Opportunistic financial reporting around municipal bond issues

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DRAFT

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Abstract Understanding how government officials exercise discretion over financial reporting is essential for citizens, regulators, and researchers to interpret and monitor financial performance. I examine two measures of discretion in the governmental financial statements: discretionary accruals in full accrual financial statements and other financing sources and uses in modified accrual financial statements. Using a unique dataset of hand-collected financial data from California, I document empirically that municipal governments pursue a breakeven income in both sets of financial statements, and that they focus particularly on avoiding deficits. Further, I find evidence that municipalities use discretionary accruals but not other financing sources and uses to a greater extent before issuing bonds. Prior to bond issuance, officials facing deficits use less discretion. The results highlight the multidimensional and sometimes conflicting incentives government officials face, and the reporting strategies they employ as they weigh the expected costs and benefits of using accounting gimmicks to report favorable bottom lines.

Keywords Governmental accounting, Discretionary accruals, Municipal bonds, Earnings management

1 Introduction

Managers of governmental entities are frequently accused of opportunistic reporting, financial mismanagement, and even fraud. The media raise concerns that governments at all levels use "accounting gimmicks" in financial reporting (Walsh and Cooper 2012; Williams 2012; Richwine 2013; Flatten 2014; Mazza 2015). The Institute for Truth in Accounting (ITA) (2009) issued a 111-page report documenting several "circumvention techniques" (p. 39) states use to avoid unbalanced budgets. Seventy-nine percent of government employees recently surveyed by KPMG report witnessing "misconduct" in the workplace, the second highest of any industry, and 62% believe the nature of the misconduct would cause a "significant loss of public trust if discovered" (KPMG 2013, p. 1).[1] Even so, municipal entities are heavily engaged in capital markets, impose taxes on citizens, and play a significant role in the economy. Despite the importance of this sector, only a handful of extant empirical studies investigate the aforementioned claims. I measure and examine municipal governments'[2] discretion over both accounting estimates and cash flows leading up to a significant capital-raising event: bond issuance.

Governments follow a unique financial reporting model. The Governmental Accounting Standards Board (GASB) requires state and local governments to present the results of governmental operations in two sets of financial statements: one on accrual basis and the other following the modified accrual basis of accounting. Under the modified accrual basis, governments recognize revenues when they are "measurable and available for paying current period obligations" and expenditures (rather than expenses) "when an obligation that will be paid from current period financial resources has been incurred" (Reck, Lowensohn, and Wilson 2013, p. 28). The GASB argues that modified accrual

[1] KPMG surveys employees of different industries on a broad range of misconduct, including financial reporting misconduct. The report does not separately describe the specific types of misconduct observed by government employees, but almost all of the specific types of misconduct reported by survey respondents as a whole are financial reporting–related.

[2] Internal actors such as politicians, legislators, and bureaucrats, as well as external actors such as special interest groups, the press, and voters, may influence the accounting decisions made by governments (Cheng 1992). In this paper, I collectively refer to the internal actors who actually make accounting decisions as "municipalities," "municipal governments," or similar. I also refer to these decision makers generically as "administrators," "officials," or "managers."

accounting is optimal for presenting the results of current-period activities, whereas full accrual accounting creates more transparent disclosures of governmental long-term obligations (GASB 2013). However, critics argue that modified accrual accounting masks the long-term consequences of current-period activities, adds unnecessary complexity that shrouds underlying economics, and should be abandoned altogether (ITA 2009; Naughton and Spamann 2015). The extent to which governmental managers use the discretion allowed opportunistically (i.e., to mislead or influence stakeholders' assessments about performance) when preparing either set of governmental financial statements is a relevant question in this debate. Such discretion has implications for the usefulness of governmental financial statements to stakeholders in evaluating creditworthiness, regulatory compliance, and managements' stewardship over taxpayer resources.

Emerging research supports the use of opportunistic financial reporting in the governmental sector, both in US states (e.g., Kido, Petacchi, and Weber 2012; Naughton, Petacchi, and Weber 2015; Costello, Petacchi, and Weber 2017) and municipalities (e.g., Felix 2015; Gore 2015). These studies provide growing evidence that external pressure from stakeholders, particularly citizens and regulators, is associated with managements' attempts to manipulate net income[3] or other financial figures. I contribute new knowledge of how *bond issuance* influences governmental accounting discretion and am the first to my knowledge to concurrently examine how governmental managers use discretion in the two separate sets of financial statements. Using a unique dataset of hand-collected financial data from over 200 California municipalities over a six-year period (2008–2013), I investigate how external pressure from creditors, a primary stakeholder group, influences governments' inclination to report opportunistically.

My tests focus on apparent manipulation of the bottom line in both full and modified accrual financial statements. I use a model of expected accruals to obtain a measure of manager discretion over

[3] *Net income* is not generally considered the proper term for the bottom line in the governmental setting. "Changes in net position" in the government-wide financial statements and "change in fund balance" in the modified accrual financial statements are analogous to the traditional net income figure found in other sectors but are measured using different bases of accounting. In the paper, I describe the bottom line in either set of financial statements simply as "net income" (NI) to avoid the redundancy of referring to the two income figures separately.

accounting estimates in full accrual financial statements. I use a category of transactions over which managers potentially have significant control—"other financing sources and uses"—as a measure of discretion in modified accrual financial statements. To test whether managers exercise discretion opportunistically, I test the level and direction of the relationship between accounting discretion and prediscretionary income on average and prior to the issuance of new debt.

To my knowledge, the only studies that examine government accrual manipulation examine *specific* accruals—specifically, pension and compensated absence liabilities—at the *state* level (e.g., Kido et al. 2012; Naughton et al. 2015). The incentive and ability to manipulate any specific category of accruals may differ for and between municipal governments. Municipal governments are distinct from state governments in size, governance structure, external monitoring, and access to financial resources, attributes that also vary greatly among municipalities. Municipalities vary in the extent to which they are involved in certain activities (e.g., funding their own pensions, investing in capital assets), which restricts the applicability of specific accrual measures to municipalities with significant involvement in the specific accrual-related activity. I differentiate my study by examining *municipalities'* manipulation of *aggregate* accruals, specifically to meet income goals within full accrual financial statements. My proposed measure of *overall* discretion and accounting quality in governmental financial statements is broadly applicable to different levels of government and potentially useful for testing many future research questions.

It is not straightforward to identify aggregate accruals in governmental financial statements because there is no government-wide statement of cash flows. Further, there is no centralized, machine-readable dataset for governmental financial statements, so data must be hand-collected. For citizens, creditors, and researchers, a measure of total accruals could be a valuable tool for assessing accounting quality and transparency. However, for such a measure to be practical, it should be simple enough that copious amounts of data are not required to estimate it while still considering the complexity of the governmental accounting model. I propose a measure of aggregate accruals that incorporates an estimate of operating cash flows derived from modified accrual financial statements. With this measure as the

dependent variable, I estimate discretionary accruals using a simple model inspired by Jones (1991). The model explains 63% of aggregate accruals despite requiring only three predictor variables. Thus, the measure has significant explanatory power with a manageable amount of data collection.

Within modified accrual financial statements, I use the total of a category of transactions called "other financing sources and uses" as a measure of discretion. Governments report transfers into and out of governmental funds to other funds separately from revenues and expenditures within this financial statement category. Recent studies (ITA 2009; Felix 2015; Gore 2015; Costello et al. 2017) document that administrators make transfers opportunistically to manage the appearance of available governmental resources. "Other financing sources and uses" also captures two other gimmicks identified by the ITA: gross proceeds generated from issuing debt and selling assets,[4] both of which have the same effect as revenues on the modified accrual bottom line. Like the discretionary accruals measure in full accrual financial statements, "other financing sources and uses" provides a comprehensive measure of opportunism in modified accrual financial statements with minimal data collection costs.

Creditors are often considered the primary users of governmental financial statements (e.g., Gore 2004), which they refer to for both resource allocation decision-making and monitoring purposes. Consequently, they are likely to place significant pressure on a municipality to both demonstrate stable financial performance and provide adequate disclosure. With the exception of Felix (2015), who examines general fund (a government's primary operating fund) transfers[5] following bond issues, previous studies generally control for some aspect of credit market participation but do not fully investigate how related incentives might influence managerial discretion. Further, no study to my knowledge examines the influence of bond issuance on accounting discretion in full accrual financial

[4] Costello et al.'s (2017) findings support asset sales as a mechanism to meet state balanced budget requirements.
[5] Felix (2015) uses an indicator equal to 1 in the *year of* a bond issue to measure the effect of bond issuance. This measurement is problematic because governments provide underwriters with the *most recent* financial statements when they issue new bonds. For this reason, I use an indicator equal to 1 in the year *leading up to* a bond issue.

statements.[6] Creditors must look to full accrual financial statements for information about a government's long-term liabilities and related expenses, which are not reported in modified accrual financial statements but are highly relevant given that bonds are often long-term liabilities. Accordingly, previous research (e.g., Plummer, Hutchison, and Patton 2007, and others outlined in Section 2) finds that full accrual financial statements provide information for default risk assessment that is incremental to information in modified accrual financial statements.

Government officials continuously face institutional pressures to allocate available resources toward public goods. However, when entering the bond market, they also face economic pressures to obtain additional resources at an affordable cost. I expect managers to act rationally by weighing the potential costs and benefits of using discretion to meet reporting goals (e.g., avoid a deficit). Discretion that allows a municipality to meet desired benchmarks could result in lower interest rates. At the same time, this significant event is associated with increased monitoring of managerial actions by creditors, which could lead to a greater chance that opportunistic reporting will be discovered, increasing its expected reputational and economic costs. The perceived sophistication of creditors and attention paid by creditors, as well as the perceived relative importance of each of the two sets of financial statements to creditors, are likely to play important roles in managements' deliberations regarding whether and how to use discretion.

Overall, my results support a significant effect of bond issuance on accounting discretion, particularly in full accrual financial statements, where municipalities use *more* discretion prior to bond issuance. There is also some evidence that municipalities use *less* discretion in modified accrual financial statements prior to a new bond issue. This could reflect the fact that accounting gimmicks such as transfers and asset sales are presented separately on the face of modified accrual financial statements (as

[6] Naughton et al. (2015) finds an association between state pension liability understatement and short-term debt issues but not long-term debt issues. Since states often issue short-term debt to balance budgets, this result is consistent with the study's other findings that states understate pension liabilities to close budget gaps. The study does not investigate the effect of accrual manipulations on full accrual financial statements or examine accrual manipulations in the year leading up to a bond offering (see footnote 5).

opposed to being estimated with a prediction model such as discretionary accruals), allowing for straightforward detection by sophisticated users. Further investigation reveals that on average years when no bond issue is planned, municipalities use discretion to avoid deficits more so than to avoid surpluses in both sets of financial statements. However, municipalities reporting deficits face the greatest scrutiny and, arguably, would bear the greatest costs if accounting gimmicks were detected by creditors prior to bond issuance. In line with this argument, the evidence suggests that municipalities are more hesitant to use discretion to avoid deficits prior to issuing bonds. Additional tests suggest that various governance characteristics may also influence discretion differently in full versus modified financial statements. Although the results are consistent when controlling for election years, additional analyses suggest that in some cases, election cycles may have an incremental effect on the incentives to use discretion.

The current study fills a void in accounting research related to managerial incentives and discretion over financial reporting in the public sector. I contribute to the governmental accounting literature by providing empirical evidence that municipalities use discretion strategically in *both* required sets of financial statements in order to approach a breakeven income. I build on previously developed theories of organizational behavior to explain these strategies. Additionally, I contribute a practical measure of discretionary accruals for governments and demonstrate its use in a sample of municipalities. By examining the role that credit market participation plays in municipal accounting choices, I contribute to the municipal bond market literature and create a segue for future research to examine whether the use of accounting discretion is material, in that it successfully alters the perceptions of creditors or other users. The results are relevant to standard-setters and stakeholders wishing to evaluate the decision-usefulness of governmental financial statements. Undetected accounting discretion has clear implications for stakeholders if, as evidenced in the corporate setting (e.g., Bartov, Givoly, and Hayn 2002; Gleason and Mills 2008), they are unable to fully disentangle the portion of accounting earnings that result. In the case of creditors, this could lead to inappropriate risk assessment and resource allocation, and losses in the event of unforeseen defaults.

2 Background and prior research

2.1 Governmental financial reporting and disclosure

The GASB is responsible for establishing generally accepted accounting principles (GAAP) for governments. Since 1999, GASB Statement No. 34 (GASB 34) has required that governments' Comprehensive Annual Financial Reports (CAFR) include full accrual basis financial statements in addition to the previously required modified accrual ("fund") financial statements (GASB 1999).[7] Full accrual financial statements are similar to a private corporation's financial statements, providing information about long-term assets, liabilities, and accrued revenues and expenses. In contrast, modified accrual financial statements focus only on current assets and liabilities. Several studies (Plummer et al. 2007; Davies, Johnson, and Lowensohn 2017) find that full accrual financial statements, particularly full accrual net assets, are informative to default risk assessment;[8] Beck, Johnson, and Parsons (2017) document that credit rating agencies use both sets of financial statements to assign bond ratings.[9] The financial statements report the operating performance and financial position of both governmental activities (e.g., collecting taxes and providing public services) and businesslike activities (e.g., providing utility services in exchange for user fees) that a government is involved in. I focus on the reported performance related to governmental activities.[10] Governments use the terms "change in net position" and "change in fund balance" to describe the degree to which revenues exceed costs in full accrual and

[7] GAAP does not require governments to present a CAFR, but if a government does choose to issue a CAFR, it must follow the guidelines of GASB 34. In California, most cities (including all with populations over 30,000) present a CAFR, as evidenced by over half of California cities receiving the Government Finance Officers Association Certificate of Achievement for Excellence in Financial Reporting (GFOA 2013). Since this paper focuses on both full and modified accrual reporting, "financial statements" and "annual report" is understood to refer to a CAFR.

[8] In addition to this evidence that the full accrual financial statements, specifically, are of use to creditors, Baber and Gore (2008) find that municipalities in states that require GAAP compliance enjoy lower costs of debt during the sample period 1995-2002 (the full accrual requirement was implemented in 1999), and Gore (2004) documents that municipalities issuing debt are likely to comply with GAAP, even when not required by statute.

[9] Beck et al. (2017) replicate municipal bond ratings using the Moody's (2009) methodology. The methodology includes examining the modified accrual financial statements to evaluate liquidity and short-term flexibility, as well as examining long-term debt and pensions, which are only shown on the full accrual financial statements, to evaluate leverage.

[10] Managerial discretion in governments' business-type activities are better suited for a separate study because (1) governments use a single accounting measure (full accrual accounting) to account for these operations, (2) they are intended to be self-funding rather than supported by taxes, and (3) the activities they engage in are almost identical to their nongovernmental counterparts.

modified accrual financial statements, respectively. For ease of exposition, I use the term "net income" to describe both.

According to the GASB, under the modified accrual basis used for the fund financial statements, "expenditures are recognized in the period in which they are expected to use current financial resources, revenue is not recognized until it is available to pay current obligations, and current liabilities are not recognized until due and payable" (GASB 2013, p. 32). The GASB asserts that the modified accrual basis of accounting is most useful for evaluating public officials' management of current resources to meet current obligations, whereas the accrual basis is more appropriate for evaluating public officials' management of all resources to meet long-term objectives (GASB 2013). The model has been criticized. For example, the ITA recommended in its 2009 report that "the presentation of [fund] accounts unnecessarily complicates the [governmental financial statements], delays its production, and distracts and confuses the reader" (p. 48).

Prior research identifies a relationship between credit market participation and governmental accounting choice, generally finding that borrowing is positively associated with GAAP compliance (Baber and Gore 2008) and financial disclosure levels (Robbins and Austin 1986; Gore 2004; Carroll and Marlowe 2009). In support of Zimmerman (1977), who asserts that monitoring levels drive governmental disclosure provision and quality, Cheng (1992) finds that a host of socioeconomic (e.g., citizen income, education); political (e.g., voter turnout, presence of special interest groups, governor's power); and internal (e.g., CPAs on staff, complexity of operations, cost of debt) factors influences state governments' disclosure quality.

Although stakeholder monitoring influences municipalities' accounting choices, resulting in better disclosure, it also increases pressure to report favorable results. Other research finds evidence that fiscally stressed state governments use aggressive valuation assumptions to understate pension liabilities, particularly with the existence of political pressure (e.g., Eaton and Nofsinger 2004; Kido et al. 2012; Naughton et al. 2015). Other studies, summarized below, also document the use of gimmicks in the face of increased stakeholder scrutiny.

2.2 Government stakeholders

In addition to creditors, government stakeholders also include citizens, employees, and regulators. These groups rely on governmental financial statements to inform decisions. Different stakeholder groups have different decisions to make and thus have different incentives for monitoring governmental financial statements and may exert conflicting pressures on a government. For example, citizens may focus on whether income is very positive (which they might perceive as evidence that taxes are too high or service provisions too low) or very negative (which may reflect the inability to operate sustainably). Accordingly, Felix (2015) finds evidence that municipalities generally strive to report breakeven income in the general fund.

Several studies document an association between financial statement metrics and election cycles (e.g., Ingram and Copeland 1981), suggesting that financial statements portray policy decisions made by political agents. Indeed, Kido et al. (2012) document that state governments manipulate employee benefit expenses in advance of elections. Employees may believe that slack resources should be reallocated to employee benefits and, as Gore (2015) suggests, may monitor government finances to inform negotiations. Gore finds that municipalities make transfers to conceal available resources from unions. Regulators, such as higher levels of government, may use the financial statements to monitor whether a municipality has complied with legal requirements related to grant funding, balanced budgets, or debt limits. Costello et al. (2017) find evidence suggesting that state governments use gimmicks such as selling assets and making fund transfers to achieve these regulatory benchmarks.

With respect to governmental finances, creditors' primary interest is in the government's ability to repay its debts. A municipality's bond rating and cost of debt reflect creditors' confidence in the current and future management of its obligations. Governmental accounting figures found in the financial statements are associated with bond ratings (e.g., Wescott 1984; Plummer et al. 2007; Marlowe 2007, 2011); interest costs (e.g., Wallace 1981; Marlowe 2007; Baber and Gore 2008); insurance premiums (Benson and Marks 2014); and yield premiums (e.g., Ingram and Copeland 1982; Copeland and Ingram 1983; Beck et al. 2017).

I investigate the influence of creditor pressure on governmental reporting decisions because creditors are considered the primary users of governmental financial statements (Gore 2004; Plummer et al. 2007). Corporate sector research finds more aggressive earnings management before debt issuance (Liu, Ning, and Davidson 2010; Crabtree, Maher, and Wan 2014); and successful use of accounting manipulations to manage credit ratings (Alissa, Bonsall, Kothari, and Penn 2013; Jung, Soderstrom, and Yang 2013) and to meet debt covenant requirements (DeFond and Jiambalvo 1994). Studying whether bond issuance motivates municipalities to use discretion opportunistically provides an avenue for future research to examine whether the credit market detects and discounts the financial statement impact of discretion. Additionally, examining governments' strategies for using discretion prior to bond issuance provides evidence of the transparency of the governmental reporting model.

2.3 Strategic response to external pressure

Municipal managers face *institutional* pressures from citizens to avoid both deficits and surpluses (as described above) and channel resources toward public goods. However, as part of securing these resources, managers also face *economic* pressures to obtain an affordable cost of debt in order to carry out organizational objectives. Managers must consequently balance pressures from citizens with those of creditors. Oliver (1991) proposes a framework wherein organizations respond *strategically* to competing pressures from multiple constituent groups through attempting compromise strategies (e.g., satisfying multiple groups' demands at once) or avoidance strategies (e.g., "window-dressing" [p. 154] or concealing nonresponsiveness to demands). Mitchell, Agle, and Wood (1997) posit that organizational responses focus, in part, on how urgent a particular constituent group's demands are at a given time.

Accounting research appears to support the theory that managers respond strategically to urgent and competing pressures. For example, prior research (e.g., Marquardt and Wiedman 2004; Hansen 2010; Jung et al., 2013) documents that managers pursue benchmarks that are consequential to current business dealings (e.g., engaging in a buyout or issuing new stock). Events (e.g., buyouts), benchmarks (e.g., analyst forecasts), and other incentives (e.g., stock-based compensation) examined by corporate sector research are largely absent from nonprofit and governmental settings. Rather, research shows that

nonprofits use various earnings management techniques to report profits at a range slightly above zero (Omer and Yetman 2003; Leone and Van Horn 2005; Ballantine, Forker, and Greenwood 2007) and that governmental managers pursue a similar benchmark (Felix 2015).

In the nonprofit setting, pressure to report small positive income comes from donors (who are less likely to donate to a profitable charity) and regulators (who could threaten the tax-exempt status of a profitable charity).[11] Krishnan and Yetman (2011), for example, find more financial statement manipulation by nonprofit hospitals facing greater institutional pressures and relying more extensively on donations, but less such manipulation by those facing greater regulatory scrutiny. Vansant (2016) builds on these findings and documents that nonprofit hospitals manage earnings more aggressively when institutional expectations to provide adequate levels of charity care have been met or surpassed, affirming that nonprofit managers' strategic reporting decisions take both economic and institutional pressures into account. Beck, Gilstrap, Rippy, and Vansant (2017) show further evidence that managers respond strategically to these competing pressures, and that nonprofit hospital managers shift costs from bad debt expense to charity care prior to issuing bonds. I contribute by investigating whether governmental managers use discretion strategically to pursue benchmarks around a specific event: entry into the public debt market.

3 Development of hypotheses

Given that municipalities face institutional pressure from citizens to avoid both deficits and surpluses (and thus report approximately breakeven income), I expect municipal managers to behave rationally by weighing the perceived costs of using discretion opportunistically to meet these expectations against the perceived benefits. Managers are likely to consider (1) the expected costs of reporting a deficit or surplus, which may include economic and political costs; (2) the likelihood and associated benefits of

[11] This reasoning is consistent with Fama and Jensen's (1983) analysis of principal–agent relationships in nonprofit organizations, where they contend that "one solution to [the] agency problem [in nonprofits] is to…contract with donors to apply all net cash flows to output" (p. 342).

using discretion over accounting estimates or transactions to achieve income goals; and (3) the likelihood and associated economic and political costs of opportunistic discretion being detected.

Citizens, regulatory agencies, and officials might focus on modified rather than full accrual financial statements because the modified accrual basis is the traditional basis for governmental accounting used to evaluate budget compliance. Previous research (e.g., Felix 2015; Costello et al. 2017) finds that governments seek to break even in the modified accrual financial statements, suggesting that managers perceive that the benefits of using discretion outweigh the expected costs. I expect to find evidence consistent with these studies when no bond issue is planned. However, it is unclear whether governmental managers perceive full accrual financial statements to be important to stakeholders and thus whether they would expect to benefit from using discretionary accruals to break even. If officials do not, the expected benefits of manipulating accruals will not exceed the expected costs, and I will not find evidence of using discretionary accruals to break even. On the other hand, full accrual financial statements are prominently presented within annual reports and contain information about long-term liabilities and governmental activities that should influence stakeholder decision-making. Also, manipulating accruals within an acceptable range is relatively easy (compared to, for example, selling assets). I expect that, as in modified accrual financial statements, managers will perceive that exercising discretion in full accrual financial statements is a worthwhile means of satisfying stakeholder expectations for income regardless of whether a bond issue is planned.

As managers weigh the costs and benefits of using discretion opportunistically, they likely consider the multiple—and possibly conflicting—pressures from different constituent groups. Mitchell et al. (1997) propose that organizations focus strategically on responding to stakeholders whose needs are urgent, that is, time-sensitive and important to the stakeholder (p. 867). Hypotheses 1a and 1b address how the prospect of a new bond issuance—a time-sensitive event—influences municipal officials' opportunistic reporting of income, an important figure to creditors.

Municipalities preparing to issue new debt face acute pressure to report favorable income because of the immediate effect that reported income has on the cost of debt. One important consideration for

municipal managers is that, in addition to being the primary users of governmental financial statements, creditors are sophisticated[12] and likely possess more financial expertise than the average citizen monitor. Corporate sector studies suggest that sophisticated investors are better able to identify earnings management and price assets accordingly (Jiambalvo, Rajgopal, and Venkatachalam 2002; Collins, Gong, and Hribar 2003). Yetman and Yetman (2013) find that, on average, nonprofit donors discount program ratios that have obviously been managed, but only sophisticated donors discount program ratios that have been managed using more complex methods.[13] The expected cost (benefit) of using discretion increases (decreases) with risk of detection because creditors may interpret such discretion as purposeful deceit, resulting in higher costs of debt and reputational harm.[14] When facing creditor scrutiny, administrators may choose to exercise discretion in ways that creditors would have difficulty detecting.

Managers potentially exercise discretion over accruals in full accrual financial statements through small adjustments to several different accounts easily hidden within the financial statements. In contrast, other financing sources and uses are discretely displayed on the face of modified accrual financial statements and may simply be added back to modified accrual income if the user wishes to see what income would have been without them. I predict that administrators use discretion that reflects this reasoning.

H1a: There is a positive association between a bond issuance and the use of discretionary accruals to break even in full accrual financial statements.

H1b: There is a negative association between a bond issuance and the use of other financing sources and uses to break even in modified accrual financial statements.

[12] According to Jiang (2008), 95% of bondholders are institutional investors, suggesting high sophistication. Jorion, Shi, and Zhang (2009) assert that credit rating agencies have access to private information and are also highly sophisticated.

[13] They do not test whether managers choose ratio management methods *based* on donor sophistication.

[14] For example, Moody's (Moody's 2014, p. 17) and S&P (Standard & Poor's 2013, p. 24) both include assessments of management in their bond rating methodologies. If the credit rating agencies detect management's use of discretion and believe that it is opportunistic, that could negatively affect their assessments of management and thus bond ratings.

Deficits call into question a municipality's ability to meet continuing obligations to both citizens and creditors. Although stakeholders also scrutinize surpluses, I expect the reputational and economic costs (benefits) of reporting (avoiding) deficits to exceed the costs (benefits) of reporting (avoiding) a surplus in both sets of financial statements. Hence, I propose Hypotheses 2a and 2b.

H2a: Municipalities use discretionary accruals to avoid deficits in full accrual financial statements more than to avoid surpluses.

H2b: Municipalities use other financing sources and uses to avoid deficits in modified accrual financial statements more than to avoid surpluses.

The larger the deficit, the more questionable the bond issuer's creditworthiness, and reporting a deficit is associated with a higher cost of debt (Benson and Marks 2007). While the danger of reporting a deficit may incentivize managers to use discretion opportunistically prior to a bond issuance, it is also sure to result in greater creditor scrutiny. As scrutiny increases, so does the likelihood of detection and the expected costs of engaging in financial statement manipulation. For this reason, it is unclear whether municipalities would increase their use of accounting discretion to avoid deficits prior to bond issues.

Conversely, lowering a surplus through income-decreasing accruals may not have a significant negative effect on perceived creditworthiness because all governments face institutional pressure to report income near zero. Citizens of municipalities with large surpluses may challenge the government's choice to fund projects by issuing debt rather than with excess revenues. Managers may strategically use income-decreasing accruals prior to bond issues to save the accruals for years when performance is worse. During poor performing years, accrual reserves could be useful for avoiding rating downgrades or covenant violations. Therefore, the expected costs of avoiding surpluses through discretionary accruals may be negligible, but the expected benefits may be significant. In full accrual financial statements, I expect

municipalities to continue and perhaps even increase the use of discretionary accruals when facing a surplus prior to a bond issue. This leads to Hypothesis 3a.

H3a: Municipalities use discretionary accruals to avoid deficits in full accrual financial statements relatively *less* than to avoid surpluses *prior to bond issues*.

As discussed in relation to H1b, I expect municipalities to be less opportunistic with other financing sources and uses in modified accrual financial statements prior to bond issues. Creditors can easily see through this manipulation strategy in modified accrual financial statements, and in the case of deficits, the use of such methods could alert creditors to questionable financial reporting tactics by managers. Since municipalities reporting deficits face greater scrutiny prior to bond issues and thus increase expected costs of using discretion, I expect them to be particularly cautious of using other financing sources and uses to avoid deficits in modified accrual financial statements prior to bond issues. Unlike accruals, it is not clear that saving other financing sources and uses for future years would be a useful strategy before issuing bonds since municipalities could conceivably use some combination of fund transfers, asset sales, and debt issuances to improve income year after year. However, like in the full accrual financial statements, lower scrutiny of surpluses (relative to deficits) may lower the expected costs of using discretion to avoid surpluses, and expected benefits may increase if citizens are unsupportive of bond issues in the presence of surpluses. This leads to Hypothesis 3b.

H3b: Municipalities use other financing sources and uses to avoid deficits in modified accrual financial statements relatively *less* than to avoid surpluses *prior to bond issues*.

4 Methodology

4.1 Regression analysis

I use Equations (1a) and (1b) to test my hypotheses. The dependent variable in each equation proxies for managerial discretion. In Equation (1a), which tests for discretion in full accrual financial statements, the proxy for discretion is discretionary accruals (*DA*). In Equation (1b), which tests for discretion in modified accrual financial statements, the proxy for discretion is other financing sources and uses (*OFSU*). Variables are further defined below, and additional measurement details are provided in Appendix A.

$$DA_{it} = \alpha_0 + \beta_1 \text{Pre-DA } NI^{FA}_{it} + \beta_2 PlanIssue_{it} + \beta_3 \text{Pre-DA } NI^{FA}_{it} \times PlanIssue_{it} + \beta_4 NI^{FA}_{it-1} + \beta_5 DA_{it-1} + \beta_6 BondDebt_{it} + \epsilon_{it} \quad (1a)$$

$$OFSU_{it} = \alpha_0 + \beta_1 \text{Pre-OFSU } NI^{MA}_{it} + \beta_2 PlanIssue_{it} + \beta_3 \text{Pre-OFSU } NI^{MA}_{it} \times PlanIssue_{it} + \beta_4 NI^{MA}_{it-1} + \beta_5 OFSU_{it-1} + \beta_6 BondDebt_{it} + \epsilon_{it} \quad (1b)$$

4.1.1 Discretion in full accrual financial statements

I measure discretionary accruals (*DA)* in Equation 1(a) using a model inspired by Jones (1991). To my knowledge, this study is the first to examine aggregate discretionary accruals in governmental financial statements. Although Leone and Van Horn (2005) and Ballantine et al. (2007) adapt the Jones model to noncorporate (nonprofit) settings, the original model is not necessarily suitable for the governmental setting. Even studies in the corporate setting note limitations to its applicability. For example, McNichols (2001) critiques the model for omitting factors such as industry, mergers and acquisitions, divesting activities, or stock offerings, which are likely to be correlated with normal accruals, leading to errors in aggregate discretionary accrual estimates. However, there are fewer caveats in modeling normal government accruals compared with corporate accruals. There are no stock offerings, mergers and dissolutions are extremely uncommon (Beck and Stone 2017), and the sample is, overall, relatively homogenous; that is, all are of the same industry, rely on the same revenue sources, and provide similar services.

The benefits of using a model similar to Jones's (1991) for this study as opposed to a model of specific accruals are as follows. First, although some studies (e.g., Kido et al. 2012; Naughton et al. 2015) examine accruals related to pensions and compensated absences at the state level, it is not clear that lower levels of government (e.g., municipalities) participate in these activities to the same extent. For example, most local governments in California do not sponsor their own pensions. A measure of overall accrual quality is broadly applicable to any level of government and to many research questions. Second, the model utilizes only a few variables, which is an important consideration given that governmental financial statement data must be hand-collected. Third, the Jones (1991) model is the most frequently used measure of accrual quality, which increases comparability with extant earnings management research. I apply a straightforward adaptation of the model to the government setting and propose the following alternative:

$$\text{TotAcc}_{it} = \alpha_0(1/\text{Population}_i) + \beta_1\Delta\text{Revs}^{FA}_{it} + \beta_2\text{TCA}_{it} + \beta_3(\text{Revs} - \text{Exp})^{FA}_{it} + \epsilon_{it} \quad (2)$$

Like Jones (1991), I control for change in revenues ($\Delta Revs$) because total accruals are a function of growth in government spending power, and for depreciable assets (*TCA*) because governments record depreciation similarly to corporations.[15] I modify the original Jones (1991) model by scaling all variables by population rather than total assets. There are at least three reasons for this change. First, extant governmental accounting research typically uses population as a proxy for government size, possibly because some governments do not capitalize infrastructure and because the complexity of a government's operations are closely linked to the size of the population it serves. Second, I further argue that population is a more appropriate proxy for unobservable forces that drive governmental revenues and expenses,[16] much as assets are an appropriate measure for these forces in the corporate setting. Third, population data are easily obtained from census records and thus reduce the number of variables that must be hand-

[15] Under GAAP, municipalities must capitalize infrastructure, but they have the option of whether or not to depreciate it. I use total *depreciable* capital assets as stated within the notes to the municipality's financial statements for *TCA* in Equation (2).

[16] For example, service demands, capacity to provide services and raise taxes, and economies of scale.

collected from financial statements to estimate the model. Reducing the necessity of hand collection where possible improves the usefulness of the model for future research. Population and total governmental assets are highly correlated in my sample (~90%, untabulated), and as described later in the paper, the results are consistent if total assets are used as a scalar instead. The third term in the equation, full accrual revenues minus expenses,[17] controls for current period performance as suggested by Kothari, Leone, and Wasley (2005).

The most important change I make is to the calculation of the dependent variable, *TotAcc*. By definition, total accruals are noncash income, and they are frequently measured as net income minus cash flows from operations. Since GAAP does not require governments to present a statement of cash flows for governmental activities, this approach would require one to calculate cash flows from operations using the indirect method,[18] which Hribar and Collins (2002) suggest can result in substantial measurement error. I propose calculating *TotAcc* as accrual basis net income[19] minus modified accrual revenues less expenditures.[20] Modified accrual revenues less expenditures may serve as a suitable substitute for cash flows from operations since modified accrual revenues (expenditures) are recognized upon the inflow (outflow) of "current financial resources" (typically cash) used in government operations. The only accruals recorded in modified accrual financial statements are those related to "current financial resources." For example, taxes due soon (defined by the GASB as two months) after fiscal year end are recorded in both sets of financial statements; thus *DA* will not capture manipulation in those accruals.

[17] Full accrual revenues minus expenses equals net income when there are no below-the-line, nonrecurring items. Kothari et al. (2005) control for performance using return on assets.
[18] Results are robust when calculating total accruals using the indirect calculation of cash flow from operations. Further details are given in the additional analyses section.
[19] To make full accrual and modified accrual financial statements comparable, I remove the net revenues of internal service funds from the full accrual financial statements since these are not accounted for in the governmental section of modified accrual financial statements. I obtain the net revenues from a dataset compiled by the California State Comptroller's Office; however, the data may also be hand-collected from municipal financial statements. I find generally consistent results when, instead of removing the net revenues of internal service funds, I control for the existence of an internal service fund with an indicator variable.
[20] Other financing sources and uses are excluded from the calculation because cash proceeds from issuing debt, selling capital assets, and fund transfers are not the result of operating activities. Repayment of debt would not be considered an operating cash flow but is considered an expenditure in modified accrual basis financial statements. The results of this study are robust to using the changes in bond debt rather than the level in Equations (1a) and (1b).

However, many accruals that are *not* related to current inflows or outflows (e.g., pensions, compensated absences, noncurrent receivables) are likely subjects of manipulation and are recorded in full accrual financial statements but omitted from modified accrual financial statements.

4.1.2 Discretion in modified accrual financial statements

Other financing sources and uses (*OFSU*), scaled by population, is the measure used to test discretion in modified accrual financial statements (Equation [1b]). Other financing sources and uses are reported beneath revenues and expenditures in modified accrual financial statements and include at least three mechanisms for manipulating the total governmental fund balance: (1) gross proceeds from long-term asset sales, (2) transfers between governmental funds and other funds, and (3) debt proceeds.[21] Each of these items has a variety of legitimate purposes. For example, administrators may transfer resources out of the general fund (a governmental fund) into a parking deck fund (an enterprise fund, where a government accounts for businesslike activities) after collecting taxes legally designated to building a new parking deck in a district. Administrators may also make transfers out of (or into) governmental funds with no bona fide purpose with the underlying intent of balancing the governmental funds. By shifting resources between funds, management can manipulate the appearance of flexible resources and financial condition.

Accruals by nature reverse in some future period. For example, the cumulative effect of depreciation expense that is underestimated in one year or several years in a row eventually reverses when either the auditor requires an adjustment to the accumulated depreciation account or the asset is sold at a loss. In contrast, it is unclear whether other financing sources and uses need ever to reverse. Barring legislative or practical restrictions, administrators could conceivably make transfers, issue debt, or sell assets every year. Unlike discretionary accruals, other financing sources and uses do not arise from

[21] My tests focus on discretion in the year prior to a bond issue. Therefore, if a bond issue is planned in year *t*, other financing sources and uses increases in year *t+1*, all else equal. However, I measure other financing sources and uses in year *t*, so this relationship does not affect the results. As discussed in the next section, consecutive bond issuance years following the initial issuance are dropped from the analyses.

accounting estimates and are not subject to the same degree of measurement error inherent in statistical procedures such as Equation (2). Other financing sources and uses are taken straight from the face of the financial statements.

4.1.3 Independent variables

Pre-DA NI^{FA} (*Pre-OFSU NI*^{MA}) is full accrual (modified accrual) income prior to discretionary accruals (other financing sources and uses) or prediscretionary income scaled by population. A negative significant coefficient on prediscretionary income in Equations (1a) and (1b) implies that managers use discretion to move income in the direction of zero (that is, to decrease positive or increase negative prediscretionary income).[22]

Potential bond purchasers and credit rating agencies demand a municipality's most recently available financial information in order to evaluate default risk. Any benefit a municipality expects to gain by using discretion in anticipation of a bond issue must be realized in the prior fiscal year so that it can be reported to creditors in advance. I examine whether municipalities behave differently in the year preceding a bond issue. The assignment of the dummy variable *PlanIssue* is illustrated in Figure 1. *PlanIssue* equals 1 if the municipality issues a bond within one year of the current year's audit report date.[23] I consider both general obligation and revenue bonds because issuances of either type are likely to increase the attention paid to governmental financial performance by creditors.[24] *PlanIssue* equals 0 in

[22] In general, the supposition that the greater the distance a municipality's prediscretionary income is from breakeven, the greater the amount of discretion managers will use to close the gap, suggests a linear association. However, if the deficit or surplus is so large the possibility of reporting near breakeven income is low, incentives to use discretion could diminish. Alternatively, incentives could remain strong if managers perceive that using discretion to report a smaller (rather than larger) deficit or surplus is worthwhile. Untabulated analyses suggest that the association between discretion and prediscretionary income is weaker in the range slightly above breakeven.
[23] I also run the analysis setting *PlanIssue* equal to 1 when a bond issued between the current year and subsequent year's audit report dates, and I obtain substantially the same results.
[24] For example, Moody's considers general government financial condition when rating utility revenue bonds, stating, "Utility bond indentures sometimes contain events of default tied to the bankruptcy or insolvency of the general government. […C]ash can often flow between [general governments and utility systems], sometimes with a formal mechanism. Debt and long-term liabilities are often paid by the same group of constituents. GO and utility issuers may also be exposed to the same pension plan. […] Because of these linkages, in most cases, ratings of a municipality's utility debt will be within two notches of its GO rating," (Moody's 2014b, pg. 5).

other years. When a municipality issues bonds multiple years in a row, only the first year in the string of issuance years is retained, and the following years are dropped from the sample.

[INSERT FIGURE 1]

The coefficient on the interaction of *PlanIssue* and prediscretionary income measures the incremental association between discretion and prediscretionary income prior to bond issues relative to other years. Assuming a negative $\beta_{1,}$ as hypothesized, a negative β_3 suggests that managers use discretion to break even to an even greater extent prior to bond issuance. A positive β_3 would suggest that bond issuance either suppresses manipulation or incentivizes discretion in the opposite direction.

Lagged NI^{FA} (NI^{MA}) controls for the extent to which current period discretion is associated with prior period performance in full accrual (modified accrual) financial statements. Lagged *DA* and *OFSU* control for prior period accrual reversals (in the full accrual model) or routine (normal) other financing sources and uses (in the modified accrual model). I control for a municipality's ongoing participation in the bond market, which may be associated with higher continuous levels of monitoring by creditors, with total *BondDebt*. *BondDebt* is the total outstanding bond debt secured by governmental activities, scaled by population. *PlanIssue*, in contrast, is strictly related to a single event: the issuance of new debt. Variables (other than *PlanIssue*) are scaled by population and winsorized at the 99th percentile. Year fixed effects are included in the model, and standard errors are clustered by municipality.

Figure 2 provides a summary of the information contained in each set of financial statements. Appendix B provides a detailed example of a set of governmental financial statements and how variables are calculated.

[INSERT FIGURE 2]

5 Data and results

My sample consists of California municipalities with fiscal years ending in 2008–2013. I also collect data from 2007, which I use for the lagged control variables in the models, but do not include in the main analyses. I restrict the sample to cities with a population greater than 30,000 because smaller

municipalities often lack the necessary staff and resources to publish financial statement data comparable to that of larger cities.[25] California municipalities are diverse in size and structure, and they exhibit a high level of GAAP compliance and online availability of financial reports. GAAP compliance is essential to this study because I measure applications of discretion to the GAAP reporting requirements for governments. Online availability of financial statements is also important because the incentives to report opportunistically are debatable if the financial reports are never made widely available to the public. The same qualities that make California a desirable setting for my study also introduce limitations. My results may not generalize to municipalities in other states with different reporting requirements or political or economic conditions.

There are 232 California municipalities with populations greater than 30,000, resulting in 1,392 potential observations. I obtain financial data from the cities' audited financial statements, which I collect by hand. Only five cities did not have any financial statement data available online. I exclude city-year observations for which (1) the necessary financial statements, including financial statements containing lag data needed to run the models, are not available online; (2) necessary variables are missing from the published financial statements; or (3) a bond has been issued in the previous year. Generally speaking, the online availability of financial statements improves over time. Most of the dropped observations are due to the unavailability of financial statements online from 2009 and earlier. I obtain population and citizen income data from the United States Census Bureau. I use the SDC Platinum database to identify the years that bonds are issued.

Table 1 shows the results of Equation (2) run on all observations with sufficient data (n=1,079). Note that Equation (2) requires one year of lagged data. My data goes back to 2007, thus, I run Equation (2) on observations in the period 2008-2013. *TotAcc* is calculated using modified accrual revenues minus expenditures as a measure of cash flows from operations. The model explains 63% of variation in this measure of total accruals, which seems satisfactory given the explanatory power reported for similar

[25] This generalization arises from my personal experience with hand-collecting municipal financial data for other studies.

models in other studies (for example, Jones [1991] reports an R-squared of 23%). Alternative specifications for calculating *DA* are also examined and summarized in the additional analyses section.

[INSERT TABLE 1]

5.1 Descriptive statistics

Table 2 reports descriptive statistics. The magnitude of other financing sources and uses per capita ($74.15) far exceeds discretionary accruals per capita ($4.00). Despite most municipalities reporting negative modified accrual *NI*, almost all manage to report positive full accrual *NI*. The mean (median) municipality in the sample has a population of 121,805 (70,584) and *BondDebt* of $909.76 ($564.14) per capita.

I perform the analyses on two samples of the data. The "All Cities" sample consists of all city-year observations except those wherein a municipality issues a bond immediately following a year in which it also issued a bond. The "Issuing Cities" sample is further restricted to cities that issue bonds at some point during the sample period. This is to mitigate concerns that differences between cities that issue versus do not issue bonds during the sample period drive the results (rather than differences between the years leading up to bond issuance versus years that do not). A bond issue is planned in the coming year for 21.8% (25.7%) of all city-year (issuer city-year) observations.

[INSERT TABLE 2]

5.2 Correlations

Table 3 shows the correlations between the primary variables of interest. Variation in reported income is significantly associated with discretion. Discretionary accruals are 3.1% (p-val<.01) correlated with full accrual reported income, and other financing sources and uses are 56.5% (p-val<.01) correlated with total modified accrual reported income. Discretionary accruals are positively and significantly (23.2%, p-val<.01) correlated with other financing sources and uses. Both measures of discretion show a significant positive association (both 24%, p-val<.01) with total *BondDebt*, suggesting that discretion increases with credit market participation despite greater scrutiny by creditors. However, the plan to issue

bonds is not correlated with net income in either set of financial statements, nor with any of the other variables.

[INSERT TABLE 3]

5.3 Tests of hypotheses

Table 4 reports the results of Equation (1a), which examines discretionary accruals in full accrual financial statements. The results are presented for all cities and for bond-issuing cities. Equation (1a) controls for lagged discretionary accruals, which I estimate using Equation (2) for the period 2008-2013. Thus, Equation (1a) is run on observations during the period 2009-2013.

[INSERT TABLE 4]

As expected, the coefficient on *Pre-DA* NI^{FA} (β_1) is negative and significant for both samples, indicating municipalities' pursuit of a breakeven income in full accrual financial statements using discretionary accruals to increase negative and/or decrease positive income. Two coefficients in Equation (1a) assist in evaluating the effect of bond issuance on discretionary accruals. The coefficient on the *PlanIssue* indicator variable, β_2, is an intercept shift representing the difference in average discretionary accruals for municipalities issuing bonds relative to those that are not. The results suggest that municipalities show no difference in levels of discretionary accruals prior to issuing bonds.

To test H1a, which predicts that municipalities use discretionary accruals to break even more aggressively prior to a bond issue, I focus on β_3, the coefficient on the interaction term. β_3 is a slope shift representing the difference in the extent to which municipalities issuing bonds attempt to increase (decrease) positive prediscretionary income through discretionary accruals relative to those that do not. β_3 is negative and significant in both the sample of all cities (-0.213, p-val<.05) and issuer cities (-0.248, p-val<.01), supporting the hypothesis that municipalities place particular focus on pursuing breakeven income in full accrual financial statements using discretionary accruals prior to bond issuance.

Table 5 presents the results of Equation (1b), which examines other financing sources and uses. As in Table 4, the coefficient on prediscretionary income is negative and significant, suggesting that managers use other financing sources and uses to break even in the modified accrual financial statements

in the samples of both all cities (-0.281, p-val<.01) and issuer cities (-0.290, p-val<.05). However, I do not find support for H1b, which predicts that municipalities are less keen to use this more obvious form of discretion in modified accrual financial statements prior to bond issues. Although the coefficients are positive on the interaction term, as expected, they are not significant.

[INSERT TABLE 5]

Although reporting either carries reputational risk, reporting a deficit is arguably less desirable than reporting a surplus. H2a and H2b predict that municipalities will place relatively *more* emphasis on avoiding deficits than surpluses in both sets of financial statements. To address this question, I examine Equations (1a) and (1b) in negative and positive partitions of prediscretionary income. Tables 6 and 7 show the results of Equation (1a) (discretionary accruals) and (1b) (other financing sources and uses), respectively. Within each table, Panel A (B) shows the results of the equation in the prediscretionary deficit (surplus) partition, and Panel C provides the results of a test of the difference in coefficients between the two partitions. The significant negative association between discretion and prediscretionary income appears to be concentrated in the prediscretionary deficit partitions in both full accrual (Table 6) and modified accrual (Table 7) financial statements. To test H2a and H2b, I test the difference between β_1 in the two partitions. Specifically, I expect β_1 in the deficit partitions to be *more negative* than in the positive partitions. As shown in Panel C in both Table 6 and Table 7, I find this to be the case in both sets of financial statements. Thus, it appears that municipalities use discretion more aggressively to avoid deficits than surpluses, supporting H2a and H2b.

[INSERT TABLES 6 AND 7]

Bond issuance further complicates municipalities' decisions about using discretion when reporting deficits versus surpluses. Reporting a deficit is associated with a higher cost of debt. Creditors are sophisticated users, and although discretionary accruals may be difficult to detect, creditors are likely to increase scrutiny over municipalities with questionable financial performance. Therefore, I predict in H3a that municipalities with prediscretionary deficits in full accrual financial statements will use discretion to break even to a lesser extent than their surplus-producing counterparts. Table 6 shows that

the interaction is no longer significant in the deficit partition, suggesting that municipalities do *not* go to additional trouble to avoid full accrual deficits through discretionary accruals prior to issuing a bond. However, β_3 is still significantly negative in the surplus partition for all cities (-0.263, $p<.05$) and for issuing cities (-0.306, p-val<.01). The chi-squared test in Panel C provides additional evidence that discretionary accruals are used by surplus municipalities more so than by deficit municipalities, although the test is significant only for the sample of all cities. This supports H3a and is consistent with municipalities perceiving less scrutiny over discretionary accruals by creditors when income is positive, and perhaps taking the opportunity to save accruals for years when performance is worse. Assuming the bond being issued will be outstanding for some time, accrual reserves could be a useful tool for meeting debt covenants or avoiding bond downgrades in future years. Political incentives may also play a role, since citizens may question the prudence of issuing long term debt when excess revenues appear available.

H3b predicts similar results in modified accrual financial statements: since deficit municipalities face the greatest scrutiny, they will be more hesitant to use discretion prior to bond issues. In Table 7, β_3 is slightly positive for all cities (0.315, $p<.01$) and issuing cities (0.332, $p<.01$) in the deficit partition, contradicting the negative significant sign on β_1 and suggesting that discretion to avoid deficits is attenuated prior to issuance. The interaction is insignificant in the surplus partition. The chi-squared test in Panel C shows that the interaction coefficient in the deficit partition is greater than in the surplus partition; i.e., managers use other financing sources and uses to avoid deficits to a lesser extent than to avoid surpluses prior to bond issuance. The evidence supports H3b.

Overall, the results are consistent with municipalities perceiving additional scrutiny over deficits prior to issuing bonds and weighing the expected costs and benefits of using discretion accordingly. In the case of discretionary accruals, which are difficult to detect, municipalities in the deficit partition simply *do not change* their use of discretion prior to issuing a bond. In the case of other financing sources and uses, which are easy to detect, municipalities actively *decrease* discretion prior to issuing a bond. However, other financing sources and uses are no different in the surplus partition prior to bond issuance.

6 Additional analysis

6.1 Discretion and monitor groups

The results of the main analysis suggest that managers exercise discretion in both sets of governmental financial statements but that the target of discretion—full or modified accrual financial statements—might differ depending on the source of scrutiny. Specifically, municipal officials appear to consider user sophistication when weighing the expected costs and benefits of using discretion. An additional question concerns how the existence and sophistication of other monitors affect this choice. I investigate this question by regressing the absolute value of the discretion proxies on a number of monitor-related factors, which might affect both incentives to report opportunistically as well as the perceived likelihood of detection by stakeholders. I use the absolute value to observe how monitors affect the overall magnitude of discretion, not necessarily its association with prediscretionary income. The results are presented in Table 8.

Although I do not claim that this exploratory analysis is exhaustive of all potential factors affecting accounting discretion, each variable is selected to proxy for monitoring by specific user groups. *Unions* is the percentage of public employees who are members of unions in the municipality's metropolitan statistical area in 2010, taken from the Bureau of Labor Statistics. *MedInc* is the city's median income per capita in 2013 as estimated by the US Census. Studies (e.g., Robbins and Austin 1986) often use median income as a proxy for citizen monitoring. Higher-earning individuals are generally thought to be more engaged with local government. *StrongMayor* is an indicator equal to 1 if the city has a mayor-council form of government. Giroux and McLelland (2003) document that cities organized under the council-manager form of government perform better and provide better disclosures than those with the mayor-council form. When considering the results, it is important to note that only eight cities in California operate under the mayor-council form of government. *AuditCount* is the number of audits in the sample performed by the city's auditor. There are not sufficient observations with Big N auditors to perform a meaningful test of auditor size. However, Garven, Beck, and Parsons (2017) show

that specialization, measured as the number of nonprofit audits performed by an auditor, is more important than auditor size in determining nonprofit financial reporting quality. Other variables are previously defined.

According to Table 8, *Unions* is positively associated with other financing sources and uses (1.18, p<.05). This is consistent with Gore (2015), who suggests that unions look for excess resources in the fund financial statements to increase bargaining power. There is also some evidence that cities with strong mayors have lower absolute discretionary accruals (-64.82, p-val<.10). Perhaps city managers understand the discretion available under full accrual accounting better than mayors. Consistent with the results reported in Tables 6 and 7, accounting discretion increases with outstanding bond debt when measured as both discretionary accruals (0.07, p<.01) and other financing sources and uses (0.03, p<.01). Both methods of manipulation increase with *MedInc* (0.00, p<.05). Future research could investigate whether officials leading cities with high-earning citizens are more likely to have corporate accounting experience. Those officials might be more comfortable with full accrual accounting and have a better understanding of how to use discretion over accruals. The results could be extended further to investigate the effect of these and other monitoring mechanisms on the size and direction of accounting discretion.

[INSERT TABLE 8]

6.2 Discretion around elections

Another question that arises is whether election cycles may account for my results, since Baber and Sen (1986) find that public officials are more likely to issue debt before elections. I run my original analysis with the addition of an indicator variable, *Election*, which is equal to 1 in the year preceding a mayoral election, and an interaction of *Election* with prediscretionary income in each set of financial statements. The results (untabulated) are substantially consistent for *PlanIssue* and its interaction with prediscretionary income. Further, mayoral elections do not appear to incentivize the use of discretionary accruals to break even as the interaction between *DA* and *Election* is insignificant. However, the results suggest that the use of other financing sources and uses is *less* prevalent prior to elections, particularly to avoid deficits. The implication is similar to that of the main findings: deficits increase scrutiny and thus

the expected costs of using accounting gimmicks. The fact that elections appear to influence discretion in full accrual but not modified accrual financial statements could reflect citizens' focus on the traditional fund reporting model prior to elections. The results should, however, be interpreted with caution because a number of important election-related variables are missing from my analysis. Variables such as the competitiveness of the election, whether the city operates under the strong mayor government form, and whether an incumbent is running for reelection clearly play important roles in the use of discretion around election cycles. The election cycle is not a focus of this study nor is my dataset sufficient to fully investigate these avenues, so I leave further investigation to future research. However, the results of this sensitivity test do help alleviate concerns that elections rather than bond issues drive my primary results.

6.3 Alternative measures of discretionary accruals

My measure of discretionary accruals makes several deviations from the traditional models used by prior research. For example, and as discussed previously, I scale the Equation (2) variables by population rather than beginning total assets. I also use modified accrual revenues minus expenditures as a substitute for cash flow from operations rather than calculating them using the indirect method. I made these choices in part to better adapt discretionary accrual models used in extant corporate accounting research to the governmental setting and in part to ensure that data collection costs will be manageable for future researchers who may wish to use the measure. Table 9 illustrates that my results are not generally sensitive to these choices, although additional data collection does sometimes provide stronger or weaker results.

In Panel A, I show the Adjusted R-squared for Equation (2) using various specifications of the model. The heading of each column describes the measure used to calculate discretionary accruals. In columns 3, 4, 7, and 8, I measure discretionary accruals as full accrual net income minus cash flows from operations, and I use the indirect method to calculate cash flows from operations. The odd (even) columns show the results when population (lagged total assets) is used as a scalar for all variables where population is used as a scalar in the main analysis. Panel B shows the results of Equation (1a) using the

specifications for discretionary accruals in the corresponding column of Panel A. The same control variables used in the main analysis are included in both equations but are untabulated for brevity.

In Panel A, Column 1 shows Equation (2) as it is presented in the main analysis. Column 2 shows the results of the same equation but with all variables scaled by lagged total assets.[26] The results show a slight improvement in R-squared when population is used. In fact, scaling by population results in a higher R-squared throughout Panel A, suggesting that this specification better explains variations in total accruals. Regardless of whether population or total assets is used as a scalar, total accruals are better explained by the control variables when measured as full accrual net income minus modified accrual revenues less expenditures (as in Columns 1, 2, 5, and 6) than as full accrual net income minus cash flows from operations (calculated using the indirect method)[27] (as in Columns 3, 4, 7, and 8).

Columns 5 and 6 (7 and 8) use the same total accruals calculation as Columns 1 and 2 (3 and 4), but changes to taxes receivable are subtracted from changes in revenues in Equation (2) to assimilate the modified Jones model (Dechow et al. 1995). This modification allows for the possibility that municipalities manipulate estimates of taxes likely to be collected. Municipalities account for estimated uncollectible taxes receivable[28] in modified accrual financial statements but only those related to taxes meeting the "current financial resources" requirement (i.e., receivable within two months of year end). Therefore, in Columns 5–8, *DA* should capture discretion over collectability estimates related to longer-term taxes receivable, which are recorded in full accrual financial statements only. In general, the explanatory power of the model is not very sensitive to this change. The R-squared values in Columns 5–8 are similar to the corresponding R-squared values in Columns 1–4.

[26] When scaling by total assets, results are consistent if I also control for population.
[27] Calculated as Net Income + Depreciation +(–) Decreases (Increases) in Current (noncash) Assets +(–) Increases (Decreases) in Current Liabilities +(–) Losses (Gains). Variables are taken from the full accrual financial statements.
[28] Taxes receivable are generally the most substantial of government receivables, but the data can prove problematic because governments are inconsistent in whether they report all taxes receivable in aggregate; differentiate between property taxes, sales taxes, and others; or report only accounts receivable and do not disaggregate taxes. I use taxes receivable or sum all of the various tax receivable accounts where possible. I use accounts receivable when no taxes receivable are listed. The quality of receivables data likely contributes to the lack of improvement in using the modified Jones model over Equation (2).

Column 1 of Panel B shows the results of the main discretionary accrual analysis, shown in Table 4. The main results are consistent throughout Columns 2–8 with the exception of Column 6, which shows that the effect of bond issuance on discretionary accruals to break even is not significant when lagged total assets is used as a scalar and the modified Jones model is used to predict total accruals. Interestingly, the R-squared values for Equation (1a) are lower when the variables are scaled by population rather than total assets despite population being a slightly better predictor of total accruals in Equation (2). This could be because some of the independent variables in Equation (1a) do a better job of explaining discretionary accruals when scaled by total assets rather than population. Future researchers wishing to measure governmental discretionary accruals should evaluate whether the benefit of using total assets as a scalar (greater explanatory power) justifies the costs (for example, hand-collecting the data for each year in the sample and defending against the theoretical argument that population is a more appropriate measure of government size and complexity).

[INSERT TABLE 9]

7 Conclusion

Although earnings management has a long and extensive history of academic research in the corporate setting, similar activities in the governmental setting have enjoyed relatively little exploration. The media report that governments of all levels use accounting gimmicks to balance budgets (Walsh and Cooper 2012; Williams 2012; Richwine 2013; Flatten 2014), and a recent survey of government employees reports that, as an industry, the public sector ranks second-highest in "misconduct that would cause a significant loss of public trust if discovered" (KPMG 2013). Corporate sector earnings management research cannot be generalized to the governmental setting, because, in addition to economic incentives to minimize the cost of capital also experienced by private organizations, governments face intense institutional and political incentives. These sources of pressure may be at odds with each other, and it is important for citizens, regulators, and researchers to understand how officials use accounting discretion to respond.

Current governmental accounting research has not examined the use of accounting gimmicks in full accrual financial statements, and it has not investigated whether governments report opportunistically to prepare for bond issuances, one of the most significant financial activities that governments take part in. This study provides empirical evidence that governments (1) use discretion in *both* sets of financial statements, (2) increase their use of discretionary accruals prior to bond offerings, (3) decrease their use of accounting gimmicks easily detected in modified accrual financial statements prior to bond offerings, (4) use discretion primarily to avoid deficits on average, and (5) respond to increased creditor scrutiny of deficits by using *less* discretion to avoid deficits prior to bond issuance. Together, the evidence suggests that municipal governments are somewhat strategic in both the decision to use discretion and the approach.

Understanding the tactics used by governments to exercise discretion is crucial to evaluating both financial results presented by municipalities and the transparency of the governmental reporting model. In addition to the implications of my main findings for governmental accounting research, I also contribute by developing a model to estimate total discretionary accruals based on the Jones (1991) model. The Jones model was not originally intended for the governmental setting and has been criticized for its simplicity and lack of applicability to complex corporate settings. Despite these challenges, I adapt the model to the governmental setting, which is relatively homogenous compared to the corporate setting. The model is simple, which is important given the costs of hand-collecting data in governmental research. I propose a new measure of total governmental accruals and find that my adapted discretionary accrual model predicts over 60% of total accruals. The measure is useful for other researchers interested in investigating accounting quality in the governmental context.

My sample is restricted to municipal governments within the state of California and a six-year time frame of the years 2008–2013. I made these choices to improve the feasibility of performing this study, which relied on hand-collecting a large amount of financial data. However, the sample parameters do limit this study's generalizability to other states, levels of government, and time periods. Even within the financial data collected, there are limitations to the governmental reporting model that disable me

from using some research methods that have been deemed superior by corporate sector earnings management research. For example, GASB 34 does not require governments to report a statement of cash flows for its governmental activities. Many discretionary accrual measures use variables found in the statement of cash flows in their calculations. Future researchers may be able to overcome the limitations I have encountered and build on the present study.

Despite these limitations and others, I have provided evidence of opportunistic financial reporting in the governmental sector and the influence of enhanced scrutiny from stakeholders, primarily the credit market, on these activities. The findings are new and contribute to our understanding of governmental accounting quality and reporting incentives.

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Appendix A Definitions of Variables Used in Main Analysis

Variable	Definition	Appendix B Reference
Variables Used in Equations (1a) and (1b)		
PlanIssue	Equals 1 in year *t* when the municipality issues a bond within one year of the year *t* audit report date, and 0 otherwise.	N/A
Population	The municipality's 2013 population (a measure of size).	K
BondDebt	Total governmental activities' bond debt held by municipality *i* as of the end of year *t*, scaled by *Population*.	A
Variables Used in Equation 1(a), Full Accrual Financial Statements		
DA	Total discretionary accruals estimated in full accrual financial statements, scaled by *Population*, measured using the residual of Equation (2).	L
NI^{FA}	Net income (i.e., "changes in net position") reported in full accrual financial statements, scaled by *Population.*	E
Pre-DA NI^{FA}	Prediscretionary income in full accrual financial statements. Calculated as full accrual net income (NI^{FA}) minus discretionary accruals (*DA*), scaled by *Population*.	E – L
Variables Used to Estimate Discretionary Accruals		
$Revs^{MA}$	Total revenues in modified accrual financial statements, scaled by *Population.*	F
Exp^{MA}	Total expenditures in modified accrual financial statements, scaled by *Population.*	G
TotAcc	Total accruals estimated in full accrual financial statements, calculated as full accrual net income minus modified accrual revenues less expenditures (NI^{FA} – [$Revs^{MA}$ – Exp^{MA}]), and scaled by *Population.*	E – (F – G)
$Revs^{FA}$	Total general and program revenues in full accrual financial statements, scaled by *Population.*	B + C
Exp^{FA}	Total expenses in full accrual financial statements, scaled by *Population*.	D
ΔRevs	Change in $Revs^{FA}$ from *t* to *t-1*, scaled by *Population*.	N/A
TCA	Total depreciable capital assets disclosed in the notes to the financial statements, scaled by *Population.*	J

Variables Used in Equation 1(b), Modified Accrual Financial Statements

OFSU	Total other financing sources and uses reported in modified accrual financial statements, scaled by *Population.*	H
NI^{MA}	Net income (i.e., "changes in governmental fund balances") reported in modified accrual financial statements, scaled by *Population.*	I
Pre-OFSU NI^{MA}	Prediscretionary income in modified accrual financial statements. Calculated as modified accrual net income (NI^{MA}) minus discretionary accruals (*OFSU*), scaled by *Population*.	I – H

Appendix B Example of Governmental Financial Statements

Bondsville, California, is a fictional city with a population of 75,000. The city has no enterprise funds. Note that this is a simplified example used for illustrative purposes, and that municipalities vary in the extent to which they engage in activities related to long-term assets and liabilities, which ultimately creates differences between full and modified accrual financial statements. In practice, the full accrual income statement follows a unique format in which expenses are listed first. However, for ease of comparability and presentation, the format in this example is consistent with the format of the corporate sector and modified accrual income statement.

Statement of Net Position
(i.e., *Full Accrual* Balance Sheet)
Governmental Activities
Bondsville, CA
In thousands

Assets		
Cash	$200	
Investments	75	
Taxes Receivable (net)	650	
Capital Assets (net)	20,000	
Total Assets	*$20,925*	
Liabilities		
Accounts Payable	$400	
Interest Payable	190	
Wages Payable	360	
Accrued Employee Benefits	45	
Bonds Payable	17,000	**A**
Total Liabilities	*$17,995*	
Net Position	*$2,930*	

Balance Sheet
(i.e., *Modified Accrual* Balance Sheet)
Governmental Funds
Bondsville, CA
In thousands

Assets	
Cash	$200
Investments	25
Taxes Receivable (net)	650
Total Assets	*$875*
Liabilities	
Accounts Payable	$400
Interest Payable	20
Wages Payable	360
Total Liabilities	*$780*
Fund Balance	*$95*

Balance Sheet Reconciliation

Total Fund Balances—Governmental Funds	**$95**
Amounts reported in the full accrual financial balance sheet are different because:	
Capital assets used by governmental activities are not financial resources and are not reported in the funds.	*20,000*
Long-term liabilities, including bonds payable, are not due and payable in the current period and are therefore not reported in the funds.	*(17,000)*
Some investments are not available to pay for current-period expenditures and thus are not classified as current financial resources or reported in the funds.	*50*
Accrued expenses such as interest ($170) and employee benefits ($45) that are not due and payable in the current period are not included in the fund financial statements.	*(215)*
Net Position of Governmental Activities	**$2,930**

Statement of Changes in Net Position
(i.e., *Full Accrual* Income Statement)
Governmental Activities
Bondsville, CA
In thousands

Program Revenues		
General Government		
Charges for Services	$1,000	
Grants and Contributions	50	
Public Safety		
Charges for Services	6,000	
Parks and Recreation		
Charges for Services	4,500	
Grants and Contributions	950	
Total Program Revenues	*$12,500*	**B**
General Revenues		
Property Taxes	$15,000	
Sales Taxes	6,500	
Investment Earnings	750	
Total General Revenues	*$22,250*	**C**
Expenses		
General Government	14,000	
Public Safety	10,500	
Parks and Recreation	8,250	
Interest on Long-Term Debt	50	
Total Expenses	*$32,800*	**D**
Increase in Net Position	$1,950	**E**

Statement of Revenues, Expenditures, and Changes in Fund Balance
(i.e., *Modified Accrual* Income Statement)
Governmental Funds
Bondsville, CA
In thousands

Revenues		
Property Taxes	$14,900	
Sales Taxes	6,500	
Licenses and Permits	1,000	
Fines and Forfeits	6,250	
Intergovernmental	1,000	
Charges for Services	4,250	
Investment Earnings	650	
Total Revenues	*$34,550*	**F**
Expenditures		
General Government	11,025	
Public Safety	9,700	
Parks and Recreation	7,700	
Interest	45	
Capital Outlay	2,250	
Total Expenses	*$30,720*	**G**
Other Financing Sources (Uses)		
Proceeds of Long-Term Debt	2,000	
Proceeds from Sale of Capital Assets	900	
Total Other Financing Sources (Uses)	*$2,900*	**H**
Net Change in Fund Balance	$6,730	**I**

Income Statement Reconciliation

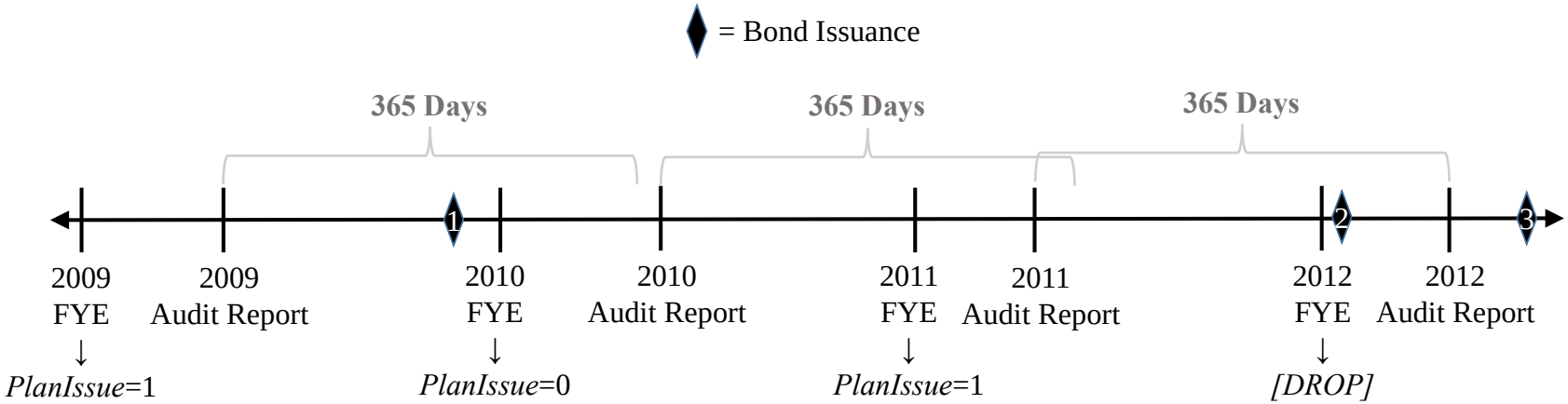
Net Change in Fund Balance—Governmental Funds	**$6,730**
Amounts reported for governmental activities in the full accrual income statement are different because:	
Governmental funds report capital outlays as expenditures ($2,250), but the cost of these assets is allocated over their useful lives as depreciation expense in the full accrual financial statements ($3,000). This is the amount by which depreciation exceeds capital outlays.	*(750)*
The proceeds from the disposal of capital assets ($900) are reported as an "other financing source" in the modified accrual financial statements, whereas the net gain or loss from the disposal is reported in the full accrual financial statements. The capital assets were sold at book value, resulting in $0 net effect on the full accrual financial statements.	*(900)*
Bond proceeds provide current financial resources to the governmental funds but increase long-term liabilities in the full accrual financial statements.	*(2,000)*
Revenues that do not provide current financial resources do not meet the criteria for recognition in the modified accrual financial statements.	*200*
Some expenses do not consume current financial resources and are not recognized as expenditures in the modified accrual financial statements. This is the amount by which such expenses (e.g., interest expense, pension expense) exceed actual expenditures (e.g., cash interest payments, pension contributions).	*(1,330)*
Increase in Net Position of Governmental Activities	**$2,100**

Excerpt from the notes to the financial statements (in thousands):
Total depreciable capital assets = $55,000
Other Information:
Population = 75,000
Discretionary Accruals (estimated) = $63.60 per capita

J

K
L

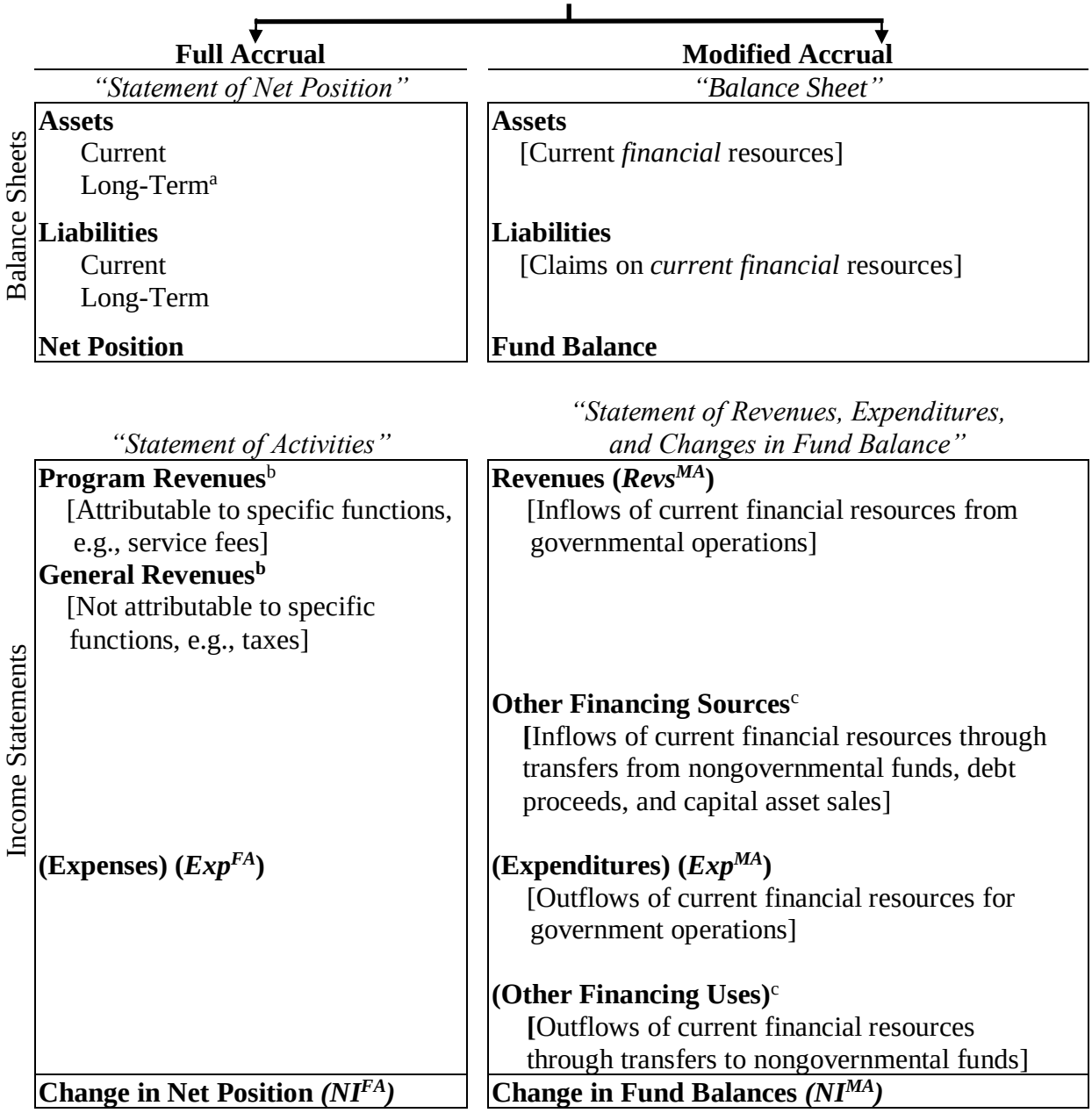
Figure 1 Example timeline of bond issuance and the assignment of the *PlanIssue* variable



Since bond issue (1) occurs within 365 days of the 2009 audit report, *PlanIssue* = 1 in 2009. There are no bond issuances within 365 days of the 2010 audit report, so *PlanIssue* = 0 in 2010. Bond issue (2) occurs in 2012; however, the 2011 audited financial statements are the most recently available to creditors. Therefore, *PlanIssue* = 1 in 2011. Bond issue (3) occurs after the 2012 audit report, so *PlanIssue* would equal 1. However, because *PlanIssue* = 1 in the previous year, 2012 is dropped from the sample.

Note that audit reports do not always occur exactly 365 days apart. Results of the study are robust to assigning *PlanIssue* = 1 when a bond issuance occurs between the current year's and subsequent year's audit dates. Results are also robust to including subsequent bond issuance years, such as 2012 in this example.

Figure 2
Governmental Financial Statements



[a] Capital assets are included within the long-term assets but are generally reported net of accumulated depreciation. I obtain *total* capital assets (*TCA*) from the financial statement notes.
[b] $Revs^{FA}$ = Program Revenues + General Revenues
[c] Other financing sources and other financing uses, the sum of which equals the variable *OFSU*, are generally presented together below expenditures.

Table 1 Model of Expected Accruals in the Full Accrual Financial Statements, 2008-2013

$TotAcc_{it} = \alpha_0(1/Population_i) + \beta_1 \Delta Revs^{FA}_{it} + \beta_2 TCA_{it} + \beta_3 (Revs\text{-}Exp)^{FA}_{it} + \epsilon_{it}$ (2)

Variable	Est. Coeff.		p-val (2-tailed)
α_0	3.309	**	*0.021*
β_1	0.292	***	*<.0001*
β_2	0.029	***	*<.0001*
β_3	0.836	***	*<.0001*
Year FE	Yes		
Adj. R-sq	63.2%		
N	1,079		

*, **, *** indicate statistical significance at the 10%, 5%, and 1% levels. P-values are 2-tailed. The model is run on observations where sufficient data is available, including the lag year 2008, although the sample period for the main analyses excludes 2008. The purpose of the equation is to predict normal total accruals. The dependent variable, total accruals (*TotAcc*) is full accrual net income minus modified accrual revenues less expenditures. *ΔRevs* is the change in full accrual revenues from *t-1* to *t*. *TCA* is total depreciable capital assets. $(Revs\text{-}Exp)^{FA}$ is full accrual revenues minus full accrual expenses. The intercept, which is scaled by population, is reported in millions. Appendix A provides additional details about variable measurements.

Table 2 Descriptive Statistics, 2008–2013

Variable	N	Mean	Std. Dev.	Q1	Median	Q3
Financial Variables (Scaled by Population)						
Discretionary Accruals (*DA*)	1,079	4.002	343.673	-158.357	-32.800	108.610
Other Financing Sources/Uses (*OFSU*)	1,195	74.152	209.613	-3.518	12.976	73.182
Full Accrual Net Income (NI^{FA})	1,276	331.011	511.547	31.998	242.600	488.553
Modified Accrual Net Income (NI^{MA})	1,176	-5.162	256.781	-103.796	-13.322	53.788
BondDebt	1,327	909.76	1,063.14	241.14	564.14	1,131.30
Other Variables						
PlanIssue						
"All Cities" sample	1,146	0.218	0.413	0.000	0.000	0.000
"Issuing Cities" sample	972	0.257	0.437	0.000	0.000	1.000
Population	1,392	121,805	279,658	49,515	70,584	107,498

This table provides descriptive statistics for variables used in the main analysis. The table uses observations from 232 California municipalities with populations over 30,000 in the years 2008–2013. *N* is the number of city-year observations in the sample period for which the data are available for the variable. The remaining columns provide the mean, standard deviation, 25th (Q1), 50th (Median), and 75th (Q3) percentiles for each variable. The financial variables are scaled by Population. *Discretionary Accruals* is the measure of discretion in the full accrual financial statements and is measured using the residual of Equation (2). The mean is slightly higher than 0 because it is estimated using 2008 observations, which are not included in the descriptive statistics, and then winsorized. *Other Financing Sources/Uses* is the measure of discretion in the modified accrual financial statements. *Full Accrual Net Income* and *Modified Accrual Net Income* are the bottom lines found in the respective financial statements. *BondDebt* is the total outstanding bond debt issued by a city. *PlanIssue* is equal to 1 in the fiscal year prior to a municipal bond issue. Sequential *PlanIssue* years immediately following a *PlanIssue* year are dropped from the analysis. The "All Cities" sample includes cities for which *PlanIssue* equals 0 throughout the sample period ("nonissuers"), which are assigned *PlanIssue* = 0 each year. The "Issuing Cities" sample excludes nonissuers. *Population* is the city's 2013 population. See Appendix A for detailed variable descriptions.

Table 3 Correlations, 2008-2013

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Financial Variables (Scaled by *Population*)								
(1) Discretionary Accruals (*DA*)	1.000							
	0.000							
(2) Other Financing Sources/Uses (*OFSU*)	0.232	1.000						
	<.0001	*0.000*						
(3) Full Accrual Net Income (NI^{FA})	0.331	0.061	1.000					
	<.0001	*0.039*	*0.000*					
(4) Modified Accrual Net Income (NI^{MA})	-0.381	0.565	0.105	1.000				
	<.0001	*<.0001*	*0.000*	*0.000*				
(5) *BondDebt*	0.239	0.240	0.210	-0.037	1.000			
	<.0001	*<.0001*	*<.0001*	*0.204*	*0.000*			
Other Variables								
PlanIssue								
(6) "All Cities" sample	0.002	0.001	-0.017	-0.005	0.045	1.000		
	0.963	*0.765*	*0.590*	*0.876*	*0.137*	*0.000*		
(7) "Issuing Cities" sample	-0.030	-0.020	-0.001	0.005	0.001	1.000	1.000	
	0.406	*0.550*	*0.780*	*0.876*	*0.981*	*<.0001*	*0.000*	
(8) *Population*	0.010	0.017	-0.067	-0.001	0.053	0.151	0.026	1.000
	0.755	*0.552*	*0.017*	*0.790*	*0.054*	*<.0001*	*0.417*	*0.000*

This table provides correlation coefficients for variables used in the primary analyses, for all observations in the 2008-2013 period for which both variables are available (see the *N* column in Table 2). Spearman correlation coefficients are given for correlations between the *PlanIssue* measures and other variables. The remaining correlation coefficients are Pearson correlation coefficients. P-values are in italics. *Discretionary Accruals* is the measure of discretion in the full accrual financial statements and is measured using the residual of Equation 2. *Other Financing Sources/Uses* is the measure of discretion in the modified accrual financial statements. *Full Accrual Net Income* and *Modified Accrual Net Income* are the bottom lines found in the respective financial statements. *BondDebt* is the total outstanding bond debt issued by a city. *PlanIssue* is equal to one in the fiscal year prior to a municipal bond issue. Sequential *PlanIssue* years immediately following a *PlanIssue* year are dropped from the analysis. The "All Cities" sample includes cities for which *PlanIssue* equals zero throughout the sample period ("non-issuers"), which are assigned *PlanIssue* = 0 each year. The "Issuing Cities" sample excludes non-issuers. *Population* is the city's 2013 population. See Appendix A for detailed variable definitions.

Table 4 Discretionary Accruals in the Full Accrual Financial Statements Around Municipal Bond Issuances, 2009-2013

$DA_{it} = \alpha_0 + \beta_1 \text{Pre-DA } NI^{FA}_{it} + \beta_2 \text{PlanIssue}_{it} + \beta_3 \text{Pre-DA } NI^{FA}_{it} \times \text{PlanIssue}_{it} + \beta_4 NI^{FA}_{it-1} + \beta_5 DA_{it-1} + \beta_6 \text{BondDebt}_{it} + \epsilon_{it}$ (1a)

	All Cities *(1)*			*Issuing Cities* *(2)*		
Variable	Est. Coeff.		p-val (2-tailed)	Est. Coeff.		p-val (2-tailed)
Pre-DA NI^{FA}_{it}	-0.203	***	*0.000*	-0.170	***	*0.010*
PlanIssue_{it}	36.631		*0.226*	43.709		*0.138*
Pre-DA $NIFA_{it} \times \text{PlanIssue}_{it}$	-0.213	**	*0.012*	-0.248	***	*0.005*
$NIFA_{it-1}$	0.180	***	*<.0001*	0.168	***	*<.0001*
DA_{it-1}	0.070		*0.142*	0.064		*0.233*
BondDebt_{it}	0.057	**	*0.010*	0.057	**	*0.020*
Intercept	7.650		*0.831*	-18.330		*0.536*
Year FE	Yes			Yes		
City Cluster SE	Yes			Yes		
Adj. R-sq	27.1%			26.9%		
Observations	667			588		

*, **, *** indicate statistical significance at the 10%, 5%, and 1% levels. P-values are 2-tailed and based on standard errors clustered by city. The dependent variable is *DA*, discretionary accruals, the measure of discretion in the full accrual financial statements, measured using the residual of Equation 2. *Pre-DA* NI^{FA} is NI^{FA} - the bottom line found in the full accrual financial statements - minus discretionary accruals. *PlanIssue* equals one in the fiscal year prior to a municipal bond issue. City-year observations for which *PlanIssue* equals one that immediately follow a *PlanIssue* year are dropped from the analyses. The "All Cities" sample (column 1) contains all remaining city-year observations with sufficient data. The "Issuing Cities" sample (column 2) excludes non-issuers. *BondDebt* is the total outstanding bond debt issued by a city. *Population* is the city's 2013 population. See Appendix A for detailed variable definitions.

Table 5 Other Financing Sources and Uses in the Modified Accrual Financial Statements Around Municipal Bond Issuances, 2008-2013

$OFSU_{it} = \alpha_0 + \beta_1 \text{Pre-OFSU } NI^{MA}_{it} + \beta_2 PlanIssue_{it} + \beta_3 \text{Pre-OFSU } NI^{MA}_{it} \times PlanIssue_{it} + \beta_4 NI^{MA}_{it-1} + \beta_5 OFSU_{it-1} + \beta_6 BondDebt_{it} + \epsilon_{it}$ (1b)

	All Cities (1)			*Issuing Cities (2)*		
Variable	Est. Coeff.		p-val (2-tailed)	Est. Coeff.		p-val (2-tailed)
Pre-OFSU NI^{MA}_{it}	-0.281	***	*0.010*	-0.290	**	*0.015*
$PlanIssue_{it}$	-8.005		*0.615*	-10.968		*0.499*
Pre-OFSU $NI^{MA}_{it} \times PlanIssue_{it}$	0.109		*0.404*	0.119		*0.385*
NI^{MA}_{it-1}	0.025		*0.660*	0.025		*0.674*
$OFSU_{it-1}$	-0.027		*0.687*	-0.029		*0.673*
$BondDebt_{it}$	0.026	*	*0.076*	0.026	*	*0.088*
Intercept	61.209	**	*0.046*	66.827	**	*0.042*
Year FE	Yes			Yes		
City Cluster SE	Yes			Yes		
Adj. R-sq	10.1%			9.9%		
Observations	786			714		

*, **, *** indicate statistical significance at the 10%, 5%, and 1% levels. P-values are 2-tailed and based on standard errors clustered by city. The dependent variable is *OFSU*, other financing sources and uses, the measure of discretion in the modified accrual financial statements. *Pre-OFSU* NI^{MA} is NI^{MA} - the bottom line found in the modified accrual financial statements - minus other financing sources and uses. *PlanIssue* equals one in the fiscal year prior to a municipal bond issue. City-year observations for which *PlanIssue* equals one that immediately follow a *PlanIssue* year are dropped from the analyses. The "All Cities" sample (column 1) contains all remaining city-year observations with sufficient data. The "Issuing Cities" sample (column 2) excludes non-issuers. *BondDebt* is the total outstanding bond debt issued by a city. *Population* is the city's 2013 population. See Appendix A for detailed variable definitions.

Table 6 Discretionary Accruals around Bond Issues in Cases of Prediscretionary Deficit vs. Surplus, 2009-2013

$DA_{it} = \alpha_0 + \beta_1 \text{Pre-DA } NI^{FA}_{it} + \beta_2 \text{PlanIssue}_{it} + \beta_3 \text{Pre-DA } NI^{FA}_{it} \times \text{PlanIssue}_{it} + \beta_4 NI^{FA}_{it-1} + \beta_5 DA_{it-1} + \beta_6 \text{BondDebt}_{it} + \epsilon_{it}$ (1a)

	All Cities (1)			*Issuing Cities (2)*		
Variable	Est. Coeff.		p-val (2-tailed)	Est. Coeff.		p-val (2-tailed)
Panel A: Prediscretionary Accrual Deficit (Pre-DA $NI^{FA} < 0$)						
Pre-DA NI^{FA}_{it}	-0.742	***	*0.000*	-0.522	***	*0.004*
PlanIssue_{it}	3.780		*0.946*	-44.413		*0.336*
Pre-DA $NI^{FA}_{it} \times \text{PlanIssue}_{it}$	0.001		*0.995*	-0.220		*0.251*
NI^{FA}_{it-1}	0.177	***	*0.001*	0.169	***	*0.001*
DA_{it-1}	-0.138	***	*0.093*	-0.197	***	*0.004*
BondDebt_{it}	0.069	***	*0.005*	0.087	***	*0.000*
Intercept	-42.561		*0.400*	-41.116		*0.396*
Year FE	Yes			Yes		
City Cluster SE	Yes			Yes		
Adj. R-sq	59.7%			68.3%		
Observations	120			110		
Panel B: Prediscretionary Accrual Surplus (Pre-DA $NI^{FA} > 0$)						
Pre-DA NI^{FA}_{it}	-0.053		*0.485*	-0.000		*0.997*
PlanIssue_{it}	71.598	*	*0.091*	77.277	*	*0.070*
Pre-DA $NI^{FA}_{it} \times \text{PlanIssue}_{it}$	-0.263	**	*0.013*	-0.306	***	*0.005*
NI^{FA}_{it-1}	0.153	***	*0.003*	0.155	***	*0.009*
DA_{it-1}	0.172	***	*0.005*	0.182	**	*0.013*
BondDebt_{it}	0.023		*0.457*	0.007		*0.838*
Intercept	-75.131	*	*0.093*	-87.799	*	*0.089*
Year FE	Yes			Yes		
City Cluster SE	Yes			Yes		
Adj. R-sq	16.2%			17.4%		
Observations	547			478		

Table 6, cont. Discretionary Accruals around Bond Issues in Cases of Prediscretionary Deficit vs. Surplus, 2009-2013

Panel C: Chi-Square Test of the Difference between Coefficients in the Surplus vs. Deficit Partitions

	All Cities (1)			*Issuing Cities (2)*		
	Diff.		p-val (1-tailed)	Diff.		p-val (1-tailed)
$\beta_1^{Deficit} - \beta_1^{Surplus} < 0$	-0.689	*	*0.084*	-0.522	***	*0.004*
$\beta_3^{Deficit} - \beta_3^{Surplus} > 0$	0.262	***	*0.000*	0.086		*0.335*

This table reports the results of Equation (1a) run on partitions of the sample based on whether full accrual net income prior to the estimated discretionary component of accruals is negative (i.e., a deficit) versus positive (i.e., a surplus). In Panel A (B), sample observations have negative (positive) *Pre-DA* NI^{FA}. Panel C provides the results of Chi-squared tests of the statistical significance of the difference between the coefficients across the partitions. *, **, *** indicate statistical significance at the 10%, 5%, and 1% levels. P-values are 2-tailed (except for the directional hypotheses tests in Panel C, which are 1-tailed) and based on standard errors clustered by city. The dependent variable is *DA*, discretionary accruals, the measure of discretion in the full accrual financial statements, measured using the residual of Equation (2). *Pre-DA* NI^{FA} is NI^{FA} - the bottom line found in the full accrual financial statements - minus discretionary accruals. *PlanIssue* equals one in the fiscal year prior to a municipal bond issue. City-year observations for which *PlanIssue* equals one that immediately follow a *PlanIssue* year are dropped from the analyses. The "All Cities" sample (column 1) contains all remaining city-year observations with sufficient data. The "Issuing Cities" sample (column 2) excludes non-issuers. *BondDebt* is the total outstanding bond debt issued by a city. Population is the city's 2013 population. See Appendix A for detailed variable definitions.

Table 7 Other Financing Sources and Uses around Bond Issues in Cases of Prediscretionary Deficit vs. Surplus, 2008-2013

$OFSU_{it} = \alpha_0 + \beta_1 \text{Pre-OFSU } NI^{MA}_{it} + \beta_2 PlanIssue_{it} + \beta_3 \text{Pre-OFSU } NI^{MA}_{it} \times PlanIssue_{it} + \beta_4 NI^{MA}_{it-1} + \beta_5 OFSU_{it-1} + \beta_6 BondDebt_{it} + \epsilon_{it}$ (1b)

	All Cities (1)			*Issuing Cities (2)*		
Variable	Est. Coeff.		p-val (2-tailed)	Est. Coeff.		p-val (2-tailed)
Panel A: Pre-Other Financing Sources/Uses Deficit (Pre-DA $NI^{FA} < 0$)						
Pre-OFSU NI^{MA}_{it}	-0.586	***	*0.000*	-0.603	***	*0.000*
$PlanIssue_{it}$	20.528		*0.401*	18.535		*0.471*
Pre-OFSU $NI^{MA}_{it} \times PlanIssue_{it}$	0.315	***	*0.001*	0.332	***	*0.001*
NI^{MA}_{it-1}	0.001		*0.844*	0.010		*0.803*
$OFSU_{it-1}$	-0.029		*0.582*	-0.032		*0.552*
$BondDebt_{it}$	-0.002		*0.834*	-0.002		*0.839*
Intercept	35.423		*0.274*	35.469		*0.293*
Year FE	Yes			Yes		
City Cluster SE	Yes			Yes		
Adj. R-sq	16.0%			17.8%		
Observations	543			503		
Panel B: Pre-Other Financing Sources/Uses Surplus (Pre-DA $NI^{FA} > 0$)						
Pre-OFSU NI^{MA}_{it}	-0.026		*0.762*	-0.031		*0.749*
$PlanIssue_{it}$	21.007		*0.550*	14.442		*0.706*
Pre-OFSU $NI^{MA}_{it} \times PlanIssue_{it}$	-0.352		*0.193*	-0.342		*0.239*
NI^{MA}_{it-1}	0.074		*0.223*	0.065		*0.348*
$OFSU_{it-1}$	-0.008		*0.926*	-0.006		*0.967*
$BondDebt_{it}$	0.057	***	*0.000*	0.056	***	*0.000*
Intercept	37.199		*0.524*	54.803		*0.270*
Year FE	Yes			Yes		
City Cluster SE	Yes			Yes		
Adj. R-sq	12.3%			12.5%		
Observations	243			211		

Table 7, cont. Other Financing Sources and Uses around Bond Issues in Cases of Prediscretionary Deficit vs. Surplus, 2009-2013

Panel C: Chi-Square Test of the Difference between Coefficients in the Surplus vs. Deficit Partitions

	All Cities (1)			*Issuing Cities (2)*		
	Diff.		p-val (1-tailed)	Diff.		p-val (1-tailed)
$\beta_1^{Deficit} - \beta_1^{Surplus} < 0$	-0.612	***	*0.000*	-0.572	***	*0.001*
$\beta_3^{Deficit} - \beta_3^{Surplus} > 0$	0.667	**	*0.033*	0.674	***	*0.033*

Table 7 reports the results of Equation (1b) run on partitions of the sample based on whether modified accrual net income prior to other financing sources and uses is negative (i.e., a deficit) versus positive (i.e., a surplus). In Panel A (B), sample observations have negative (positive) *Pre-OFSU* NI^{MA}. Panel C provides the results of Chi-squared tests of the statistical significance of the difference between the coefficients across the partitions. *, **, *** indicate statistical significance at the 10%, 5%, and 1% levels. P-values are 2-tailed (except for the directional hypotheses tests in Panel C, which are 1-tailed) and based on standard errors clustered by city. The dependent variable is *OFSU*, other financing sources and uses, the measure of discretion in the modified accrual financial statements. *Pre-OFSU* NI^{MA} is NI^{MA} - the bottom line found in the modified accrual financial statements - minus other financing sources and uses. *PlanIssue* equals one in the fiscal year prior to a municipal bond issue. City-year observations for which *PlanIssue* equals one that immediately follow a *PlanIssue* year are dropped from the analyses. The "All Cities" sample (column 1) contains all remaining city-year observations with sufficient data. The "Issuing Cities" sample (column 2) excludes non-issuers. *BondDebt* is the total outstanding bond debt issued by a city. *Population* is the city's 2013 population. See Appendix A for detailed variable definitions.

Table 8 Determinants of Discretion in the Full Accrual and Modified Accrual Financial Statements

$absDA_{it} = \alpha_0 + \beta_1 Unions_i + \beta_2 MedInc_i + \beta_3 StrongMayor_i + \beta_4 AuditCount_i + \beta_5 BondDebt_{it} + \beta_6 Pre\text{-}DA\ NI^{FA}_{it} + \beta_7 DA_{it-1} + \epsilon_{it}$

$absOFSU_{it} = \alpha i + \beta_1 Unions_i + \beta_2 MedInc_i + \beta_3 StrongMayor_i + \beta_4 AuditCount_i + \beta_5 BondDebt_{it} + \beta_6 Pre\text{-}OFSU\ NI^{MA}_{it} + \beta_7 OFSU_{it-1} + \epsilon_{it}$

	Discretionary Accruals (1) (2009-2013)			*Other Financing Sources and Uses (2) (2008-2013)*		
Variable	Est. Coeff.		p-val (2-tailed)	Est. Coeff.		p-val (2-tailed)
$Unions_i$	-0.46		*0.600*	1.18	**	*0.022*
$MedInc_i$	0.00	***	*0.005*	0.00	**	*0.025*
$StrongMayor_i$	-64.82	*	*0.059*	3.31		*0.848*
$AuditCount_i$	0.19		*0.233*	-0.04		*0.673*
$BondDebt_{it}$	0.07	***	*<.0001*	0.03	***	*<.0001*
Pre-DA NI^{FA}_{it}	-0.03		*0.556*			
DA_{it-1}	0.04		*0.232*			
Pre-OFSU NI^{MA}_{it}				-0.22	***	*0.001*
$OFSU_{it-1}$				0.05		*0.332*
Intercept	36.69		*0.580*	-25.16		*0.630*
Year FE	Yes			Yes		
City Cluster SE	Yes			Yes		
Adj. R-sq	17.8%			15.3%		
Observations	812			953		

This table reports the results - coefficient estimates and p-values - of equations that investigate possible governance- and monitoring-related determinants of discretion in the full and modified accrual financial statements. All city-year observations from the 2008-2013 sample period with sufficient data are included in the sample. The dependent variable in column 1 (2) is absolute DA (OFSU), discretionary accruals (other financing sources and uses), the measure of discretion in the full (modified) accrual financial statements. *(**,***) denotes significance at the .01 (.05, .10) level. *Unions* is the percent of public employees that are union members in the metropolitan statistical area as of 2010. *MedInc* is median income per capita in 2013. *StrongMayor* is equal to one if the municipality operates under the mayor-council form of government. *AuditCount* is equal to the number of audits performed by the municipality's auditor in the sample. *BondDebt* is the total outstanding bond debt issued by a city. The model also controls for prediscretionary income (*Pre-DA* NI^{FA} and *Pre-OFSU* NI^{MA}) and discretion in the previous year (lagged DA and OFSU).

Table 9 Alternative Specifications for Measuring Discretionary Accruals

$TotAcc_{it} = \alpha_0(1/Population_i[\text{or } Assets_{it-1}]) + \beta_1\Delta Revs^{FA}_{it} + \beta_2 TCA_{it} + \beta_3(Revs\text{-}Exp)^{FA}_{it} + \epsilon^{it}$ (2)

$TotAcc_{it} = \alpha_0(1/Population_i[\text{or } Assets_{it-1}]) + \beta_1(\Delta Revs\text{-}\Delta Taxes\ Receivable)^{FA}_{it} + \beta_2 TCA_{it} + \beta_3(Revs\text{-}Exp)^{FA}_{it} + \epsilon_{it}$ (derived from the modified Jones Model [Dechow, et al. 1995])

	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*
Scalar:	*$Population_i$*	*$Assets_{it-1}$*	*$Population_i$*	*$Assets_{it-1}$*	*$Population_i$*	*$Assets_{it-1}$*	*$Population_i$*	*$Assets_{it-1}$*
Total Accruals (*TotAcc*) Measure:	*NI^{FA} - $(Revs\text{-}Exp)^{MA}$*		*NI^{FA} - CFFO*		*NI^{FA} - $(Revs\text{-}Exp)^{MA}$*		*NI^{FA} - CFFO*	
Model used to obtain *DA*:	*Equation (2)*		*Equation (2)*		*Modified Jones*		*Modified Jones*	
Panel A: Goodness-of-Fit of First Stage Equations for Expected Accruals (Equation [2] or modified Jones'), 2008-2013								
Adj. R-sq	63.3%	61.5%	18.8%	17.1%	62.9%	59.4%	18.8%	7.6%
Observations	1,079	1,030	1,007	1,004	1,032	998	1,007	1,004
Panel B: Selected results of Equation (1a) run on "All Issuers" sample using alternative scalars and specifications of DA, 2009-2013								
$DA_{it} = \alpha_0 + \beta_1 \text{Pre-DA } NI^{FA}_{it} + \beta_2 PlanIssue_{it} + \beta_3 \text{Pre-DA } NI^{FA}_{it} \times PlanIssue_{it} + \beta_4 NI^{FA}_{it-1} + \beta_5 DA_{it-1} + \beta_6 BondDebt_{it} + \epsilon_{it}$ (1a)								
Variable	Est. Coeff.	Est. Coeff.	Est. Coeff.	Est. Coeff.	Est. Coeff.	Est. Coeff.	Est. Coeff.	Est. Coeff.
Pre-DA NI^{FA}_{it}	-0.170 ***	-0.328 ***	-0.362 ***	-0.653 ***	-0.178 ***	-0.253 ***	-0.385 ***	-0.417 ***
$PlanIssue_{it}$	43.709	0.016	40.385	0.008	48.011	0.000	43.405	0.012
Pre-DA $NI^{FA}_{it} \times PlanIssue_{it}$	-0.248 ***	-0.361 *	-0.270 **	-0.291 ***	-0.250 ***	-0.072	-0.254 **	-0.293 **
Adj. R-sq	26.9%	44.8%	36.4%	78.9%	26.3%	24.2%	36.1%	40.9%
Observations	588	588	536	534	562	540	517	507

*, **, *** indicate statistical significance at the 10%, 5%, and 1% levels, using 2-tailed tests based on standard errors clustered by city. Panel A shows the R-squared of Equation (2), and the number of observations on which Equation (2) is run. Panel B shows the results of Equation (1a), which predicts discretionary accruals as measured using the residual of the equation used in the corresponding column of Panel A. *Pre-DA* NI^{FA} is NI^{FA} - the bottom line found in the full accrual financial statements - minus discretionary accruals. *PlanIssue* equals one in the fiscal year prior to a municipal bond issue. The other controls used in the main analyses are also included, but untabulated for brevity. Equation (1a) is run on the "Issuing Cities" sample, which excludes non-issuers, but results are consistent when using the sample of all issuers. In each panel, the even (odd) columns use the city's 2013 population (lagged total assets from the full accrual financial statements) as a scalar for all variables where population is used as a scalar in the main analyses. In Columns 1,2,5, and 6 (3,4,7 and 8) total accruals (*TotAcc*) are calculated as full accrual net income minus modified accrual revenues less expenditures (full accrual net income minus cash flows from operations calculated using the indirect method). In columns 5-8, changes in taxes receivable from *t* to *t-1* are subtracted from $\Delta Revs^{FA}$ to assimilate the modified Jones model from Dechow, et al. (1995).