting Office's 1993 report states that "some balanced budget requirements are based on interpretations of state constitutions and statues rather than on

an explicit statement that the state must have a balanced budget." Furthermore, the requirements for balanced budgets do not impose legal penalties for failure to do so and thus, it is hard to capture how rigorous balanced budget restrictions are. Given this issue, *WeakBBR* may be measured with error and hence, we suggest the reader interpret the results on the balanced budget variable with caution.

Overall Table 3 provides evidence which suggests that states make accounting choices to accumulate relatively lower compensated absences prior to a gubernatorial election. We also find that variation in the independence of the state auditor and controller, the fiscal performance of the state, and the leniency of the balanced budget requirements mitigate these incentives.

6. Robustness Checks and Additional Analyses

While we find that the compensated absences liability is statistically lower in election years, this could be due to employees using up their leaves rather than accounting manipulation. For example, employees may use up their leaves in fear of a potential policy change in their paid time leave. The lower account balance can also be due to state governments cutting employee benefits to reduce the impression that they are overpaying their employees. We conduct several analyses to rule out these alternative explanations.

Concerns of a policy change in the granting or use of compensated absences is more likely to arise from employees without union protection. State governments cannot retroactively cut benefits for union employees under a contract. Moreover, any changes to benefits in future contracts must be negotiated as part of each union renegotiation process. Compensated absences are a major employee benefit and often included in great detail in union contracts.[25] If our results

[25] We obtained union contracts for some of the states. In each contract, there are always provisions protected the amount of sick leave, vacation leave, and other compensatory leaves available to the state employees.

are driven by employees' concerns about losing their leave, we should observe a mitigating effect from states with strong union representation.

We collect state employee union membership and union coverage data from unionstats.gsu.edu, which compiled the data from the Current Population Survey (Hirsch and Macpherson [2003]). *UnionMembership* is the proportion of public sector state employees who are members of a labor union or of an employee association similar to a union. *UnionCoverage* is the proportion of public sector state employees who are covered by a union or employee association contract. Table 4 columns (1) and (2) report the results after including these variables in the model. The results do not support the hypothesis that employees use up their benefits in anticipation of a change in policy. Neither *Election x UnionMembership* nor *Election x UnionCoverage* is significant.[26]

In column (3), we replace the union variables with public sector collective bargaining power. States allow collective bargaining tend to pay higher wages and are less likely to cut employee benefits such as compensated absences.[27] We collect information on collective bargaining laws from the NBER Public Sector Collective Bargaining Law Data Set. *CollectiveBargain* = 1 if the state gives state employees "right to meet and confer," "duty to bargain implied," or "duty to bargain explicit." Using collective bargaining as an alternative proxy still does not provide any support for the alternative explanation that employees use up

[26] In addition to union membership and union coverage, we also consider whether the state has a right-to-work law as an alternative proxy for union strength. A right-to-work law protects employees' right to decide whether or not to join a union. Unions in states without such a law are often viewed as more powerful, because they can force employees to unionize. Using no right-to-work law to proxy for union strength still provides no support for the alternative explanation that employees using up compensated absences in anticipation of a policy change.

[27] Consistent with labor economics literature, we find that states with collective bargaining allow employees to drive up wages. The average (median) annual full-time state employee wage is $48,495 ($47,759) dollars for states allow collective bargaining. This is higher than the average (median) annual wage of $41,573 ($40,748) for states who do not allow collective bargaining (*p-value* < 0.0001 for both the mean and median differences).

their compensated absences prior to an election. The coefficient on *Election x CollectiveBargain* is not statistically significant.

In the final column of Table 4, we consider the possibility that accounting reports are used to evaluate the compensation practices of the state government. It is possible that in an election year the incumbent wants to reduce the impression that the state government is overpaying their employees, and thus accumulates abnormally low compensated absences. This explanation makes the hypothesis two sided, resulting in a mitigating effect from states with a larger proportion of its citizens employed by the state government. That is, in general voters would not want to see their tax dollars being used to over compensate state employees, unless they are state employees. We denote *HiEmployment* = 1 if the ratio of the state full-time employees to the state population is greater than sample median. Column (4) shows that the coefficient on *Election x HiEmployment* is not statistically significant (*t*-statistic of 1.13). The fact that our results do not vary cross-sectionally with the level of state employment provides no support for the alternative compensation hypothesis.

We conduct several additional untabulated sensitivity analyses. First, we investigate whether our results are sensitive to the incumbent's decision to stand for a reelection. Although, in the vast majority of the elections in our sample, either the incumbent runs again, or a member of his cabinet (or the lieutenant governor) runs, the incentives for the incumbent to manipulate accounting numbers are likely to be larger if he himself enters the race and his election fate is at stake. We include *Election x Incumbent* as an additional variable in the regression. We find that the coefficient on *Election x Incumbent* is not significant (*t*-statistic of -0.03). This result suggests that accounting manipulation is used to maintain current party's governorship, whether incumbents run or not has no association with the extent of manipulation.

We also consider the political affiliation of state auditors. State auditors belonging to a different party from the governor may have more incentives to hinder the incumbent governor's adoption of favorable accounting treatment during an election year. However, we are only able to observe elected auditors' political affiliations. So we create a variable *Auditor_SameParty* to equal 0 for appointed auditors, 1 for elected auditors who belong to the same party as the governor, and 2 for elected auditors who belong to a different party from the governor. Our results on auditor independence are consistent with those reported in our primary analysis. The coefficient on *Election x Auditor_SameParty* is positive and significant (*t*-statistic = 1.72).

Finally, we re-estimate *Discretionary ΔCA* in equation (1) using a set of rolling regressions by pooling all the data available up to the current year *t*. For example, to estimate *Discretionary ΔCA* in 2001, we will only use data in 2001 and to estimate the variable in 2002, we will use data in 2001 and 2002, etc. This rolling approach has the advantage that the estimation of the discretionary accruals does not include forward looking data. However, it also suffers the disadvantage that in the early years, we have few observations to estimate *Discretionary ΔCA*, and hence our estimates may be inaccurate. When we use this alternative approach, we find our results are not sensitive to this research design choice. We also repeat the analysis using population as an alternative deflator and find qualitatively similar results.[28]

7. Supplemental Tests

A final concern with our analysis on compensated absences is that our results could be driven by correlated omitted variables, which cause the compensated absence balance to appear abnormally small in an election year. While our cross-sectional and robustness analyses reduce this concern, we conclude the paper by examining another employee related liability account, the

[28] Note that when we use population as the deflator, the mitigating effect from good fiscal health is not statistically significant.

unfunded pension liability (UAAL). We focus on unfunded pension liability because this account balance is also large enough that it may be subject to manipulation. Moreover, the unfunded pension liability is not affected by employees using up their compensated leaves and it is also harder to change policies on employee pension benefits. Therefore, if we find evidence of discretion in this account, then it further reduces the probability that we are capturing a correlated omitted variable in our main tests.

GASB Statement No. 27, Accounting for Pensions by State and Local Governmental Employers, provides guidance for state and local governments on how to account for their unfunded pension liability. At a very high level, the unfunded pension liability represents the cumulative difference between the state's contribution to the pension program and the actuarial determined annual required contributions (ARC). In state governments, the unfunded pension liability is primarily associated with the state's defined benefit plans as most states still do not offer defined contribution plans.[29] Similar to the compensated absence account, there is a host of accounting choices that states must make in order to determine the value of their unfunded pension obligations. For example, to determine the ARC, the state government must make actuarial assumptions regarding employees' mortality, withdrawal from the pension system, and retirement dates, and they also must make assumptions about the expected rates of return on plan assets and projected salary increases, etc. McMahon [2011] states that governmental accounting rules for pensions provide governments with significant accounting discretion, concluding that, "lenient accounting standards have allowed public pension systems across the country to build

[29] A survey by Bureau of Labor Statistics indicates that about 80% of workers in state and local governments enroll in defined benefit pension plans and only about 20% of the workers enroll in define contribution plans (Bureau of Labor Statistics [2008]).

up enormous unfunded liabilities, based on unrealistic assumptions about future investment returns."[30]

To conduct our tests, we collect state sponsored defined benefit pension plan data from Boston College Center for Retirement Research and crosscheck these data using the information from the National Association of State Retirement Administrators (NASRA).[31] If a state has more than 1 plan, we aggregate all the plans into the state level. To measure the discretion included in unfunded pension, we model the "normal account balance" as a function of actuarial assumptions related to the plan's assets and liability, the performance of the plan investments, the plan's asset allocations, the payroll covered by the plan, and the state's contribution to the ARC. The model takes the form:

$$\begin{aligned} UAAL_{i,t} = \; & c_0 + c_1 WageAssump_{i,t} + c_2 ReturnAssump_{i,t} + c_3 InflationAssump_{i,t} \\ & + c_4 Equity_{i,t} + c_5 Bond_{i,t} + c_6 Realestate_{i,t} + c_7 Return_{i,t} + c_8 ARCPaid_{i,t} + \\ & c_9 Payroll_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (3)$$

UAAL is the unfunded actuarial accrued liability scaled by primary government total assets. *WageAssump* is the actuarial assumption of the total wage growth for employees age 40 and/or with 10 years of service. *ReturnAssump* is the actuarial assumption of the long-term investment return of plan assets. *InflationAssump* is the actuarial assumption of the inflation rate. All three actuarial assumption variables are in percentages. *Equity* is the percentage of investments in equities. *Bond* is the percentage of investments in fixed income. *Realestate* is the percentage of investments in real estate assets. *Return* is the percentage of 1-year investment return on the total portfolio of investments. *ARCPaid* is the percentage of the ARC paid. *Payroll* is the payroll covered by the pension plan scaled by primary government total assets. For actuarial

[30] See E.J. McMahon "A Cure or a Bandage?" New York Times December 7, 2011 at http://www.nytimes.com/roomfordebate/2011/02/06/will-new-york-citys-pensions-be-cut/on-pensions-a-cure-or-a-bandage

[31] We thank Keith Brainard at NASRA's Public Fund Survey for kindly providing us the pension data from 2001-2009.

assumptions, asset allocations, investment returns, and the percent of state contributions, we take the average across the plans within a state if the state sponsors more than 1 pension plan. Since the actuarial valuation dates of the state pensions tend to not in sync with the state fiscal year end dates, we further ensure that the actuarial valuation dates are prior to November (the general election dates).

Table 1 Panel B reports the descriptive information on the variables used in estimating equation (3). The scale of the unfunded pension liability is large. For our sample, it is on average close to 6 billion dollars, which is about 90 times of an average state's general fund balance and almost 20 times when including the budget stabilization fund in the calculation. We find that unfunded pension is on average about 24% of a state government's total assets and about 57% of its total liability. This figure doubles to 114% when we exclude bonds from liability.

We find that on average pension plans assume a 5.7% growth rate for employee wage, a rate of 8% for plan investment return, and a 3.6% inflation rate. Consistent with the observation in Novy-Marx and Rauh [2009], we find that state sponsored pension funds largely invest in risky assets. For example, on average a pension plan invests 58% in equities and only 28% in fixed income. The realized return in the sample period is about 6%, lower than the actuarial assumption of 8%. We find that on average states contribute 95% of the required contribution and the payroll covered by the plan is about 10 billion dollars, 32% of the state government's total assets.[32]

Table 5 Panel A reports the results of equation (3). The coefficient on *Payroll* is positive and significant, suggesting that pension plans are more likely to be underfunded if the covered employee salary is high. Besides *Payroll*, the coefficients on *WageAssump, ReturnAssump,* and

[32] Note that *FTPayroll* is smaller than *Payroll*. This is because *FTPayroll* (monthly base) only includes full time employees work in the state government. In contrast, *Payroll* includes employees work outside of the state government (such as teachers, policy, and firefighters) but their pension plans are sponsored by the state.

ARCPaid are also significant. We are cautious in interpreting these coefficients as these factors are all likely to be endogenously determined. For example, *ReturnAssump* is positive, suggesting that when the states assume high investment returns they tend to have higher unfunded pension liability. This result could be due to the fact that states assuming high returns tend to be those with funding problems and they hope to use the high actuarial return assumptions to reduce the underfunded liability.

The residuals from equation (3) are our estimates for the accounting discretion state governments have used on unfunded pension. In Table 1 Panel C, we provide descriptive information on *Discretionary UAAL*. By construction, *Discretionary UAAL* has a mean of 0. Similar to *Discretionary ΔCA*, we find that the distribution of *Discretionary UAAL* has smaller values in election years than in non-election years. Specifically, in election years *Discretionary UAAL* has smaller mean, minimum, median, third quartile, and maximum values. Given the mean of the total assets of $31,622 million, we find that state governments abnormally recognize $474 million dollars less unfunded pension liability in an election year relative to a non-election year.

Table 5 Panel B reports the results of the effects of elections on unfunded pension liability. These results are similar to the results on compensated absences liability. Specifically, we find that unfunded pension liability is abnormally small in an election year as indicated by the negative coefficient on *Election* (-0.047, *t*-statistic of -1.91). The positive coefficient on *Election x FinancialHealth* (0.096, *t*-statistic of 2.11) suggests that the accounting management on unfunded pension decreases if a state expects to have a strong fiscal condition. We also find evidence that independent auditors and controllers can curb the accounting manipulation in pension as indicated by the positive coefficients on *Election x AuditorIndep* and *Election x*

PreparerIndep. In contrast to compensated absences, we do not find a state's budget flexibility affects unfunded pension liability in an election year (the coefficient on *Election x WeakBBR* is insignificant). As we discuss above, the mixed results on this variable are likely to be attributable to the difficulty in measuring the extent to which states have balanced budget requirements so that the variable can be a weak proxy.

Overall Table 5 provides findings consistent with earlier results that politicians manage accounting numbers prior to an election. The fact that we are able to find similar results in another account mitigates the concerns that our main findings on compensated absences are driven by omitted variables.

8. Conclusion

This paper investigates whether state governments manage accounting numbers prior to gubernatorial elections. We examine state governments' accounting choices for liabilities associated with state work force and find that state governments discretionarily accumulate lower compensated absences liability in election years, especially if the government is under strict budgetary restrictions, or is expected to have bad financial condition. Independent state auditors and controllers can curb such accounting manipulation. In supplemental tests, we find similar evidence that state governments recognize lower unfunded pension liability in election years. However, we do not find such manipulation related to the state's budget flexibility, and so we caution the interpretation of this variable.

The paper contributes to the accounting choice literature along a number of dimensions. First, given the heightened interest in the financial wellbeing of state governments, our paper is timely, in that it examines factors affecting the outputs of the state financial reporting process. Our paper also adds to the accounting choice literature by studying how political processes affect

the outputs of U.S. states financial reporting systems. While other studies have investigated accounting choice for state and local governments (e.g., Evans and Patton [1983], Baber [1983], Baber and Sen [1984]), this paper is the first attempt to identify the manipulation of specific accounts (compensated absences and unfunded pension) and provide evidence that the discretion used in these accounts is more evident in an election year.

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Appendix I

ARCPaid	=	the percentage of the ARC paid by the state;
AuditorIndep	=	dummy variable which equals 1 if the state chief auditor is elected by the citizens, 0 otherwise;
Auditor_SameParty	=	ranges from 0 to 2 and is equal to 0 if the state chief auditor is appointed, equal to 1 if the state chief auditor is elected but belongs to the same political party as the governor, equal to 2 if the state chief auditor is elected and belongs to a different party from the governor;
Bond	=	the percentage of pension plan investments in fixed income;
CA	=	primary government compensated absences liability;
ΔCA	=	annual change in primary government compensated absences scaled by the primary government total assets;
CollectiveBargain	=	dummy variable which equals 1 if the state gives state employees "right to meet and confer," "duty to bargain implied," or "duty to bargain explicit," 0 otherwise;
Discretionary ΔCA	=	the discretionary component of the annual change in primary government compensated absences scaled by the primary government total assets;
Discretionary UAAL	=	the discretionary component of the annual unfunded actuarial accrued liability scaled by the primary government total assets;
FinancialHealth		[expected ending general fund balance + expected budget stabilization fund balance] / expected general expenditures;
FTPayroll	=	average base monthly pay for full-time state employees;
ΔFTPayroll		annual change in average monthly pay for full-time state employees scaled by primary government total assets;
Election	=	dummy variable which equals 1 if a gubernatorial election occurs during the year, 0 otherwise;
Equity	=	the percentage of pension plan investments in equities;
GrowthGDP	=	the growth in the state's Gross Domestic Product per capita;
HiEmployment	=	dummy variable which equals 1 if the state-year's ratio of the state full-time employees to the state population is greater than sample median, 0 otherwise;
Incumbent	=	dummy variable which equals 1 if the candidate for the governor election is the current governor, 0 otherwise;
InflationAssump	=	the actuarial assumption of the inflation rate;

LogTA	=	the natural logarithm of the primary government total assets;
Payroll	=	the payroll covered by the state sponsored pension plan scaled by the primary government total assets;
Policy	=	dummy variable which equals 1 if the state uses furloughs or early retirements to reduce budget gaps, 0 otherwise;
PreparerIndep	=	dummy variable which equals 1 if the preparer of the CAFR is elected by the citizens, 0 otherwise;
Realestate	=	the percentage of pension plan investments in real estate assets;
Return	=	the percentage of 1-year investment return on the total portfolio of pension plan investments;
ReturnAssump	=	the actuarial assumption of the long-term investment return of pension plan assets;
TA	=	primary government total assets;
TL	=	primary government total liabilities;
UAAL	=	unfunded actuarial accrued liability of state sponsored pension plans scaled by primary government total assets;
UnexpectedComp	=	the residual from a regression of the change in full time payroll on the change in the number of full time employees (both variables scaled by primary government total assets);
UnionCoverage	=	the proportion of public sector state employees who are covered by a union or employee association contract;
UnionMembership	=	the proportion of public sector state employees who are members of a labor union or of an employee association similar to a union;
WageAssump	=	the actuarial assumption of the total wage growth for employees age 40 and/or with 10 years of service;
WeakBBR	=	dummy variable which equals 1 if the state does not have any balanced budget restriction out of the 5 restrictive rules, 0 otherwise.

Figure 1: Discretionary Compensated Absences Liability around Elections

This figure graphs discretionary changes in compensated absences liability around a gubernatorial election year ($t = 0$). *Discretionary ΔCA* is scaled by multiplying 1,000.

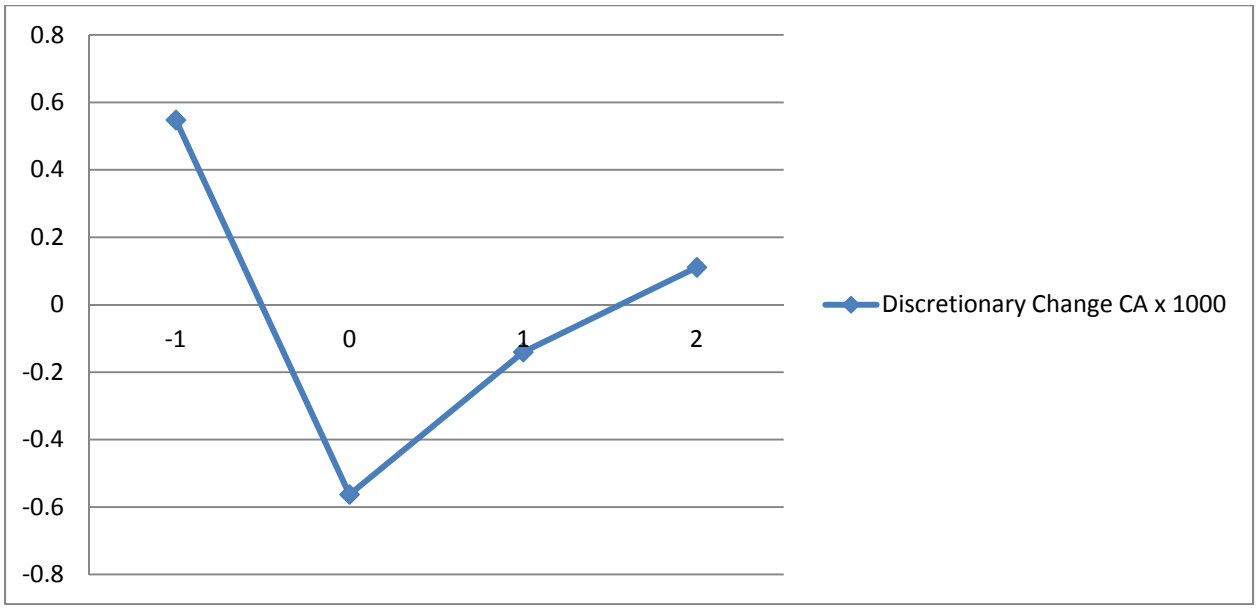

Table 1: Descriptive Statistics

Panel A reports descriptive statistics on the variables used in estimating the discretionary component of changes in compensated absences liability. Panel B reports descriptive statistics on the variables used in estimating the discretionary component of unfunded pension liability. Panel C reports descriptive statistics on the variables used in analyzing the effects of gubernatorial elections on compensated absences liability and unfunded pension liability. All variables are defined in Appendix I.

Panel A: Variables used in estimating discretionary changes in compensated absences

Variable	N	Mean	Median	Std. Dev.
Compensated absence liability				
CA (in millions)	359	336	197	411
CA / TA	359	0.011	0.010	0.006
CA / TL	359	0.030	0.026	0.019
CA / TL excluding Bonds	358	0.060	0.049	0.038
CA / General Fund Balance	314	4.828	0.750	23.065
CA / (General Fund Balance + Budget Stabilization Fund Balance)	344	1.438	0.400	7.925
ΔCA (scaled by TA)	359	-0.0002	-0.00008	0.003
Other variables				
FTPayroll (in millions)	359	298	225	305
FTPayroll / TA	359	0.011	0.010	0.005
ΔFTPayroll (scaled by TA)	359	-0.0003	-0.0001	0.003
Policy	359	0.0724	0	0.2595
UnexpectedComp	359	0	-0.079	0.435
GrowthGDP	359	0.0419	0.0390	0.0243
TA (in millions)	359	31,622	22,688	34,640

Panel B: Variables used in estimating discretionary unfunded pension liability

Variable	N	Mean	Median	Std. Dev.
Unfunded pension liability				
UAAL (in millions)	345	5,977	3,208	10,116
UAAL / TL	345	0.571	0.457	0.607
UAAL / TL excluding Bonds	345	1.135	0.850	1.467
UAAL / General Fund Balance	301	90.251	12.600	571.813
UAAL / (General Fund Balance + Budget Stabilization Fund Balance)	330	18.562	6.679	125.706
UAAL / TA	345	0.238	0.179	0.277
Other variables				
WageAssump (%)	345	5.662	5.630	0.798
ReturnAssump (%)	345	7.992	8	0.348
InflationAssump (%)	345	3.623	3.500	0.596
Equity (%)	345	58.291	59.500	8.362
Bond (%)	345	27.747	26.397	7.603
Realestate (%)	345	5.138	5.043	3.969
Return (%)	345	6.185	8.850	9.626
ARCPaid (%)	345	95.321	100	50.320
Payroll (in millions)	345	10,325	6,792	12,298
Payroll / TA	345	0.323	0.308	0.145

Panel C: Variables used in analyzing effects of gubernatorial elections on compensated absences liability and unfunded pension liability

Variable	N	Mean	Median	Std. Dev.
Discretionary accounting choices				
Discretionary ΔCA x 1000	359	0	-0.043	1.951
Election = 0	267	0.194	-0.037	1.729
Election = 1	92	-0.563	-0.062	2.410
Discretionary UAAL	345	0	-0.016	0.229
Election = 0	252	0.005	-0.013	0.234
Election = 1	93	-0.010	-0.021	0.218
Other variables				
Election	359	0.256	0	0.437
WeakBBR	359	0.134	0	0.341
FinancialHealth	354	0.083	0.049	0.145
AuditorIndep	359	0.379	0	0.486
PreparerIndep	359	0.181	0	0.386
Election x WeakBBR	359	0.036	0	0.187
Election x FinancialHealth	354	0.023	0	0.087
Election x AuditorIndep	359	0.100	0	0.301
Election x PreparerIndep	359	0.045	0	0.207

Table 2: Discretionary Changes in Compensated Absences Liability

This table reports the regression results of equation (1)

$$\Delta CA_{i,t} = \alpha_0 + \alpha_1 \Delta FTPayroll_{i,t} + \alpha_2 Policy_{i,t} + \alpha_3 UnexpectedComp_{i,t} + \alpha_4 GrowthGDP_{i,t} + \alpha_5 LogTA_{i,t} + \varepsilon_{i,t}$$

All variables are defined in Appendix I. *p*-values are one tailed for variables with predicted signs and two tailed for variables without predicted signs. *t*-statistics are in brackets and are calculated based on heteroscedastic consistent standard errors clustered by state and year. *, **, and *** indicate significance at the 10%, 5%, and 1% level respectively.

	Dependent variable = ΔCA x 1000
Intercept	0.223
	[0.146]
ΔFTPayroll (+)	0.907***
	[17.194]
Policy (-)	-0.340***
	[-4.466]
UnexpectedComp (+)	0.445***
	[2.914]
GrowthGDP (+)	-2.211
	[-0.488]
LogTA	-0.001
	[-0.017]
Observations	359
Adjusted R^2	0.62

Table 3: Regression Analysis of Gubernatorial Elections and Discretionary Changes in Compensated Absences Liability

This table reports the regression results of equation (2):

$$Discretionary\ \Delta CA = \beta_0 + \beta_1 Election + \beta_2 Election*WeakBBR + \beta_3 Election*FinancialHealth + \beta_4 Election*\ AuditorIndep + \beta_5 Election*PreparerIndep + \beta_6 WeakBBR + \beta_7 FinancialHealth + \beta_8 AuditorIndep + \beta_9 PreparerIndep$$

All variables are defined in Appendix I. *p*-values are one tailed for variables with predicted signs and two tailed for variables without predicted signs. *t*-statistics are in brackets and are calculated based on heteroscedastic consistent standard errors clustered by state and year. *, **, and *** indicate significance at the 10%, 5%, and 1% level respectively.

	Dependent: Discretionary ΔCA x 1000	
	[1]	[2]
Intercept	0.194	0.347
	[1.182]	[1.556]
Election (-)	-0.757***	-1.487***
	[-2.685]	[-2.757]
Election x WeakBBR (+)		1.091***
		[2.914]
Election x FinancialHealth(+)		1.518**
		[1.682]
Election x AuditorIndep (+)		0.834**
		[2.064]
Election x PreparerIndep (+)		0.718***
		[3.225]
WeakBBR		-0.590***
		[-3.919]
FinancialHealth		-0.883
		[-1.561]
AuditorIndep		0.031
		[0.185]
PreparerIndep		-0.091
		[-0.383]
Observations	359	354
Adjusted R^2	0.03	0.03

Table 4: Sensitivity Analyses on Discretionary Changes in Compensated Absences Liability

This table reports sensitivity analyses on unions, collective bargaining laws, and the employment of state government. All variables are defined in Appendix I. *p*-values are one tailed for variables with predicted signs and two tailed for variables without predicted signs. *t*-statistics are in brackets and are calculated based on heteroscedastic consistent standard errors clustered by state and year. *, **, and *** indicate significance at the 10%, 5%, and 1% level respectively.

	Dependent variable: Discretionary ΔCA x 1000			
	[1]	[2]	[3]	[4]
Intercept	0.486	0.477	0.369	0.441**
	[1.612]	[1.486]	[1.614]	[2.637]
Election (-)	-1.394***	-1.383***	-1.443***	-1.780***
	[-2.771]	[-2.561]	[-3.306]	[-2.937]
Election x WeakBBR (+)	1.110***	1.113***	1.096***	1.065***
	[2.672]	[2.594]	[2.868]	[2.764]
Election x FinancialHealth(+)	1.558*	1.564*	1.555*	1.187**
	[1.501]	[1.483]	[1.316]	[2.078]
Election x AuditorIndep (+)	0.827**	0.833**	0.844**	0.860**
	[2.051]	[2.053]	[1.867]	[1.757]
Election x PreparerIndep (+)	0.726***	0.724***	0.714***	0.866**
	[3.565]	[3.738]	[3.339]	[1.840]
Election x UnionMembership (+)	-0.272			
	[-0.251]			
Election x UnionCoverage (+)		-0.273		
		[-0.246]		
Election x CollectiveBargain (+)			-0.083	
			[-0.129]	
Election x HiEmployment (+)				0.565
				[1.128]
WeakBBR	-0.586***	-0.585***	-0.596***	-0.607***
	[-3.942]	[-3.921]	[-4.087]	[-3.048]
FinancialHealth	-0.847	-0.849	-0.857	-0.751
	[-1.439]	[-1.481]	[-1.564]	[-1.165]
AuditorIndep	0.042	0.042	0.039	0.026
	[0.230]	[0.229]	[0.214]	[0.110]
PreparerIndep	-0.066	-0.072	-0.087	-0.134
	[-0.301]	[-0.324]	[-0.373]	[-0.541]
UnionMembership	-0.448			
	[-0.732]			
UnionCoverage		-0.370		
		[-0.627]		
CollectiveBargain			-0.045	
			[-0.286]	
HiEmployment				-0.189
				[-0.790]
Observations	354	354	354	354
Adjusted R^2	0.03	0.03	0.03	0.03

Table 5: Supplementary Tests on Unfunded Pension Liability

Panel A reports the regression results of equation (3)

$$UAAL_{i,t} = c_0 + c_1 WageAssump_{i,t} + c_2 ReturnAssump_{i,t} + c_3 InflationAssump_{i,t} + c_4 Equity_{i,t} + c_5 Bond_{i,t} + c_6 Realestate_{i,t} + c_7 Return_{i,t} + c_8 ARCPaid_{i,t} + c_9 Payroll_{i,t} + \varepsilon_{i,t}$$

Panel B reports the results of the effects of gubernatorial elections on discretionary unfunded pension liability. All variables are defined in Appendix I. *p*-values are one tailed for variables with predicted signs and two tailed for variables without predicted signs. *t*-statistics are in brackets and are calculated based on heteroscedastic consistent standard errors clustered by state and year. *, **, and *** indicate significance at the 10%, 5%, and 1% level respectively.

Panel A: Estimation of discretionary UAAL

	Dependent variable = UAAL
Intercept	-1.196
	[-1.403]
WageAssump	-0.069**
	[-2.247]
ReturnAssump	0.180*
	[1.874]
InflationAssump	-0.092
	[-1.647]
Equity	0.004
	[1.287]
Bond	0.004
	[0.900]
Realestate	0.001
	[0.260]
Return	0.004
	[1.554]
ARCPaid	0.001**
	[2.423]
Payroll	0.864***
	[3.573]
Observations	345
Adjusted R^2	0.29

Panel B: The effects of gubernatorial elections on discretionary UAAL

	Dependent: Discretionary UAAL
Intercept	0.051
	[1.130]
Election (-)	-0.047**
	[-1.910]
Election x WeakBBR (+)	-0.061
	[-1.044]
Election x FinancialHealth(+)	0.096**
	[2.111]
Election x AuditorIndep (+)	0.061**
	[2.215]
Election x PreparerIndep (+)	0.080**
	[1.788]
WeakBBR	-0.057
	[-0.594]
FinancialHealth	-0.179**
	[-2.636]
AuditorIndep	-0.090*
	[-1.694]
PreparerIndep	0.058
	[0.559]
Observations	345
Adjusted R^2	0.05