

WHAT IS THE INTERPLAY BETWEEN AUDITING AND REGULATORY
INVESTIGATIONS? EVIDENCE FROM THE MUNICIPAL BOND MARKET

BY

BETHANY BRUMLEY

DISSERTATION

Submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy in Accountancy
in the Graduate College of the
University of Illinois Urbana-Champaign, 2022

Urbana, Illinois

Doctoral Committee:

Associate Professor Anne Thompson, Chair
Professor Heitor Almeida
Professor Theodore Sougiannis
Associate Professor Oktay Urcan

ABSTRACT

I examine how auditing and regulatory investigations impact compliance with disclosure regulation and the cost of debt. I examine these questions in the municipal bond market because widespread noncompliance led the SEC to initiate an enforcement program and Louisiana to pass a state law requiring auditors to test compliance with disclosure regulation. I find that municipal bond issuers increase disclosure frequency by 32 percent following regulatory investigations without auditing and incrementally increase disclosure frequency by 59 percent following regulatory investigations with auditing, suggesting that they are complementary enforcement mechanisms. The cost of debt for new bond issues decreases by 11 basis points following regulatory investigations with auditing but does not change following regulatory investigations without auditing, suggesting that auditing decreases investors' perception of default risk. Overall, my findings inform policy makers and regulators on the role of auditing over compliance with disclosure regulation as a mechanism to protect investors.

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION	1
CHAPTER 2: BACKGROUND AND RELATED LITERATURE	6
CHAPTER 3: HYPOTHESIS DEVELOPMENT	9
CHAPTER 4: RESEARCH DESIGN.....	15
CHAPTER 5: SAMPLE AND DESCRIPTIVE STATISTICS	20
CHAPTER 6: RESULTS	22
CHAPTER 7: CONCLUSION	31
TABLES	33
REFERENCES	42
APPENDIX: VARIABLE DEFINITIONS.....	47

CHAPTER 1: INTRODUCTION

Enforcement of disclosure regulation is “crucial to the protection of investors and the economic growth of our country” (Aguilar 2012, par. 43). Disclosure regulation can be enforced by regulators, auditors, the legal system, or other parties. However, there is little research on interactions among these enforcement mechanisms due to inherent limitations in most research settings (Leuz and Wysocki 2016). Specifically, disclosure changes are often bundled with one or more enforcement changes, making it difficult for researchers to disentangle the individual effects of the bundle. It is also difficult for researchers to find settings with shocks to multiple enforcement mechanisms. In this study, I exploit two enforcement shocks in the municipal bond market to study how the interaction between regulatory investigations and auditing affects disclosure compliance and whether these enforcement shocks affect the cost of debt.

U.S. Securities and Exchange Commission (SEC) Rule 15c2-12 under the Securities Exchange Act of 1934 requires municipal bond issuers to provide financial and operating disclosures (called “continuing disclosures”) to investors over the life of the bonds to help investors assess the issuer’s ability to repay the bonds.¹ However, Rule 15c2-12 was created without an enforcement mechanism, leading issuers to perceive the disclosures as “technically voluntary” (Rhodes 2015, p.2001). On March 10, 2014, the SEC announced the Municipalities Continuing Disclosure Cooperation Initiative (hereafter “MCDC”), offering all issuers and underwriters the opportunity to self-report noncompliance voluntarily in exchange for favorable settlement terms (SEC 2014).² On the same day, Louisiana introduced Act 463 to enact R.S.

¹ Rule 15c2-12 does not apply to corporate bond issuers.

² For issuers, the settlement terms included establishing policies and procedures over compliance with continuing disclosures within 180 days, providing a certificate of compliance within one year, and disclosing the settlement terms in official statements for the next five years. For underwriters, the settlement terms included hiring a consultant to conduct a compliance review and provide recommendations within 180 days, providing a certificate of compliance within one year, and paying monetary penalties up to \$500,000.

39:1438. Effective August 1, 2014, Act 463 requires auditors to test for compliance with Rule 15c2-12 as part of the municipal bond issuer's annual financial statement audit (hereafter "audit law"). Both enforcement mechanisms were intended to compel noncompliant issuers to fulfill their continuing disclosure obligations.

Economic theory suggests that voluntary cooperation programs can be an effective enforcement mechanism (Kaplow and Shavell 1994). These programs use leniency practices to provide economic incentives for firms to self-report violations of securities laws. For this reason, I expect the MCDC to improve disclosure compliance with Rule 15c2-12. Auditing can also be an effective enforcement mechanism because auditors perform robust testing to assess compliance with disclosure regulations. However, it is unclear whether the audit law *incrementally* improves disclosure compliance in the presence of the MCDC. The presence of two similar mechanisms can result in one or both parties relaxing their work performance due to reliance on the other party's work (Bell, Marrs, Solomon, and Thomas 1997; Sterman 2000; Hecht 2004). Thus, it is possible that auditing does not incrementally improve disclosure compliance in the presence of the MCDC.

I measure disclosure compliance using the frequency of financial and operating disclosures that issuers submit to the Electronic Municipal Market Access (EMMA) system after the bond offering.³ I test the impact of the MCDC and the audit law on the frequency of continuing disclosures using a difference-in-difference-in-differences research design. The impact of the MCDC is measured by comparing noncompliant issuers outside of Louisiana after the MCDC to compliant issuers outside of Louisiana before the MCDC. I find that noncompliant issuers file 31.9 percent more continuing disclosures after the MCDC. The incremental impact of

³ The Municipal Securities Rulemaking Board (MSRB) established EMMA in 2009 to create a single online repository for the public to access bond official statements and continuing disclosures.

the audit law is measured by comparing noncompliant issuers in Louisiana to noncompliant issuers outside of Louisiana. I find that noncompliant issuers in Louisiana file 59.2 percent *incrementally* more continuing disclosures after the audit law, suggesting that auditing provides an improvement in disclosure compliance. Overall, my results suggest that regulatory investigations and auditing are complementary mechanisms that increase compliance with disclosure regulation.

I then examine the impact of both enforcement mechanisms on the cost of debt. Economic theory suggests that higher disclosure quality lowers the cost of debt by reducing information asymmetry between managers and stakeholders (Core 2001; Healy and Palepu 2001; Leuz and Wysocki 2016). Theory also suggests that auditing can reduce the cost of debt by signaling to market participants that the credibility of audited information is higher than unaudited information (Wallace 1980; Wallace 2004). However, these theories may not apply to this setting because prior research on the municipal bond market documents little evidence that investors react to continuing disclosures (Ingram, Raman, and Wilson 1989; Ingram and Wilson 1999; Reck, Wilson, Gotlob, and Lawrence 2004; Reck and Wilson 2006). This market consists of many retail investors that rely heavily on credit ratings and may not use continuing disclosures (Cornaggia, Cornaggia, and Israelsen 2018; Cornaggia, Hund, and Nguyen 2020).

I measure the cost of debt using the bond yield to maturity for new bond issues. Using a difference-in-difference-in-differences research design, I find no effect of the MCDC on the cost of new debt for noncompliant issuers outside of Louisiana before the MCDC relative to compliant issuers outside of Louisiana after the MCDC. When I test the incremental impact of the audit law on bond yields, I find that the cost of debt decreases by 11 basis points for noncompliant issuers in Louisiana after the audit law. In an alternative specification, I measure

the cost of debt using the difference between bond yields and average weekly market yields. Again, I find no effect for the MCDC and find that the cost of debt decreases by 11 basis points after the audit law. Overall, my results suggest that auditing decreases investors' perception of default risk for issuers in Louisiana.

In cross-sectional analysis, I partition the sample between low and high-risk bonds using credit ratings, general obligation bonds, and bond insurance as risk measures. Low-risk bond issuers were *less* likely to provide continuing disclosures in the pre-enforcement period because investor demand for information is low when risk is low (Cuny 2016; Cheng, Cuny, and Xue 2019; Gillette, Samuels, and Zhou 2020). I find that issuers of both low and high-risk bonds are *more* likely to increase continuing disclosure filing frequency following the MCDC and audit law, which supports the SEC's concern of widespread noncompliance prior to enforcement. I also find a decrease in the cost of debt for both low and high-risk bond issuers subject to the audit law in Louisiana. Taken together, my results suggest that auditing decreases investors' perception of default risk for both low and high-risk municipal bonds.

My study contributes to the academic literature in three main ways. First, it contributes to the literature on disclosure and financial reporting regulation. Since enforcement mechanisms do not operate in isolation, Leuz and Wysocki (2016) call for research on interactions between various mechanisms to understand these relationships. They also specifically identify the need for research on the enforcement role of auditing. My study answers this call for research by providing evidence that auditing improves disclosure compliance incremental to regulatory investigations. Given the variety of mechanisms available for enforcement, my findings should be relevant to policy makers, federal regulators, and state regulators as they continually evaluate the most appropriate mechanisms for enforcing disclosure regulation in the capital markets.

Second, these findings contribute to the literature on the value of auditing. Prior research focuses on how voluntary audits add value because mandatory audit requirements limit researchers' ability to make these comparisons for public companies (e.g., Blackwell, Noland, and Winters 1998; Minnis 2011; Lennox and Pittman 2011; Kim, Simunic, Stein, and Yi 2011). My study adds to this literature by documenting that mandatory auditing over compliance with securities regulation adds value in the capital markets through higher disclosure compliance and lower cost of debt. Investors have expressed concern that auditing standards related to noncompliance with laws and regulations are not strong enough to protect them (PCAOB 2017).⁴ Thus, my findings provide evidence to regulators on how auditing can strengthen investor protection beyond traditional financial statement auditing.

Finally, this study contributes to the literature on continuing disclosure in the municipal bond market (Cuny 2016; Cheng et al. 2019; Gillette et al. 2020; Abbas and Johnson 2022). I provide insight on how the determinants of disclosure compliance documented in prior research have shifted due to the introduction of regulatory investigations and auditing. I also provide novel evidence about whether and how investors use continuing disclosures following enforcement. Although prior research suggests that investors may not use continuing disclosures (Ingram et al. 1989; Ingram and Wilson 1999; Reck et al. 2004; Reck and Wilson 2006), my finding that the cost of debt decreases following auditing provides some support for the SEC's conclusion that continuing disclosures provide important information to investors (SEC 1994). My findings should be useful to the SEC as it continues to enhance disclosure requirements under Rule 15c2-12, investors in the municipal bond market, and municipal bond issuers interested in lowering their cost of debt.

⁴ Noncompliance with laws and regulations includes matters such as violations of securities laws, environmental laws, or contractual agreements.

CHAPTER 2: BACKGROUND AND RELATED LITERATURE

2.1 BACKGROUND ON SEC RULE 15c2-12

State and local governments use the \$3.9 trillion municipal securities market to finance two-thirds of the infrastructure projects in the U.S. (MSRB 2020). These projects include roads, bridges, schools, hospitals, airports, and public utilities. The SEC has limited authority to regulate financial disclosures in this market because municipal securities are exempt from most registration and reporting requirements under the Securities Act of 1933 and the Securities Exchange Act of 1934. As a result, issuers of municipal securities are not required to file annual and quarterly reports to the SEC. However, municipal securities are not exempt from the antifraud provisions under the 1933 and 1934 Acts.⁵

Following a series of high-profile bond defaults, the SEC used its limited authority to adopt SEC Rule 15c2-12 in 1989 to regulate disclosure in the primary municipal bond market.⁶ Rule 15c2-12 was adopted to address fraud by “establishing standards for obtaining, reviewing, and disseminating information about municipal securities” (SEC 2018, p. 7-8). Paragraphs (a) and (b)(1) through (4) of Rule 15c2-12 require underwriters to review a copy of the issuer’s official statement to form a “reasonable basis” for recommending the securities and to provide a copy of the official statement to investors.⁷ To satisfy the reasonable basis standard, underwriters verify the accuracy and completeness of key representations made in the official statement. Underwriters must perform this review before buying securities from an issuer and selling them to investors. Failure to do so can result in violation of the antifraud provisions.

⁵ The antifraud provisions under Rule 17(a) of the 1933 Act apply to the primary market and the provisions under Rule 17(b) of the 1934 Act apply to the secondary market.

⁶ Both issuers and underwriters are subject to the antifraud provisions. However, the requirements set forth in Rule 15c2-12 apply directly to underwriters. The SEC uses its regulatory authority over underwriters to indirectly regulate issuers.

⁷ The official statement is the document used to sell the bonds to the public. It includes detailed information about the issuer and bond terms so that potential investors can decide whether to buy the bonds.

In 1994, the SEC amended Rule 15c2-12 to regulate disclosure in the secondary municipal bond market. The SEC adopted paragraph (b)(5) of Rule 15c2-12 to require continuing disclosure of financial and operating information over the life of the bonds to help investors assess the issuer's ability to repay the bonds. Underwriters must confirm that the official statement includes a continuing disclosure agreement, whereby issuers agree to submit continuing disclosures to a publicly available repository.⁸ Continuing disclosures include (1) annual financial and operating data, (2) notices of material events that can impact repayment of bonds (e.g., defaults, payment delinquencies, rating changes) within 10 days of the event, and (3) notices of failure to file disclosures in a timely manner.⁹ The official statement must also disclose any material noncompliance with prior continuing disclosure agreements over the past five years. However, there were concerns of widespread noncompliance with paragraph (b)(5) of Rule 15c2-12 due to a lack of enforcement (SEC 2012).

2.2 RELATED LITERATURE ON CONTINUING DISCLOSURES

Most prior research on continuing disclosure compliance examines factors that influence issuer incentives to file continuing disclosures under the “technically voluntary” regime before enforcement (Rhodes 2015, p.2001). Gillette et al. (2020) find that issuers with credit rating upgrades are more likely to decrease continuing disclosure filings, suggesting that investor demand for information is lower when credit ratings are higher. Cheng et al. (2019) find that issuers with lower versus higher credit rating upgrades are more likely to increase continuing disclosure filings, suggesting that competition for capital improves disclosure compliance. Cuny

⁸ Rule 15c2-12 does not apply to (1) bonds with aggregate principal amounts less than \$1 million, (2) bonds that mature in nine months or less and are sold in denominations of \$100,000 or more, and (3) bonds sold to 35 or fewer investors in denominations of \$100,000 or more.

⁹ The SEC adopted amendments to Rule 15c2-12 in 2010 and 2018 to expand the listing of material events that require disclosure. Currently, there are 16 events that require disclosure under Rule 15c2-12.

(2016) also finds that several events can alter the cost-benefit tradeoff of disclosure (bond insurance, negative economic or fiscal outcome, introduction of EMMA). As discussed in Section 6.7, prior research on continuing disclosure compliance after enforcement is sparse and the evidence is mixed.

Prior research on the cost of debt examines whether investors in the secondary municipal bond market react when issuers file continuing disclosures. These studies use samples before enforcement. Ingram et al. (1989) find that investors react to new bond issues and credit rating announcements. However, they also find that investors do not react when issuers file annual reports. Similarly, Reck et al. (2004) and Reck and Wilson (2006) find that investors do not react to the filing of annual reports or material event notices under Rule 15c2-12. Cuny (2018) uses the introduction of EMMA to provide evidence that access to information improves the bargaining power of small retail investors by reducing the amount they pay for bonds relative to large institutional investors. To my knowledge, my study is the first to examine whether investors in the primary municipal bond market react when issuers file continuing disclosures before or after enforcement.

CHAPTER 3: HYPOTHESIS DEVELOPMENT

3.1 DISCLOSURE COMPLIANCE

To address concerns of widespread noncompliance with continuing disclosure obligations, the SEC announced the MCDC initiative on March 10, 2014. The initiative asked issuers and underwriters to self-report materially false statements or omissions in official statements regarding compliance with prior continuing disclosure agreements (SEC 2014). The SEC focused on disclosures in official statements instead of EMMA because its authority to regulate municipal issuers under the antifraud provisions is primarily limited to official statements. The antifraud provisions prohibit issuers from including material misstatements or omissions in official statements about compliance with prior continuing disclosure agreements. The SEC investigated the voluntary reports submitted by issuers and underwriters and offered favorable settlement terms in exchange for self-reporting.¹⁰ Only the settlement terms for underwriters included monetary penalties. The deadline for self-reporting was September 10, 2014 for underwriters and December 1, 2014 for issuers.¹¹

On the one hand, the MCDC may provide strong incentives for issuers to submit continuing disclosure filings in EMMA after the announcement date. Economic theory suggests that voluntary reporting programs can be an effective enforcement mechanism because they provide economic incentives to comply with disclosure regulations (Kaplow and Shavell 1994). In 2001, the SEC established the first leniency program and outlined a general framework for cooperation in the Seaboard Report. However, Files (2012) finds that cooperation with the SEC

¹⁰ The SEC investigated the self-reports on a case-by-case basis to determine which issuers and underwriters to bring charges against. Those issuers and underwriters were charged with SEC enforcement actions under the MCDC and subject to the settlement terms.

¹¹ The initial reporting deadline for both issuers and underwriters was September 10, 2014. The deadline for issuers was extended to December 1, 2014.

after a restatement increases the likelihood of a SEC enforcement action, suggesting that the leniency program made firms worse off. In 2010, the SEC revised its leniency practices and established a formal cooperation program to encourage self-reporting. Leone, Li, and Liu (2021) find that cooperating firms under the new program have a lower likelihood of enforcement actions and fines, suggesting that the SEC corrected the flaws in its earlier program. Files, Martin, and Rasmussen (2019) also find that self-reporting is associated with lower fines.

On the other hand, the MCDC may provide weak incentives for issuers to submit continuing disclosure filings in EMMA after the announcement date. The SEC is “resource constrained” and must make difficult decisions every day about “which matters to pursue, which matters to stop pursuing, and which matters to forego pursuing at all” (Thomsen 2009, par.27). The MCDC enabled the SEC to compare the self-reports filed by issuers and underwriters to “catch” issuers that failed to self-report. The SEC indicated that it would impose more severe penalties on noncompliant issuers that failed to self-report by the deadline. However, given the resource constraints at the SEC, noncompliant issuers may wait for the SEC to “catch” them instead of self-reporting. Furthermore, the SEC rarely imposes monetary penalties on municipalities because taxpayers bear the burden of paying those penalties.

Since weak incentives can be sufficient to improve disclosure compliance for at least some issuers, I predict that the MCDC increases continuing disclosure filing frequency.

Therefore, I pose the following directional hypothesis:

H1: Continuing disclosure filing frequency increases following the MCDC for noncompliant versus compliant issuers.

State legislatures can pass laws requiring municipal bond issuers in their state to comply with continuing disclosure obligations. To my knowledge, Louisiana is the only state that has enacted a law to enforce compliance with continuing disclosure obligations. The law includes

both recordkeeping and audit requirements. Issuers must maintain a listing of all outstanding continuing disclosure agreements and a current listing of credit ratings to facilitate filing material event notices for rating changes under Rule 15c2-12. The issuer's financial statement auditor must inspect the issuer's documentation to test compliance with recordkeeping requirements and select a sample of the issuer's continuing disclosure filings in EMMA to test compliance with its continuing disclosure agreements. This testing is performed in conjunction with the issuer's annual financial statement audit. The law was introduced on the same day that the MCDC was announced and became effective on August 1, 2014.

In the absence of the MCDC, the audit law may help issuers submit continuing disclosure filings in EMMA after the announcement date. Auditing can be an effective enforcement mechanism because auditors perform rigorous testing to assess compliance with disclosure regulations. Kinney and Martin (1994) and Grein and Tate (2011) find that auditing improves the quality of financial statements because auditors identify and require correction of material audit adjustments. Minnis (2011) finds that earnings are better predictors of future cash flows when financial statements are audited. However, the benefits of auditing are not limited to financial statements. McConomy (1998) and Clarkson (2000) find that auditing improves the quality of management earnings forecasts by decreasing management bias and increasing accuracy. Saito and McIntosh (2010) also find that auditing decreases the inefficient allocation of taxpayer dollars in public school systems.

In the presence of the MCDC, it is unclear if the audit law *incrementally* increases the frequency of continuing disclosure filings in EMMA. Behavioral theory suggests that the presence of two similar mechanisms in a system structure can have unintended consequences (Bell et al. 1997; Sterman 2000; Hecht 2004). When two similar mechanisms exist, one or both

parties may reduce their perception of risk due to the other party's work. This lower perception of risk can lead to relaxed work performance by one or both parties. Although few papers examine the interaction between auditors and their clients' regulators, the banking industry provides some insight. Ghosh, Jarva, and Ryan (2020) find that auditors' work effort is lower in audits of banking clients relative to nonbanking clients due to the presence of bank regulators. Gopalan, Imdieke, Schroeder, and Stuber (2020) also find that bank regulators' work effort is lower when auditors perform internal control audits relative to when they do not.

For these reasons, it is unclear whether the audit law incrementally improves continuing disclosure filing frequency for issuers in Louisiana. Therefore, I pose the following hypothesis in the null form:

H2: Continuing disclosure filing frequency does not incrementally change following the audit law for noncompliant issuers in Louisiana versus noncompliant issuers in all other states.

3.2 COST OF DEBT

Economic theory suggests that higher disclosure quality lowers the cost of debt by reducing information asymmetry between managers and stakeholders (Core 2001; Healy and Palepu 2001; Leuz and Wysocki 2016). Low disclosure quality can increase investor uncertainty about the value of bonds (i.e., default risk) and cause investors to avoid buying a bond or charge a higher risk premium, whereas high disclosure quality can attract investors and decrease an issuer's cost of debt. For instance, Sengupta (1998) finds that corporate bondholders consider the quality of a firm's disclosures when determining the risk premium to charge. Baber and Gore (2008) find that restatements of prior financial statements increase the cost of debt on municipal bond issues. Baber, Gore, Rich, and Zhang (2013) find that municipalities in states that mandate

the use of governmental GAAP have a lower cost of debt on bond issues.¹² Cuny and Dube (2019) also find that mandated GAAP reporting has a moderating effect on the cost of municipal debt when there is a negative economic change in the local economy. If higher continuing disclosure filing frequency in EMMA improves the overall quality of disclosure, then the MCDC and audit law may reduce investor uncertainty about default risk and lower the cost of debt.

Signaling theory suggests another channel through which auditing can lower the cost of debt (Wallace 1980; Wallace 2004). When audits are voluntary, the choice to be audited can send a signal to market participants that the firm is lower risk. Several studies provide evidence that firms with audited financial statements receive lower interest rates on loans relative to firms with unaudited financial statements (Blackwell et al. 1998; Minnis 2011; Kim et al. 2011). However, Allee and Yohn (2009) and Cassar, Ittner, and Cavalluzzo (2015) do not find that auditing is associated with lower loan rates. Lennox and Pittman (2011) examine the signaling value of audits after the removal of a mandatory audit requirement for U.K. private companies. They find that companies that choose a voluntary audit receive credit rating upgrades and companies that are no longer audited receive downgrades. Similarly, Balakrishnan, De George, Ertan, and Scobie (2021) find that sharing audit information with bank regulators reduces the riskiness of bank clients. Thus, the audit law may lower the cost of debt by sending a positive signal to investors that issuers in Louisiana are lower risk.

However, it is unclear whether these theories will generalize to this setting because prior research provides evidence that investors do not react to continuing disclosures (Ingram et al. 1989; Ingram and Wilson 1999; Reck et al. 2004; Reck and Wilson 2006). Ingram and Wilson (1999) provide two possible reasons for the lack of investor reaction. One reason is that the

¹² The Governmental Accounting Standards Board (GASB) establishes GAAP for state and local governments, whereas the Financial Accounting Standards Board (FASB) establishes GAAP for public companies.

availability of information is low. Given the voluntary nature of continuing disclosures, investors are unable to rely on them as a source of recurring information. The other reason is that investor incentives to search for and incorporate available information into buying decisions is low. Prior research suggests that retail investors in the municipal bond market rely heavily on credit ratings to assess the value of bonds (Cornaggia et al. 2018; Cornaggia et al. 2020). Market participants have also noted that “although issuers disclose financial information in various disclosure documents available to investors, ... investors nonetheless rely on municipal credit ratings” (SEC 2012, p.52).

In short, it is unclear whether and how investors will react following the MCDC and audit law. Therefore, I pose the following hypotheses in the null form:

- H3:** The cost of debt does not change following the MCDC for noncompliant issuers versus compliant issuers.
- H4:** The cost of debt does not incrementally change following the audit law for noncompliant issuers in Louisiana versus noncompliant issuers in all other states.

CHAPTER 4: RESEARCH DESIGN

4.1 DISCLOSURE COMPLIANCE

To test whether the MCDC and audit law improve compliance with continuing disclosure obligations (H1 and H2), I use the following difference-in-difference-in-differences design:¹³

$$\begin{aligned} Filing_Freq_{i,t} = & \alpha_i + \beta_1 Noncomply_i + \beta_2 MCDC_t + \beta_3 Audit_i + \beta_4 Noncomply_i \times MCDC_t \\ & + \beta_5 Noncomply_i \times Audit_i + \beta_6 MCDC_t \times Audit_i + \beta_7 Noncomply_i \times MCDC_t \times Audit_i \\ & + Controls + Fixed\ Effects + \varepsilon_{i,t}, \end{aligned} \quad (1)$$

where *Filing_Freq* is the total number of financial and operating disclosures that an issuer submits to EMMA during a reporting period. Rule 15c2-12 requires issuers to file financial and operating disclosures in each reporting period. Although Rule 15c2-12 also requires issuers to file material event notices, I do not include material event notices in the measure of filing frequency because they are filed on an ad hoc basis such that changes in filing frequency could be attributable to noncompliance and/or variation in the rates at which these events occur. In addition, I cannot determine when the material events specified in Rule 15c2-12 occur in order to assess whether the absence of filings is due to noncompliance or lack of events. A reporting period is defined as March 10 through March 9 to align with the announcement date of the enforcement shocks.

Noncomply is an indicator variable equal to one for issuers that failed to file annual continuing disclosures in EMMA for at least one reporting period prior to the enforcement shocks (i.e., noncompliant issuers) and zero for all other issuers (i.e., compliant issuers). The coefficient for *Noncomply* measures the filing frequency for noncompliant issuers in non-Louisiana states before the MCDC. *MCDC* is an indicator variable equal to one for reporting

¹³ I use an ordinary least squares regression consistent with Cuny (2016). However, my main results are robust to using a Poisson regression for count data.

periods where issuers are subject to regulatory investigations (i.e., March 10, 2014 to March 9, 2017) and zero for all other reporting periods. The coefficient for *MCDC* measures the filing frequency for compliant issuers in non-Louisiana states after the MCDC. *Audit* is an indicator variable equal to one for issuers in Louisiana and zero for issuers in all other states. The coefficient for *Audit* measures the filing frequency for compliant issuers in Louisiana before the enforcement shocks. I use the same date to measure the post-enforcement period for the MCDC and audit law because they were both announced on March 10, 2014. Although the audit law was not effective until August 1, 2014, noncompliant issuers had incentives to submit missing filings to EMMA before this date to avoid an audit finding.

The parameter of interest for H1 is β_4 , the coefficient for *Noncomply* \times *MCDC*, and measures the change in continuing disclosure filing frequency for noncompliant issuers in non-Louisiana states after the MCDC relative to compliant issuers in non-Louisiana states before the MCDC. *Noncomply* \times *Audit* measures the change in continuing disclosure filing frequency for noncompliant issuers in Louisiana before the MCDC relative to compliant issuers in non-Louisiana states before the MCDC. *MCDC* \times *Audit* measures the change in filing frequency for compliant issuers in Louisiana after the MCDC relative to compliant issuers in non-Louisiana states before the MCDC. The parameter of interest for H2 is β_7 , the coefficient for *Noncomply* \times *MCDC* \times *Audit*, and measures the incremental change in *Noncomply* \times *MCDC* for issuers in Louisiana relative to issuers in all other states. If the MCDC and audit law improve continuing disclosure filing frequency in EMMA, I expect the coefficients for *Noncomply* \times *MCDC* and *Noncomply* \times *MCDC* \times *Audit* to be positive.

The model includes control variables for risk characteristics associated with continuing disclosure in prior research (Cuny 2016; Cheng et al. 2019; Gillette et al. 2020; Abbas and

Johnson 2022). I include the percentage of general obligation bonds issued during the reporting period (*%GO*). Only state and local governments can issue general obligation bonds and they are considered lower risk than revenue bonds because issuers can raise taxes to repay bondholders. I include the percentage of bonds issued during the reporting period with the option to redeem the bonds before the scheduled maturity date (*%Callable*). Callable bonds are considered higher risk than noncallable bonds because the uncertainty of the call option creates information asymmetry between issuers and investors. I include the percentage of bonds issued during the reporting period with insured principal and interest payments (*%Insured*) because insured bonds are considered lower risk than uninsured bonds. Finally, I include a categorical variable for credit ratings. *Rating* is a numerical rating that increases by one as the credit rating assigned by Moody's, Standard & Poor's, or Fitch increases on the scale.

4.2 COST OF DEBT

To test whether the MCDC and audit law affect issuers' cost of debt (H3 and H4), I use the following difference-in-difference-in-differences design:

$$\begin{aligned}
 Yield_{i,t} = & \alpha_i + \beta_1 Noncomply_i + \beta_2 MCDC_t + \beta_3 Audit_i + \beta_4 Noncomply_i \times MCDC_t \\
 & + \beta_5 Noncomply_i \times Audit_i + \beta_6 MCDC_t \times Audit_i + \beta_7 Noncomply_i \times MCDC_t \times Audit_i \\
 & + Controls + Fixed Effects + \varepsilon_{i,t},
 \end{aligned} \tag{2}$$

where *Yield* is the bond yield to maturity on new bond issues. It is calculated as the discount rate that equates to the present value of the bond principal and interest payments on the issue date. I use the primary market measure because issuers do not directly incur a cost for higher yields in the secondary market (Baber and Gore 2008; Baber et al. 2013). Therefore, issuers have stronger incentives to reduce the cost of debt in the primary market. I also use the difference between the

bond yield and the average weekly market yield for general obligation and revenue bonds as an alternative measure of the cost of debt (*Yield_Spread*).

The parameter of interest for H3 is β_4 , the coefficient for *Noncomply* \times *MCDC*, and measures the change in bond yields for noncompliant issuers in non-Louisiana states after the MCDC relative to compliant issuers in non-Louisiana states before the MCDC. The parameter of interest for H4 is β_7 , the coefficient for *Noncomply* \times *MCDC* \times *Audit*, and measures the incremental change in *Noncomply* \times *MCDC* after the audit law for issuers in Louisiana relative to issuers in all other states. If the MCDC and audit law decrease bond yields, I expect the coefficients for *Noncomply* \times *MCDC* and *Noncomply* \times *MCDC* \times *Audit* to be negative. All other variables are defined above.

The model includes the control variables in Model (1) as well as control variables consistent with prior research on the cost of debt (Baber and Gore 2008; Baber et al. 2013; Cuny 2018; Edmonds, Leece, Vermeer, and Vermeer 2020). I include an indicator variable equal to one if the bond offering qualifies for preferential tax treatment by bank lenders (*Bank_Qualified*). The Internal Revenue Code of 1986 allows banks to deduct 80 percent of the carrying cost for bonds that qualify as tax-exempt to encourage banks to invest in smaller entities that issue bonds infrequently. I include the number of years between the issue date and maturity date of the bond (*YTM*). Bonds with a longer term to maturity are usually associated with a higher cost of debt because there is more time for credit ratings to fall and issuers to default. I also include the weekly market yields for municipal general obligation and revenue bonds from the Bond Buyer index (*Market_Index*). This index is published by a daily newspaper, *The Bond Buyer*, and tracks prices for a sample of long-term bonds that are actively traded.

4.3 FIXED EFFECTS

I include fixed effects in Models (1) and (2) to address concerns that my results are driven by time-invariant unobservable characteristics. I include year fixed effects to control for unobservable time effects. I include issuer fixed effects to control for unobservable issuer characteristics that can impact continuing disclosure filing frequency, which also absorb effects for sector and state. Since Rule 15c2-12 applies to underwriters, I include underwriter fixed effects to control for unobservable underwriter characteristics that can impact monitoring of issuers' compliance with continuing disclosure obligations. The coefficient estimates for *MCDC* are absorbed by year fixed effects and the coefficient estimates for *Noncomply*, *Audit*, and *Noncomply* \times *Audit* are absorbed by issuer fixed effects. However, the variables of interest in Models (1) and (2) are the interaction terms that measure the impact of the MCDC and audit law on noncompliant issuers.

CHAPTER 5: SAMPLE AND DESCRIPTIVE STATISTICS

Table 1, Panel A presents the sample selection for the tests of H1 and H2 examining disclosure compliance. I use the MSRB primary market historical database to identify municipal bond offerings during the pre-enforcement period (March 10, 2011 through March 9, 2014). I use the MSRB continuing disclosure historical database to identify continuing disclosures filed in EMMA over the full sample period (March 10, 2011 through March 9, 2017). To ensure that each issuer is subject to Rule 15c2-12 over the sample period, I exclude bonds with maturity dates prior to March 9, 2017. I also exclude bonds with aggregate principal amounts less than \$1 million because they are exempt from Rule 15c2-12. I then use the Committee on Uniform Securities Identification Procedures (CUSIP) numbers to merge with other databases. I obtain data for all other variables from the Mergent municipal bond database and the Thomson Reuters Securities Data Company (SDC) Platinum database. Finally, I exclude bonds that are issued outside of the 50 U.S. states and bonds that are unrated or below-investment-grade. My final sample for the disclosure compliance tests includes 185,180 issue-year observations.

Table 1, Panel B presents the sample selection for the tests of H3 and H4 examining the cost of debt. I use the MSRB primary market historical database to identify municipal bonds issued during the full sample period (March 10, 2011 through March 9, 2017). I obtain data for bond yields from Mergent. I then apply the same procedures described above. My final sample for the cost of debt tests includes 180,242 observations.

Table 2, Panel A presents descriptive statistics for the variables in Model (1). The sample mean of total continuing disclosures filed by issuers is 2.5 and issuers file a mean of 1.6 annual disclosures and 0.9 interim disclosures. Fifty-eight percent of the observations are classified as noncompliant issuers. Thirty-three percent of the observations are subject to the MCDC and 1.2

percent are subject to the audit law. The mean values for the percentage of general obligation, callable, and insured bonds issued during a reporting period are 45.2 percent, 88.7 percent, and 16.6 percent, respectively. I then split the sample into pre-enforcement and post-enforcement periods. The mean values for total, annual, and interim continuing disclosures before enforcement are 1.8, 1.1, and 0.7, respectively. However, after enforcement, the mean values for total, annual, and interim disclosures increase to 4.1, 2.5, and 1.5, respectively.

Table 2, Panel B presents descriptive statistics for the variables in Model (2). The sample mean bond yield is 2.6 percentage points and the mean difference between bond yields and market yields is 1.6 percentage points. Forty-seven percent of the observations are classified as noncompliant issuers. Forty-nine percent of the observations are subject to the MCDC and 1.4 percent are subject to the audit law. The mean values for the percentage of general obligation, callable, and insured bonds issued during a reporting period are 49.5 percent, 88.0 percent, and 22.8 percent, respectively. Twenty-nine percent of the bonds are bank qualified and the mean number of years between the issue date and the maturity date for the bonds is 10.4. When I split the sample into pre-enforcement and post-enforcement periods, the mean yield before enforcement is 2.9 percentage points and decreases to 2.3 percentage points after enforcement. The mean difference between bond yields and market yields is larger after enforcement.

CHAPTER 6: RESULTS

6.1 DISCLOSURE COMPLIANCE

Table 3 presents estimates of Model (1) testing the association between the enforcement shocks and disclosure frequency (*Filing_Freq*). In Column 1, the coefficient of 0.806 on *Noncomply* × *MCDC* is positive and significant ($p < 0.01$). Relative to the sample average for *Filing_Freq* of 2.529 disclosures, the coefficient indicates that noncompliant issuers in non-Louisiana states file 31.9 percent more continuing disclosures after the MCDC relative to compliant issuers in non-Louisiana states before the MCDC. This finding suggests that the MCDC compelled noncompliant issuers to identify and correct missing filings in EMMA. The coefficient of 1.497 for *Noncomply* × *MCDC* × *Audit* is also positive and significant ($p < 0.01$) and indicates that noncompliant issuers in Louisiana file 59.2 percent *incrementally* more continuing disclosures after the audit law relative to noncompliant issuers in all other states. Thus, the incremental increase in disclosure frequency suggests that auditing and regulatory investigations are complementary mechanisms.

I then examine whether the results are concentrated in annual disclosures or interim disclosures. Although issuers are only required to file annual disclosures and material event notices under Rule 15c2-12, some issuers voluntarily choose to file interim disclosures. Issuers that include interim disclosures in their continuing disclosure agreements are contractually obligated to provide them. I measure the number of annual continuing disclosures filed in EMMA during a reporting period, including annual financial statements (audited or unaudited) and annual operating data (*Annual_Freq*). I also measure the number of interim continuing disclosures filed in EMMA during a reporting period, including interim financial statements (monthly or quarterly), interim operating data, budget reports, and other voluntary disclosures

(*Interim_Freq*). I re-estimate Model (1) separately by replacing *Filing_Freq* with each measure as the dependent variable.

The results are presented in Table 3, Columns 2 and 3. In Column 2, the coefficient of 0.370 on *Noncomply* × *MCDC* is positive and significant ($p < 0.05$) when *Annual_Freq* is the dependent variable. Relative to the sample average for *Annual_Freq* of 1.553 disclosures, the coefficient indicates that noncompliant issuers file 23.8 percent more annual continuing disclosures after the MCDC. The coefficient of 1.105 for *Noncomply* × *MCDC* × *Audit* is also positive and significant ($p < 0.01$) and indicates that noncompliant issuers in Louisiana file 71.2 percent *incrementally* more annual continuing disclosures after the audit law. In Column 3, the coefficient of 0.463 on *Noncomply* × *MCDC* is also positive and significant when *Interim_Freq* is the dependent variable ($p < 0.01$). Relative to the sample average for *Interim_Freq* of 0.926 disclosures, the coefficient indicates that noncompliant issuers file 50.0 percent more interim continuing disclosures after the MCDC. However, the coefficient of 0.177 on *Noncomply* × *MCDC* × *Audit* is positive and not significant. These results suggest that the MCDC increased the frequency of both annual disclosures and interim disclosures and the audit law incrementally increased the frequency of annual disclosures.

In cross-sectional tests, I explore whether the increase in disclosure frequency after the MCDC and audit law is concentrated in areas where disclosure frequency was lower prior to the enforcement shocks. Because prior research suggests that low-risk issuers were less likely to file continuing disclosures (Cuny 2016; Cheng et al. 2019; Gillette et al. 2020), the increase in filing frequency could be mainly attributable to low-risk issuers. I create indicator variables to partition the sample using credit ratings, general obligation bonds, and bond insurance as the risk characteristics. *Risky_Rating* is an indicator variable equal to one for bonds with a credit rating

lower than the sample mean for *Rating*. *Risky_Issuer* is an indicator variable equal to one for issuers that do not have authority to raise taxes to repay bondholders. *Risky_Payment* is an indicator variable equal to one for uninsured bonds. I separately re-estimate Model (1) for each risk characteristic.

The results for these cross-sectional tests are presented in Table 4. Panel A presents the results for credit ratings. The coefficients are positive and significant for $Noncomply \times MCDC$ ($p < 0.05$) and $Noncomply \times MCDC \times Audit$ ($p < 0.01$) for issuers with higher credit ratings (Column 1). However, the coefficient for $Noncomply \times MCDC \times Audit$ is also positive and significant ($p < 0.01$) for issuers with lower credit ratings (Column 2). Panel B presents the results for type of issuer. The coefficient for $Noncomply \times MCDC$ is positive and significant ($p < 0.05$) for issuers with and without authority to raise taxes (Columns 1 and 2), whereas the coefficient for $Noncomply \times MCDC \times Audit$ is only positive and significant ($p < 0.01$) for issuers without authority to raise taxes (Column 2). Panel C presents the results for bond insurance. The coefficients for $Noncomply \times MCDC$ and $Noncomply \times MCDC \times Audit$ are positive and significant for both insured bonds (Column 1) and uninsured bonds (Column 2). Overall, the cross-sectional tests provide evidence that regulatory investigations and auditing improve disclosure compliance for both low and high-risk bonds, which supports the SEC's concern of widespread noncompliance before enforcement.

6.2 COST OF DEBT

Table 5 presents estimates of Model (2) testing the association between the enforcement shocks and bond yields (*Yield*). In Column 1, the coefficient for $Noncomply \times MCDC$ is not significant, suggesting that the MCDC did not change the cost of debt for noncompliant issuers in non-Louisiana states after the MCDC relative to compliant issuers in non-Louisiana states

before the MCDC. However, the coefficient for *Noncomply* × *MCDC* × *Audit* is negative and significant ($p < 0.01$) and the magnitude of the coefficient represents a 10.6 basis point *incremental* decrease in bond yields for noncompliant issuers in Louisiana after the audit law relative to noncompliant issuers in all other states. In Column 2, the results are consistent when the dependent variable is *Yield_Spread*. The coefficient for *Noncomply* × *MCDC* is not significant and the negative and significant ($p < 0.01$) coefficient for *Noncomply* × *MCDC* × *Audit* represents a decrease of 11.1 basis points. Overall, the results suggest that auditing decreases the cost of debt for noncompliant issuers by reducing investors' perception of default risk.

In cross-sectional tests, I explore how the cost of debt results vary for low and high-risk bonds using the risk characteristics described above for the disclosure compliance test. Because prior research suggests that higher disclosure quality lowers the cost of debt (Core 2001; Healy and Palepu 2001; Leuz and Wysocki 2016), higher disclosure quality after the audit law for low and high-risk bonds could correspond to lower cost of debt for low and high-risk bonds. I partition the sample using the same indicator variables (*Risky_Rating*, *Risky_Issuer*, and *Risky_Payment*) and separately re-estimate Model (2) for each risk characteristic.

The results for these cross-sectional tests are presented in Table 6. Panel A presents the results after partitioning the sample based on credit ratings. The coefficient for *Noncomply* × *MCDC* is not significant for issuers with higher credit ratings (Column 1) or lower credit ratings (Column 2). The coefficient for *Noncomply* × *MCDC* × *Audit* is negative and significant ($p < 0.01$) for issuers with higher credit ratings and not significant for issuers with lower credit ratings. For type of issuer in Panel B and bond insurance in Panel C, the coefficients for *Noncomply* × *MCDC* are not significant (Columns 1 and 2). The coefficients for *Noncomply* × *MCDC* × *Audit* are not significant for low-risk bonds (Column 1) and negative and significant

($p < 0.01$) for high-risk bonds (Column 2). I also find that the risk characteristics associated with a decrease in the cost of debt after the audit law are associated with an increase in continuing disclosure filing frequency in Table 4. Taken together, my results suggest that auditing decreases investors' perception of default risk for both low and high-risk municipal bonds.

6.3 ENTROPY BALANCING

An issuer's choice to comply with continuing disclosure obligations is endogenous. Thus, issuers self-select into compliant and noncompliant groups. A potential concern is that my results are due to fundamental characteristics that differ between compliant and noncompliant issuers instead of the shocks to enforcement. I reduce selection bias by removing covariate differences between compliant and noncompliant issuers using entropy balancing. Entropy balancing applies a set of weights to the observations so that the covariates of the treatment group match exactly to the control group (Hainmueller 2012). I balance the treatment group with the control group on the first, second, and third moments for the control variables in the models. I then re-estimate Models (1) and (2). Table 7 presents the results using entropy balancing and the results are consistent with Tables 3 and 5. Thus, my main results are robust to exact matching of the covariates using entropy balancing.

6.4 PARALLEL TRENDS

I use a difference-in-difference-in-differences design that estimates the difference between two difference-in-differences models. This design assumes trends in the dependent variables for the two difference-in-differences models are parallel in the pre-enforcement period (i.e., parallel trends assumption). A violation of this assumption can cause estimation bias in the treatment effects. My design assumes parallel trends between noncompliant and compliant issuers and between Louisiana and non-Louisiana issuers. To provide evidence of parallel trends

in the pre-enforcement period, I re-estimate Models (1) and (2) separately for each treatment variable (*Noncomply* or *Audit*) except that I interact the treatment variable with each of the reporting periods (*Pre3* to *Post3*). I use a benchmark reporting period from March 10, 2013 to March 9, 2014 (*Pre1*). Thus, the models estimate the trends for the two reporting periods before the benchmark period (*Pre2* and *Pre3*) and the three reporting periods after the benchmark period (*Post1*, *Post2*, and *Post3*). In untabulated analysis, I find that the coefficients on the interaction terms in the pre-enforcement period are not significant, which supports the parallel trends assumption.

6.5 SHORTER MEASUREMENT WINDOW

My sample period includes three years before and after the MCDC and audit law because many issuers in the municipal bond market issue bonds infrequently and a longer window allows for a larger and more comprehensive sample. Although longer measurement windows are common in disclosure studies to examine the persistence of changes in disclosure decisions over time, shorter measurement windows are common in cost of debt studies. A potential concern is that confounding events may occur during the sample period that bias my results for the cost of debt analysis. To mitigate this concern, I re-estimate Model (2) using a window one year before and after the enforcement shocks. Thus, this sample period includes bond issues from March 10, 2013 to March 9, 2015. In untabulated analysis, I find that my main results for the cost of debt are robust to using a sample period one year before and after the enforcement shocks.

6.6 ALTERNATIVE MEASURES OF NONCOMPLIANT ISSUERS

In the main analysis, I classify issuers as noncompliant (*Noncomply*) if they do not submit annual disclosures in EMMA for at least one reporting period before the enforcement shocks because Rule 15c2-12 requires annual disclosures to be filed within twelve months of the

issuer's fiscal year-end. However, this classification does not consider the timing of annual disclosures submitted to EMMA. Issuers are required to establish a filing deadline of twelve months or less in their continuing disclosure agreements. In sensitivity analysis, I re-estimate Models (1) and (2) using two timing cut-offs intended to capture issuers that submit annual disclosures late in addition to issuers that do not submit annual disclosures.¹⁴ First, I use twelve months to coincide with Rule 15c2-12. Second, I use nine months because the Single Audit Act requires issuers that expend over \$750,000 in federal awards during a fiscal year to submit audited financial statements to the Federal Audit Clearinghouse within nine months of their fiscal year-end.¹⁵ These issuers may be more likely to use a reporting deadline of nine months for their continuing disclosure agreements because the information is already available. In untabulated analysis, I find that my main results are robust to using these alternative measures to classify noncompliant issuers.

6.7 DISCUSSION AND RECONCILIATION TO ABBAS AND JOHNSON (2022) AND MAFFETT, SAMUELS, AND ZHOU (2021)

Two related studies examine the effect of the MCDC on continuing disclosure compliance and find mixed evidence. Abbas and Johnson (2022) examine the impact of the MCDC on the filing of audited financial statements among a small sample of cities. They focus on issuer-level effects instead of a market-wide effect and find an increase in continuing disclosure compliance after the MCDC for small issuers and issuers in states that do not require GAAP reporting. Maffett et al. (2021) provide descriptive evidence on issuers and underwriters

¹⁴ The MSRB historical databases do not include the filing deadlines included in continuing disclosure agreements. Thus, I test the sensitivity of the results using two common filing deadlines.

¹⁵ The Single Audit Act of 1984 (amended in 1996) requires governments and nonprofit organizations that spend over a threshold amount in federal funding in a fiscal year to obtain a single audit (SAA 1996). The threshold was changed from \$500,000 to \$750,000 for fiscal years beginning after December 26, 2014.

subject to the MCDC settlement terms.¹⁶ They also examine the impact of the MCDC on the filing of annual disclosures (audited financial statements and unaudited financial and operating information) among a large sample of issuers. In contrast to Abbas and Johnson (2022), Maffett et al. (2021) find a decrease in continuing disclosure compliance after the MCDC.

I replicate the results of Maffett et al. (2021) and reconcile the findings across the three studies. Maffett et al. (2021) compare issuers subject to Rule 15c2-12 (treatment group) to issuers exempt from Rule 15c2-12 (control group). Bonds with aggregate principal amounts less than \$1 million are exempt from Rule 15c2-12 and issuers with outstanding debt between \$1 million and \$10 million were also exempt from Rule 15c2-12 until July 1, 2009.¹⁷ Maffett et al. (2021) include issuers with outstanding debt less than \$10 million in their control group, which means a significant percentage of their control group of exempt issuers has not been exempt from Rule 15c2-12 for new bond issues since mid-2009.¹⁸ When I classify issuers that do not qualify for the small issuer exemption after July 1, 2009 in the control group, I find results consistent with Maffett et al. (2021). Specifically, annual disclosures for the treatment group *decrease* after the MCDC relative to the control group. When I include issuers that do not qualify for the small issuer exemption in the treatment group, I find results consistent with my main analysis. Annual disclosures for the treatment group *increase* after the MCDC relative to the

¹⁶ Maffett et al. (2021) examine issuers and underwriters charged with SEC enforcement actions under the MCDC (71 issuers and 72 underwriters). They do not examine all issuers and underwriters that voluntarily submitted self-reports because this information is not publicly available.

¹⁷ Effective July 1, 2009, issuers with outstanding debt less than \$10 million must submit annual disclosures to EMMA if the information is already prepared and publicly available. According to the SEC, “most small governmental issuers prepare and make publicly available annual financial statements or other financial and operating data as a matter of course” (SEC 2008, p.47). Thus, most small issuers do not qualify for the exemption as of July 1, 2009.

¹⁸ Small issuers represent a significant portion of the municipal bond market. They represented an estimated one-third of the market at the time the small issuer exemption was amended (Ackerman 2008).

control group. Thus, Maffett et al. (2021) provide evidence consistent with Abbas and Johnson (2022) that the MCDC improved continuing disclosure compliance more for small issuers.¹⁹

My study differs from these two studies in several ways. First, I use the MSRB's historical database of continuing disclosures submitted to EMMA to provide the first large-sample evidence that the MCDC improved continuing disclosure compliance in the municipal bond market. Like Maffett et al. (2021), I use a larger and more diverse sample of issuers than Abbas and Johnson (2022). I also use a more diverse sample of continuing disclosures than these two studies. Second, I examine the complimentary effect of the MCDC and the Louisiana audit law on continuing disclosure compliance, which also contributes to the broader literature on disclosure regulation and enforcement. Finally, I examine the market-wide economic consequences of these enforcement shocks on bond issuers and their investors and provide novel evidence about whether and how investors use continuing disclosures following enforcement.

¹⁹ This finding is consistent with concerns that “continuing disclosure compliance is going to be a problem” for small issuers after the small issuer exemption was amended because many of them “are not financial savvy, have lots of turnover on their staff, and only tap the municipal market once every several years” (Ackerman 2008).

CHAPTER 7: CONCLUSION

My study examines how auditing and regulatory investigations affect compliance with disclosure regulation and the cost of debt. Little is known about interactions between enforcement mechanisms due to limitations in most research settings (Leuz and Wysocki 2016). I exploit two shocks in the municipal bond market to examine my research questions. In 2014, the SEC announced the MCDC and Louisiana passed a state law requiring annual audits of compliance with continuing disclosure obligations under SEC Rule 15c2-12. I find an increase in continuing disclosure filing frequency after the MCDC for noncompliant issuers relative to compliant issuers. I also find an incremental increase in filing frequency for noncompliant issuers in Louisiana relative to noncompliant issuers in all other states. These findings suggest that auditing and regulatory investigations are complementary mechanisms that improve disclosure compliance. For the cost of debt, I find no effect after the MCDC. However, I find an incremental decrease in the cost of debt for noncompliant issuers in Louisiana relative to noncompliant issuers in all other states. These findings suggest that auditing decreases investors' perception of default risk.

My study makes several contributions to the academic literature. First, it contributes to the disclosure and financial reporting regulation literature by providing large-sample evidence that auditing improves disclosure compliance incremental to regulatory investigations. Second, it contributes to the auditing literature by providing evidence that auditing over compliance with securities regulation adds value in the capital markets by improving disclosure compliance and reducing the cost of debt. Finally, it contributes to the continuing disclosure literature by providing insight on how the determinants of disclosure compliance have shifted due to enforcement. My findings should be useful to the SEC as they continue to enhance disclosure

requirements under Rule 15c2-12, as well as investors and municipal bond issuers interested in lowering their cost of debt. More generally, my findings should be useful to policy makers, federal regulators, and state regulators as they continually evaluate the most appropriate mechanisms for enforcing disclosure regulation in the capital markets to protect investors.

Nonetheless, my study is subject to several limitations. First, the classification of issuers as noncompliant versus compliant is noisy because issuers can include stricter disclosure requirements (i.e., shorter filing deadlines or voluntary disclosures) in their continuing disclosure agreements than the requirements imposed by Rule 15c2-12. Hand-collecting this information from continuing disclosure agreements is not feasible for my study due to the large sample. Second, I do not identify the channel through which the cost of debt decreases after the audit law. Although my results suggest that continuing disclosures are important to investors, they do not disentangle whether the investor reaction is due to higher disclosure compliance or the signaling effect of auditing. Finally, it is possible that the results do not generalize to all capital markets due to the SEC's limited oversight authority in the municipal bond market.

TABLES

TABLE 1
Sample selection

Panel A: Sample selection for disclosure compliance

	<u>Observations</u>
Issue-year filings during the sample period (March 10, 2011 to March 9, 2017)	
for debt issues in the pre-enforcement period (March 10, 2011 to March 9, 2014)	188,182
Less debt issues for U.S. territories	(2,035)
Less below-investment-grade debt	(967)
Final sample of issue-years	<u>185,180</u>

Panel B: Sample selection for cost of debt

	<u>Observations</u>
Debt issues during the sample period (March 10, 2011 to March 9, 2017)	181,887
Less debt issues for U.S. territories	(1,042)
Less below-investment-grade debt	(254)
Less observations with missing data for control variables	(349)
Final sample of issues	<u>180,242</u>

TABLE 2
Descriptive statistics

Panel A: Descriptive statistics for the disclosure compliance sample

	Full Sample		Pre-enforcement		Post-enforcement	
	Mean	SD	Mean	SD	Mean	SD
<i>Filing_Freq</i>	2.529	3.602	1.763	2.912	4.066	4.296
<i>Annual_Freq</i>	1.553	1.777	1.086	1.417	2.490	2.038
<i>Interim_Freq</i>	0.926	2.361	0.651	1.968	1.477	2.920
<i>Noncomply</i>	0.581	0.493	0.574	0.494	0.596	0.491
<i>MCDC</i>	0.333	0.471	N/A	N/A	N/A	N/A
<i>Audit</i>	0.012	0.109	0.012	0.107	0.013	0.112
<i>%GO</i>	0.452	0.491	0.468	0.493	0.422	0.485
<i>%Callable</i>	0.887	0.233	0.885	0.244	0.891	0.211
<i>%Insured</i>	0.166	0.341	0.169	0.347	0.160	0.331
<i>Rating</i>	19.071	1.845	19.112	1.833	18.989	1.865

Panel B: Descriptive statistics for the cost of debt sample

	Full Sample		Pre-enforcement		Post-enforcement	
	Mean	SD	Mean	SD	Mean	SD
<i>Yield</i>	2.609	1.017	2.908	1.012	2.295	0.922
<i>Yield_Spread</i>	-1.557	0.886	-1.506	0.879	-1.611	0.891
<i>Noncomply</i>	0.470	0.499	0.557	0.497	0.378	0.485
<i>MCDC</i>	0.489	0.500	N/A	N/A	N/A	N/A
<i>Audit</i>	0.014	0.116	0.013	0.113	0.014	0.119
<i>%GO</i>	0.495	0.494	0.490	0.495	0.502	0.494
<i>%Callable</i>	0.880	0.246	0.883	0.253	0.877	0.239
<i>%Insured</i>	0.228	0.387	0.181	0.359	0.277	0.410
<i>Rating</i>	18.951	1.917	19.100	1.828	18.795	1.995
<i>Bank_Qualified</i>	0.293	0.455	0.302	0.459	0.282	0.450
<i>YTM</i>	10.420	5.785	11.495	5.353	9.295	6.001
<i>Market_Index</i>	4.169	0.622	4.418	0.576	3.908	0.559

Table 2 presents descriptive statistics for the final samples. Panel A reports descriptive statistics for the disclosure compliance sample of 185,180 observations. Panel B reports descriptive statistics for the cost of debt sample of 180,242 observations. Refer to the Appendix for all variable definitions.

TABLE 3
Association between enforcement and disclosure compliance

Variables	<i>Filing_Freq</i> (1)	<i>Annual_Freq</i> (2)	<i>Interim_Freq</i> (3)
<i>Noncomply</i> × <i>MCDC</i> × <i>Audit</i> (H2)	1.497*** (5.338)	1.105*** (7.448)	0.177 (1.438)
<i>Noncomply</i> × <i>MCDC</i> (H1)	0.806*** (2.868)	0.370** (2.345)	0.463*** (4.057)
<i>MCDC</i> × <i>Audit</i>	0.204 (0.899)	0.063 (0.693)	0.274* (1.919)
% <i>GO</i>	-0.287 (-0.300)	-0.396 (-0.740)	0.087 (0.173)
% <i>Callable</i>	0.278 (0.967)	0.086 (0.496)	0.102 (0.678)
% <i>Insured</i>	0.161 (0.438)	0.097 (0.514)	0.184 (0.816)
<i>Rating</i>	-0.072 (-1.246)	-0.034 (-1.493)	-0.039 (-0.970)
Constant	3.601*** (3.242)	2.213*** (4.352)	1.414* (1.849)
Year FE	Yes	Yes	Yes
Issuer FE	Yes	Yes	Yes
Underwriter FE	Yes	Yes	Yes
Observations	185,180	185,180	185,180
R-squared	0.694	0.602	0.713
F-test	28.50***	55.47***	2.07

Table 3 presents the results for the association between enforcement and disclosure compliance. In Columns (1), (2), and (3), the dependent variable is *Filing_Freq*, *Annual_Freq*, and *Interim_Freq*, respectively. *Noncomply* is an indicator variable equal to one if the issuer was noncompliant with its continuing disclosure agreements prior to enforcement. *MCDC* is an indicator variable equal to one for reporting periods where issuers are subject to regulatory enforcement (March 10, 2014 to March 9, 2017). *AUDIT* is an indicator variable equal to one for issuers subject to audit enforcement (Louisiana). The coefficient estimates for *MCDC* are absorbed by year fixed effects and the coefficient estimates for *Noncomply*, *Audit*, and *Noncomply* × *Audit* are absorbed by issuer fixed effects. The F-test compares the effect of regulatory enforcement to the effect of audit enforcement ($Noncomply \times MCDC = Noncomply \times MCDC + Noncomply \times MCDC \times Audit$). Refer to the Appendix for all variable definitions. Robust t-statistics are in parentheses and statistical significance is denoted as *** p<0.01, ** p<0.05, * p<0.10. Standard errors are clustered by state.

TABLE 4

Association between enforcement and disclosure compliance by risk characteristics

Panel A: Results for credit ratings

Variables	<i>Filing_Freq</i>	
	<i>Risky_Rating=0</i> (1)	<i>Risky_Rating=1</i> (2)
<i>Noncomply</i> × <i>MCDC</i> × <i>Audit</i> (H2)	2.119*** (5.940)	1.677*** (3.156)
<i>Noncomply</i> × <i>MCDC</i> (H1)	0.852** (2.419)	0.576 (1.510)
Controls	Yes	Yes
Year FE	Yes	Yes
Issuer FE	Yes	Yes
Underwriter FE	Yes	Yes
Observations	124,611	60,569
R-squared	0.695	0.746
F-test	35.28***	9.96***

Panel B: Results for issuer type

Variables	<i>Filing_Freq</i>	
	<i>Risky_Issuer=0</i> (1)	<i>Risky_Issuer=1</i> (2)
<i>Noncomply</i> × <i>MCDC</i> × <i>Audit</i> (H2)	-0.151 (-0.340)	2.756*** (8.979)
<i>Noncomply</i> × <i>MCDC</i> (H1)	0.917** (2.037)	0.745** (2.167)
Controls	Yes	Yes
Year FE	Yes	Yes
Issuer FE	Yes	Yes
Underwriter FE	Yes	Yes
Observations	81,986	103,194
R-squared	0.704	0.681
F-test	0.12	80.63***

TABLE 4 (continued)

Panel C: Results for bond insurance

Variables	<i>Filing_Freq</i>	
	<i>Risky_Payment=0</i>	<i>Risky_Payment=1</i>
	(1)	(2)
<i>Noncomply</i> × <i>MCDC</i> × <i>Audit</i> (H2)	1.551*** (2.805)	1.533*** (5.138)
<i>Noncomply</i> × <i>MCDC</i> (H1)	1.454*** (3.287)	0.655** (2.248)
Controls	Yes	Yes
Year FE	Yes	Yes
Issuer FE	Yes	Yes
Underwriter FE	Yes	Yes
Observations	35,133	150,047
R-squared	0.678	0.702
F-test	7.87***	26.40***

Table 4 presents the results for the association between enforcement and disclosure compliance across risk characteristics. The dependent variable is *Filing_Freq*. *Noncomply* is an indicator variable equal to one if the issuer was noncompliant with its continuing disclosure agreements prior to enforcement. *MCDC* is an indicator variable equal to one for reporting periods where issuers are subject to regulatory enforcement (March 10, 2014 to March 9, 2017). *AUDIT* is an indicator variable equal to one for issuers subject to audit enforcement (Louisiana). In Panel A, *Risky_Rating* is an indicator variable equal to one if the credit rating for the bond is lower than the mean credit rating for the sample. In Panel B, *Risky_Issuer* is an indicator variable equal to one if the issuer does not have authority to raise taxes to repay the bondholders. In Panel C, *Risky_Payment* is an indicator variable equal to one if the principal and interest payments are not insured. The F-test compares the effect of regulatory enforcement to the effect of audit enforcement ($Noncomply \times MCDC = Noncomply \times MCDC + Noncomply \times MCDC \times Audit$). Refer to the Appendix for all variable definitions. Robust t-statistics are in parentheses and statistical significance is denoted as *** p<0.01, ** p<0.05, * p<0.10. Standard errors are clustered by state.

TABLE 5
Association between enforcement and cost of debt

Variables	<i>Yield</i> (1)	<i>Yield_Spread</i> (2)
<i>Noncomply</i> × <i>MCDC</i> × <i>Audit</i> (H4)	-0.106*** (-2.941)	-0.111*** (-3.009)
<i>Noncomply</i> × <i>MCDC</i> (H3)	0.020 (0.617)	0.022 (0.691)
<i>MCDC</i> × <i>Audit</i>	0.054 (1.137)	0.069 (1.449)
% <i>GO</i>	0.279** (2.542)	0.282** (2.635)
% <i>Callable</i>	0.012 (0.239)	0.008 (0.161)
% <i>Insured</i>	-0.044 (-0.939)	-0.041 (-0.852)
<i>Rating</i>	-0.102*** (-9.575)	-0.102*** (-9.650)
<i>Bank_Qualified</i>	-0.273*** (-9.255)	-0.271*** (-9.355)
<i>YTM</i>	0.115*** (107.382)	0.115*** (104.395)
<i>Market_Index</i>	0.714*** (50.728)	-0.264*** (-19.040)
Constant	0.307* (1.870)	0.211 (1.336)
Year FE	Yes	Yes
Issuer FE	Yes	Yes
Underwriter FE	Yes	Yes
Observations	180,242	180,242
R-squared	0.886	0.856
F-test	8.65***	9.05***

Table 5 presents the results for the association between enforcement and the cost of debt. In Columns (1) and (2), the dependent variable is *Yield* and *Yield_Spread*, respectively. *Noncomply* is an indicator variable equal to one if the issuer was noncompliant with its continuing disclosure agreements prior to enforcement. *MCDC* is an indicator variable equal to one for reporting periods where issuers are subject to regulatory enforcement (March 10, 2014 to March 9, 2017). *AUDIT* is an indicator variable equal to one for issuers subject to audit enforcement (Louisiana). The coefficient estimates for *MCDC* are absorbed by year fixed effects and the coefficient estimates for *Noncomply*, *Audit*, and *Noncomply* × *Audit* are absorbed by issuer fixed effects. The F-test compares the effect of regulatory enforcement to the effect of audit enforcement ($Noncomply \times MCDC = Noncomply \times MCDC + Noncomply \times MCDC \times Audit$). Refer to the Appendix for all variable definitions. Robust t-statistics are in parentheses and statistical significance is denoted as *** p<0.01, ** p<0.05, * p<0.10. Standard errors are clustered by state.

TABLE 6

Association between enforcement and cost of debt by risk characteristics

Panel A: Results for credit ratings

Variables	Yield	
	<i>Risky_Rating=0</i> (1)	<i>Risky_Rating=1</i> (2)
<i>Noncomply</i> × <i>MCDC</i> × <i>Audit</i> (H4)	-0.105*** (-2.728)	0.222 (1.661)
<i>Noncomply</i> × <i>MCDC</i> (H3)	0.037 (1.393)	-0.004 (-0.060)
Controls	Yes	Yes
Year FE	Yes	Yes
Issuer FE	Yes	Yes
Underwriter FE	Yes	Yes
Observations	116,651	63,591
R-squared	0.889	0.890
F-test	7.44***	2.76

Panel B: Results for issuer type

Variables	Yield	
	<i>Risky_Issuer=0</i> (1)	<i>Risky_Issuer=1</i> (2)
<i>Noncomply</i> × <i>MCDC</i> × <i>Audit</i> (H4)	-0.032 (-0.557)	-0.514*** (-7.154)
<i>Noncomply</i> × <i>MCDC</i> (H3)	0.041 (0.943)	-0.003 (-0.115)
Controls	Yes	Yes
Year FE	Yes	Yes
Issuer FE	Yes	Yes
Underwriter FE	Yes	Yes
Observations	89,636	90,606
R-squared	0.910	0.867
F-test	0.31	51.18***

TABLE 6 (continued)

Panel C: Results for bond insurance

Variables	<i>Yield</i>	
	<i>Risky_Payment=0</i>	<i>Risky_Payment=1</i>
	(1)	(2)
<i>Noncomply</i> × <i>MCDC</i> × <i>Audit</i> (H4)	0.026 (0.448)	-0.195*** (-6.790)
<i>Noncomply</i> × <i>MCDC</i> (H3)	0.031 (0.573)	0.019 (0.777)
Controls	Yes	Yes
Year FE	Yes	Yes
Issuer FE	Yes	Yes
Underwriter FE	Yes	Yes
Observations	47,032	133,210
R-squared	0.904	0.887
F-test	0.20	46.10***

Table 6 presents the results for the association between enforcement and the cost of debt across risk characteristics. The dependent variable is *Yield*. *Noncomply* is an indicator variable equal to one if the issuer was noncompliant with its continuing disclosure agreements prior to enforcement. *MCDC* is an indicator variable equal to one for reporting periods where issuers are subject to regulatory enforcement (March 10, 2014 to March 9, 2017). *AUDIT* is an indicator variable equal to one for issuers subject to audit enforcement (Louisiana). In Panel A, *Risky_Rating* is an indicator variable equal to one if the credit rating for the bond is lower than the mean credit rating for the sample. In Panel B, *Risky_Issuer* is an indicator variable equal to one if the issuer does not have authority to raise taxes to repay the bondholders. In Panel C, *Risky_Payment* is an indicator variable equal to one if the principal and interest payments are not insured. The F-test compares the effect of regulatory enforcement to the effect of audit enforcement ($Noncomply \times MCDC = Noncomply \times MCDC + Noncomply \times MCDC \times Audit$). Refer to the Appendix for all variable definitions. Robust t-statistics are in parentheses and statistical significance is denoted as *** p<0.01, ** p<0.05, * p<0.10. Standard errors are clustered by state.

TABLE 7
Entropy balancing

Variables	<i>Filing_Freq</i> (1)	<i>Yield</i> (2)
<i>Noncomply</i> × <i>MCDC</i> × <i>Audit</i> (H2, H4)	1.518*** (5.402)	-0.135*** (-3.646)
<i>Noncomply</i> × <i>MCDC</i> (H1, H3)	0.830*** (3.028)	0.012 (0.382)
<i>MCDC</i> × <i>Audit</i>	0.199 (0.883)	0.089* (1.980)
% <i>GO</i>	-0.013 (-0.014)	0.320** (2.468)
% <i>Callable</i>	0.251 (0.902)	0.027 (0.516)
% <i>Insured</i>	0.133 (0.364)	-0.054 (-1.250)
<i>Rating</i>	-0.060 (-1.121)	-0.108*** (-13.131)
<i>Bank_Qualified</i>		-0.276*** (-9.270)
<i>YTM</i>		0.113*** (91.387)
<i>Market_Index</i>		0.727*** (52.239)
Constant	3.300*** (3.103)	0.361** (2.579)
Year FE	Yes	Yes
Issuer FE	Yes	Yes
Underwriter FE	Yes	Yes
Observations	185,180	180,242
R-squared	0.705	0.878
F-test	29.19***	13.29***

Table 7 presents the results using entropy balancing. In Column (1) the dependent variable is *Filing_Freq* and in Column (2) the dependent variable is *Yield*. *Noncomply* is an indicator variable equal to one if the issuer was noncompliant with its continuing disclosure agreements prior to enforcement. *MCDC* is an indicator variable equal to one for reporting periods where issuers are subject to regulatory enforcement (March 10, 2014 to March 9, 2017). *AUDIT* is an indicator variable equal to one for issuers subject to audit enforcement (Louisiana). The coefficient estimates for *MCDC* are absorbed by year fixed effects and the coefficient estimates for *Noncomply*, *Audit*, and *Noncomply* × *Audit* are absorbed by issuer fixed effects. The F-test compares the effect of regulatory enforcement to the effect of audit enforcement ($Noncomply \times MCDC = Noncomply \times MCDC + Noncomply \times MCDC \times Audit$). Refer to the Appendix for all variable definitions. Robust t-statistics are in parentheses and statistical significance is denoted as *** p<0.01, ** p<0.05, * p<0.10. Standard errors are clustered by state.

REFERENCES

- Abbas, Y. and C.L. Johnson. 2022. Does regulatory enforcement improve continuing disclosure? The municipal securities market case of the Municipalities Continuing Disclosure Cooperation (MCDC) initiative. *Journal of Public Budgeting, Accounting & Financial Management* 34 (2): 257-291.
- Ackerman, A. 2008, Dec. 9. Changes to 15c2-12's small issuer exemption sparks some concerns. *Bond Buyer* 366: 5.
- Aguilar, L. 2012, October 18. Taking a no-nonsense approach to enforcing the federal securities laws. Securities Enforcement Forum, Washington D.C. Available at <https://www.sec.gov/news/speech/2012-spch101812laahtm>.
- Allee, K. D., and T. L. Yohn. 2009. The demand for financial statements in an unregulated environment: An examination of the production and use of financial statements by privately held small businesses. *The Accounting Review* 84 (1): 1-25.
- Baber, W. R., and A. K. Gore. 2008. Consequences of GAAP disclosure regulation: Evidence from municipal debt issues. *The Accounting Review* 83 (3): 565-591.
- Baber, W. R., A. K. Gore, K. T. Rich, and J. X. Zhang. 2013. Accounting restatements, governance and municipal debt financing. *Journal of Accounting and Economics* 56: 212-227.
- Balakrishnan K., E. T. De George, A. Ertan, and H. Scobie. 2021. Economic consequences of mandatory auditor reporting to bank regulators. *Journal of Accounting and Economics*, Forthcoming.
- Bell, T.B., F.O. Marrs, I. Solomon, and H. Thomas. 1997. Auditing organizations through a strategic-systems lens. KPMG Peat Marwick.
- Blackwell, D. W., T. R. Noland, and D. B. Winters. 1998. The value of auditor assurance: Evidence from loan pricing. *Journal of Accounting Research* 36 (1): 57-70.
- Cassar, G., C. D. Ittner, and K. S. Cavalluzzo. 2015. Alternative information sources and information asymmetry reduction: Evidence from small business debt. *Journal of Accounting and Economics* 59: 242-263.
- Cheng, S. F., C. Cuny, and H. Xue. 2019. Disclosure and competition for capital. Working paper, Tulane University, New York University, and Duke University.
- Clarkson, P. M. 2000. Auditor quality and the accuracy of management earnings forecasts. *Contemporary Accounting Research* 17 (4): 595-622.

- Core, J. E. 2001. A review of the empirical disclosure literature: Discussion. *Journal of Accounting and Economics* 31: 441-456.
- Cornaggia, J., K. J. Cornaggia, and R. D. Israelsen. 2018. Credit ratings and the cost of municipal financing. *Review of Financial Studies* 31 (6): 2038-2079.
- Cornaggia, K., J. Hund, and G. Nguyen. 2020. Investor attention and municipal bond returns. Working paper, Pennsylvania State University and University of Georgia.
- Cuny, C. 2016. Voluntary disclosure incentives: Evidence from the municipal bond market. *Journal of Accounting and Economics* 62: 87-102.
- Cuny, C. 2018. When knowledge is power: Evidence from the municipal bond market. *Journal of Accounting and Economics* 65: 109-128.
- Cuny, C., and S. Dube. 2019. The moderating role of disclosure quality. Working paper, New York University and Fordham University.
- Edmonds, C. T., R. D. Leece, B. Y. Vermeer, and T. E. Vermeer. 2020. The information value of qualified and adverse audit reports: Evidence from the municipal sector. *Auditing: A Journal of Practice & Theory* 39 (1): 21-41.
- Files, R. 2012. SEC enforcement: Does forthright disclosure and cooperation really matter? *Journal of Accounting and Economics* 53: 353-374.
- Files, R., G. S. Martin, and S. J. Rasmussen. 2019. Regulator-cited cooperation credit and firm value: Evidence from enforcement actions. *The Accounting Review* 94 (4): 275-302.
- Ghosh, A.A., H. Jarva, and S. G. Ryan. 2020. Bank regulation/supervision and bank auditing. Working paper, University of North Carolina at Charlotte, Aalto University, and New York University.
- Gillette, J. R., D. Samuels, and F. S. Zhou. 2020. The effect of credit ratings on disclosure: Evidence from the recalibration of Moody's municipal ratings. *Journal of Accounting Research* 58 (3): 693-739.
- Gopalan, Y., A. Imdieke, J.H. Schroeder, and S. Stuber. 2020. Reliance on external assurance in bank monitoring. Working paper, Indiana University, University of Notre Dame, and Texas A&M University.
- Grein, B. M., and S. L. Tate. 2011. Monitoring by auditors: The case of public housing authorities. *The Accounting Review* 86 (4): 1289-1319.
- Hainmueller, J. 2012. Entropy Balancing: A multivariate reweighting method to produce balanced samples in observational studies. *Political Analysis* 20: 25-46.

- Healy, P. M., and K. G. Palepu. 2001. Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics* 31: 405-440.
- Hecht, G. 2004. Systems thinking, mental representations, and unintended consequence identification. Working paper, University of Illinois at Urbana-Champaign.
- Ingram, R. W., K. K. Raman, and E. R. Wilson. 1989. The information in governmental annual reports: A contemporaneous price reaction approach. *The Accounting Review* 64 (2): 250-268.
- Ingram, R. W., and E. R. Wilson. 1999. Information intermediation and seasoned municipal bond yields. *Research in Governmental and Nonprofit Accounting* 10: 1-31.
- Kaplow, L., and S. Shavell. 1994. Optimal law enforcement with self-reporting of behavior. *Journal of Political Economy* 102 (3): 583-606.
- Kim, J., D. A. Simunic, M. T. Stein, and C. H. Yi. 2011. Voluntary audits and the cost of debt capital for privately held firms: Korean evidence. *Contemporary Accounting Research* 28 (2): 585-615.
- Kinney Jr., W. R., and R. D. Martin. 1994. Does auditing reduce bias in financial reporting? A review of audit-related adjustment studies. *Auditing: A Journal of Practice & Theory* 13 (Spring): 149-156.
- Lennox, C. S., and J. A. Pittman. 2011. Voluntary audits versus mandatory audits. *The Accounting Review* 86 (5): 1655-1678.
- Leone, A. J., E. X. Li, and M. Liu. 2021. On the SEC's 2010 enforcement cooperation program. *Journal of Accounting and Economics* 71: 1-22.
- Leuz, C., and P. D. Wysocki. 2016. The economics of disclosure and financial reporting regulation: Evidence and suggestions for future research. *Journal of Accounting Research* 54 (2): 525-622.
- Louisiana Act No. 463. 2014. RS 39:1438 – Issuers of securities; continuing disclosure requirements; audit requirements. Available at <https://www.legis.la.gov/Legis/Law.aspx?d=919743>.
- Maffett, M., D. Samuels, and F. Zhou. 2021. Regulatory amnesty: Evidence from the municipalities continuing disclosure cooperation initiative. Working paper, University of Chicago and University of Pennsylvania.
- McConomy, B. J. 1998. Bias and accuracy of management earnings forecasts: An evaluation of the impact of auditing. *Contemporary Accounting Research* 15 (2): 167-195.

- Minnis, M. 2011. The value of financial statement verification in debt financing: Evidence from private U.S. firms. *Journal of Accounting Research* 49 (2): 457-506.
- Municipal Securities Rulemaking Board (MSRB). 2020. Muni facts. Available at <http://iabcn.org/wp-content/uploads/2020/09/MSRB-fact-sheet.pdf>.
- Public Company Accounting Oversight Board (PCAOB). 2017, Oct. 24. IAG Working Group: Auditor's Consideration of a Client's Noncompliance with Laws and Regulations. Available at <https://pcaobus.org/News/Events/Documents/10242017-IAG-meeting/WG-slides-NOCLAR.pdf>.
- Reck, J. L., E. R. Wilson, D. Gotlob, and C. M. Lawrence. 2004. Governmental capital markets research in accounting: A review, extension, and directions for future research. *Research in Governmental and Nonprofit Accounting* 11: 1-33.
- Reck, J. L., and E. R. Wilson. 2006. Information transparency and pricing in the municipal bond secondary market. *Journal of Accounting and Public Policy* 25: 1-31.
- Rhodes, C. W. 2015. Living in a material world: Defining "materiality" in the municipal bond market and Rule 15c2-12. *Washington and Lee Law Review* 72 (4): 1989-2037.
- Saito, Y., and C. S. McIntosh. 2010. The economic value of auditing and its effectiveness in public school operations. *Contemporary Accounting Research* 27 (2): 639-667.
- Securities and Exchange Commission (SEC). 1994. Municipal securities disclosure. Available at <https://www.govinfo.gov/content/pkg/FR-1994-03-17/html/94-5927.htm>.
- Securities and Exchange Commission (SEC). 2008. Amendment to municipal securities disclosure. Available at <https://www.sec.gov/rules/final/2008/34-59062.pdf>.
- Securities and Exchange Commission (SEC). 2012. Report on the municipal securities market. Available at <https://www.sec.gov/news/studies/2012/munireport073112.pdf>.
- Securities and Exchange Commission (SEC). 2014. Municipalities continuing disclosure cooperation initiative. Available at <https://www.sec.gov/divisions/enforce/municipalities-continuing-disclosure-cooperation-initiative.shtml>.
- Securities and Exchange Commission (SEC). 2018. Amendment to municipal securities disclosure. Available at <https://www.sec.gov/rules/final/2018/34-83885.pdf>.
- Sengupta, P. 1998. Corporate disclosure quality and the cost of debt. *The Accounting Review* 73 (4): 459-474.
- Single Audit Act (SAA) Amendments of 1996. Public Law 104-156. Available at https://obamawhitehouse.archives.gov/sites/default/files/omb/assets/about_omb/104-156.pdf.

Sterman, J.D. 2000. *Business dynamics: Systems thinking and modeling for a complex world*. Boston, MA: Irwin McGraw-Hill.

Thomsen, L. C. 2009. Testimony concerning investigations and examinations by the Securities and Exchange Commission and issues raised by the Bernard L. Madoff investment securities matter. Available at <https://www.sec.gov/news/testimony/2009/ts112709lct.htm>.

Wallace, W. A. 1980. The economic role of the audit in free and regulated markets. The Touche Ross and Co. aid to education program [Reprinted in *Auditing Monographs* (New York: Macmillan Publishing Co., 1985)].

Wallace, W. A. 2004. The economic role of the audit in free and regulated markets: A look back and a look forward. *Research in Accounting Regulation* 17: 267-298.

APPENDIX: VARIABLE DEFINITIONS

Independent Variables

<i>Noncomply</i>	An indicator variable equal to one if the issuer does not submit annual disclosures in EMMA for at least one reporting period before the MCDC and audit law.
<i>MCDC</i>	An indicator variable equal to one for reporting periods after the initiation of the MCDC (March 10, 2014 to March 9, 2017).
<i>Audit</i>	An indicator variable equal to one if the issuer is subject to an annual audit of compliance with continuing disclosure obligations (Louisiana).

Dependent Variables

<i>Filing_Freq</i>	The total number of continuing disclosures filed in EMMA during the reporting period, including annual financial statements (audited or unaudited), annual operating data, interim financial statements (monthly or quarterly), interim operating data, budget reports, and other voluntary disclosures.
<i>Annual_Freq</i>	The total number of annual continuing disclosures filed in EMMA during the reporting period, including annual financial statements (audited or unaudited) and annual operating data.
<i>Interim_Freq</i>	The total number of interim continuing disclosures filed in EMMA during the reporting period, including interim financial statements (monthly or quarterly), interim operating data, budget reports, and other voluntary disclosures.
<i>Yield</i>	The bond yield to maturity calculated as the discount rate that equates to the present value of the bond principal and interest payments on the issue date.
<i>Yield_Spread</i>	The difference between the bond yield and the average weekly market yield for municipal general obligation or revenue bonds from the Bond Buyer index.

Control Variables

<i>%GO</i>	The percentage of general obligation bonds issued during the reporting period.
<i>%Callable</i>	The percentage of bonds issued during the reporting period with the option to redeem the bonds before the scheduled maturity date.
<i>%Insured</i>	The percentage of bonds issued during the reporting period with principal and interest payments that are insured.
<i>Rating</i>	A numerical rating that increases by one as the bond rating increases based on the credit rating assigned by Moody's, Standard & Poor's, or Fitch.
<i>Bank_Qualified</i>	An indicator variable equal to one if the issue qualifies for preferential tax treatment by bank lenders.
<i>YTM</i>	The number of years between the issue date and maturity date of the bond.
<i>Market_Index</i>	The weekly market yield for municipal general obligation or revenue bonds from the Bond Buyer index.

APPENDIX: VARIABLE DEFINITIONS (continued)

Other Variables

<i>Risky_Rating</i>	An indicator variable equal to one if the credit rating for the bond is lower than the mean credit rating for the sample (i.e., higher risk).
<i>Risky_Issuer</i>	An indicator variable equal to one if the issuer does not have authority to raise taxes to repay the bondholders (i.e., higher risk).
<i>Risky_Payment</i>	An indicator variable equal to one if the principal and interest payments are not insured (i.e., higher risk).