Carrot or Stick?

The Impact of Regulatory Leniency on Municipal Disclosure Compliance[*]

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Abstract

We examine how lenient self-reporting programs affect compliance in the context of the SEC's 2014 Municipalities Continuing Disclosure Cooperation initiative (MCDC). In an effort to increase transparency in the municipal debt market, the MCDC granted favorable settlement terms to municipal-debt issuers and underwriters that voluntarily self-reported having violated SEC disclosure requirements. Although there was widespread participation among underwriters, the vast majority of municipal issuers did not participate in the MCDC initiative, despite having publicly observable disclosure violations. Consistent with an improvement in underwriter oversight of the initial bond offering following the MCDC, we find that official statements were less likely to include false claims regarding past disclosure compliance, particularly for issuers with participating underwriters. However, contrary to the initiative's primary objective, we find that issuers' compliance with continuing disclosure requirements *decreased* by 9% after the MCDC initiative. Overall, our findings suggest that absent a credible ex-post enforcement threat, regulatory leniency programs are unlikely to be successful and could instead exacerbate noncompliance by revealing the weaknesses of the existing regulatory regime.

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1 Introduction

Disciplining misconduct in a cost-effective manner is a fundamental challenge for regulators. Leniency initiatives, i.e., programs that encourage entities to self-report regulatory violations and voluntarily engage in remediation procedures in exchange for favorable settlement terms, can be an attractive alternative to spending resources on detecting non-compliance and imposing harsh penalties.[1] Proponents argue that a lenient approach that increases awareness of a regulation's existence, emphasizes the importance of compliance, and offers violators a low-cost opportunity to come clean can be more effective and politically appealing than pursuing punitive enforcement actions.[2] However, theory cautions that, without a credible ex-post enforcement threat against entities that fail to self-report, leniency initiatives might not increase compliance (e.g., Malik, 1993; Kaplow and Shavell, 1994; Innes, 1999). Moreover, without a clear commitment to enforcement against non-compliant entities, a leniency policy might not only be ineffective but, by revealing the limitations of the regulator's enforcement capabilities, could even exacerbate the problem it sets out to fix.

Prior research on regulatory self-reporting initiatives provides only a partial assessment of the policies' effectiveness because the level of misconduct among non-participating entities is typically unobservable (e.g., Files, 2012; Files et al., 2019; Leone et al., 2020). In contrast, we study a recent SEC self-reporting initiative in the notoriously opaque municipal bond market, where the targeted disclosure violations are publicly observable (e.g., Cuny, 2016, 2018). This feature of our setting provides us with a novel opportunity to better understand two fundamental questions about the effectiveness of regulatory leniency initiatives: (i) which types of entities choose to participate in such programs (and which do not, but could have), and (ii) how do these initiatives affect regulatory compliance?

The lack of transparency in the municipal bond market is an ongoing concern for regulators,

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[1] Leniency programs can be particularly attractive when the violators are individuals or nonprofit entities against whom imposing harsh punishments can be undesirable and politically costly.

[2] For example, in a recent speech, SEC Commissioner Hester Pierce advocated for regulatory enforcement approaches that "seek to encourage compliance by building an understanding of the purpose behind rules and suggesting ways to comply with those rules" over formal enforcement actions (SEC, 2018b).

particularly in light of the large presence of retail investors.[3] Following a significant increase in defaults and bankruptcies after the 2008 financial crisis (Moody's, 2017), the abatement of municipal bond insurance (e.g., SEC, 2012; Cuny, 2016), and the rise in underfunded public pensions and healthcare costs (e.g., Novy-Marx and Rauh, 2011b,a), the SEC has become even more concerned about the lack of disclosure in the municipal market.

Addressing the lack of municipal disclosure is challenging because municipal borrowers are exempt from the majority of federal regulations, including the 1933 and 1934 Securities and Exchange Acts, and thus the SEC cannot require issuers to file financial statements. Instead, the SEC relies on underwriters to oversee municipal disclosure and evaluate issuers' ability to file ongoing financial information after their initial bond offering (i.e., "continuing disclosure"). Specifically, SEC Rule 15c2-12 requires that, at the time of the bond offering, underwriters negotiate a continuing disclosure agreement wherein the issuer commits to filing certain annual financial information with the MSRB after the bond offering. The rule also requires that, in the official statement accompanying a bond offering, the issuer must attest to, and the underwriter must verify, the issuer's compliance with past continuing disclosure agreements. Despite this requirement, municipal continuing disclosure has historically been sparse, making it unclear whether underwriters can serve as effective monitors of issuers' post-bond-offering activities.[4]

In an effort to increase transparency in the municipal bond market, in 2014, the SEC launched the Municipalities Continuing Disclosure Cooperation (MCDC) initiative. With the MCDC, the SEC tried to leverage the fact that, although it cannot directly mandate municipal continuing disclosure, issuers' bond offering documents are subject to the SEC's anti-fraud provisions. Anti-fraud provisions allow the Commission to penalize issuers and underwriters whose bond offering documents contain materially misleading statements (e.g., regarding past compliance with a continuing disclosure agreement).[5] Under this initiative, the SEC offered municipalities and their underwriters

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[3] For example, in 2016, retail investors accounted for 67% of municipal bond holdings (44% directly and 23% indirectly through mutual funds, money market funds, and ETFs) (e.g., Gillette et al., 2020). Academic evidence supports the idea that municipal disclosures are useful, particularly for retail investors (Cuny et al., 2022), and that the lack of disclosure privileges sophisticated investors and broker–dealers at the expense of retail investors (Cuny, 2018).

[4] For example, nearly 40% of municipalities failed to file any continuing disclosures in 2009 (Schmitt, 2011).

[5] In the municipal market, the SEC has the authority to file actions under Section 17(a) of the Securities Act of 1933 and Rule 10b-5 of the 1934 Act for making false, misleading, or incomplete statements or omissions. However, prior

a limited-time window during which they could self-report whether they issued bonds for which the offering documents inaccurately reported the issuer's past disclosure compliance and thereby violated the SEC's anti-fraud provisions.[6] In exchange for self-reporting and implementing remediation procedures, the MCDC offered favorable settlement terms and reduced penalties. The basic idea behind the MCDC was that, by targeting issuers' misstatements about *past* disclosures, the SEC could educate issuers about their reporting obligations and encourage them to improve their *future* continuing disclosure compliance without imposing harsh penalties that would ultimately be borne by the municipality's citizens. Importantly, although the MCDC stated that its favorable terms would not apply to unreported violations discovered after the leniency period's expiration, it did not specify exactly what the costs for non-participating violators would be (SEC, 2014).

We first examine which entities participated in the MCDC. The key feature of the municipal setting is that violations can be inferred from a lack of disclosure on the Municipal Securities Rulemaking Board's (MSRB) website. Thus, we are able to construct a sample that consists of issuers and underwriters with *publicly observable* violations of the SEC's anti-fraud provisions regarding continuing disclosure compliance (hereafter, "eligible" entities). Within the sample of eligible entities, seventy-two underwriters participated in the initiative, representing about 48.6% of all MCDC-eligible underwriters and approximately 94.9% of debt issued from 2010 to 2013. Participating underwriters represent significantly more issuers and underwrite larger bond offerings than non-participating underwriters. In contrast, only 73 eligible municipal issuers participated in the initiative, representing about 3.5% of MCDC-eligible issuers and 6.1% of debt issued from 2010 to 2013. Participating municipalities issue more debt, borrow more frequently, and interestingly,

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to 2014, the SEC had charged only two municipalities and one underwriter for falsely claiming they had complied with continuing disclosures in their bond offering documents (Feyer et al., 2018).

[6] To fix ideas, consider the following hypothetical example of a continuing disclosure agreement violation. In 2011, Issuer A issues a bond underwritten by Underwriter B. The 2011 bond offering documents include a continuing disclosure agreement, as required by Rule 15c2-12, wherein the issuer promises to publicly file annual financial information. Also as required by Rule 15c2-12, Underwriter B verifies and agrees upon Issuer A's ability to fulfill this commitment. In 2012, Issuer A does not file any financial information. In 2013, Issuer A issues a second bond underwritten by Underwriter B. In the accompanying offering documents, Issuer A falsely claims to have historically been in compliance with all previous continuing disclosure agreements, thus resulting in a violation of the SEC's anti-fraud provisions for both Issuer A and Underwriter B. Importantly, the SEC can pursue an enforcement action against the issuer and underwriter only for the false statement in the offering document in 2013, not the failure to file continuing disclosure in 2012.

are *more* likely to file continuing disclosure in the pre-amnesty period. Overall, the fact that mostly only large, high-visibility underwriters, who were likely the most obvious targets for post-MCDC enforcement actions, participated in the initiative (e.g., Kedia and Rajgopal, 2011) suggests that, consistent with economic theory (e.g., Kaplow and Shavell, 1994), the perception of a credible post-MCDC enforcement threat was a key element of the participation decision.

Even though few municipal issuers directly participated in the initiative, most of their underwriters did. Thus, the MCDC might nonetheless have increased municipalities' awareness of their compliance obligations and underwriters' oversight thereof. To investigate this question, we first examine whether, following the MCDC initiative, issuers are more likely to admit to past continuing disclosure violations in their bond-offering documents. Although increasing future disclosure was the ultimate objective of the MCDC, targeting issuers' false claims of past continuing-disclosure compliance in their official statements was the means through which the SEC sought to achieve this end. Placing an increased focus on these violations could increase issuers' incentives to disclose past noncompliance and underwriters' incentives to ensure that they do. We find that, following the MCDC initiative, issuers' official statements are over 50% more likely to contain admissions of past continuing disclosure violations, particularly for offerings sponsored by participating underwriters. Again, this finding is consistent with underwriters perceiving a realistic possibility of punitive post-MCDC enforcement action and accordingly improving their oversight of issuers' offering documents.

Next, we turn to the SEC's primary concern—the MCDC's impact on future continuing-disclosure compliance. The MCDC's settlement terms required that issuers implement procedures and training regarding continuing disclosure and that underwriters retain an independent consultant to review their continuing disclosure due diligence procedures and implement any resulting recommendations. Most large underwriters participated in the MCDC and the issuers of these participating underwriters were more likely to acknowledge past continuing disclosure violations. Although few issuers participated, if participating underwriters can also influence issuers' continuing disclosure decisions through their due diligence procedures (e.g., by educating issuers about

how to meet their post-issue compliance obligations or by refusing to underwrite future offerings if an issuer fails to comply) or if issuers want to avoid having to publicly acknowledge past disclosure violations in their official statements, the MCDC could lead to an increase in continuing disclosure compliance. However, even if underwriters substantively implemented the MCDC's recommended remediation procedures, they cannot directly influence issuers' disclosures after the initial offering, making it questionable whether the initiative would have any impact on continuing disclosure compliance.

Moreover, by revealing the weakness of the existing regulatory regime, the MCDC could even lead to a decrease in continuing disclosure compliance. That is, because all the SEC effectively did with the MCDC initiative was encourage issuers to admit to past continuing disclosure violations in their bond offering documents, issuers might realize that there is little repercussion from not complying with their continuing disclosure agreements. For instance, the fact that the MCDC led to a significant increase in the recognition of past continuing disclosure violations in issuers' bond offering documents likely made it widely apparent that many municipalities do not comply with their continuing disclosure agreements. Coupled with the lack of punitive retaliation against the many eligible issuers that did not self-report and implement remediation procedures after the end of the MCDC self-reporting period, this could exacerbate skepticism regarding the SEC's enforcement capabilities and intentions and lead entities to further decrease continuing disclosure compliance.[7]

To evaluate the MCDC's impact on continuing disclosure, we compare disclosure changes for issuers who are required to file ("treated" issuers) to issuers who are not, but who may disclose voluntarily ("control" issuers). Voluntarily disclosing issuers consist primarily of municipalities with smaller or short-term debt offerings who are exempt from continuing disclosure obligations (see Section 2 for details), but choose to provide disclosure voluntarily to meet investor demands or signal credit quality (e.g., Cuny, 2016, 2018; Cuny et al., 2022; Gillette et al., 2020). Using voluntary disclosers as the benchmark allows us to control for contemporaneous changes in non-regulatory-based disclosure incentives (e.g., capital-market demand), but raises the concern that

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[7] After the MCDC enforcement sweep ended in 2016, between 2016 and 2018, the SEC charged only a single issuer and three underwriters for continuing-disclosure-related violations of the anti-fraud provisions (SEC, 2020).

the two groups might not have similar disclosure trends. To mitigate this concern, we include controls for (i) differences in issuers' propensity to access the capital markets, (ii) state-year level economic or regulatory shocks, and (iii) time-invariant issuer and underwriter characteristics. We also report results using an entropy-balanced sample (based on pre-MCDC issuer characteristics).

We find that continuing disclosure among treated issuers *decreased* by an economically and statistically significant 7 to 10 percentage points after the MCDC initiative (a decline of approximately 9% to 12% compared to their pre-MCDC disclosure levels). Mapping out the effect in event time, we show that the treatment and control groups have similar trends in continuing disclosure rates in the years leading up to the MCDC initiative, which alleviates the concern that our results are attributable to anticipatory effects or other events preceding the initiative. In the post-MCDC period, the treatment effect is negative and statistically significant in all periods, suggesting that the effect of the MCDC was immediate and persistent. Our evidence suggests that, rather than gaining a better understanding of how to fulfill their continuing disclosure compliance obligations, what issuers seem to have learned from the MCDC initiative was that the SEC has little intention (or ability) to otherwise compel municipal continuing disclosure compliance.

A drawback of our setting is that the MCDC initiative applied to all treated issuers and underwriters at the same time (i.e., March 2014), meaning that any contemporaneous changes to the municipal reporting environment that affect our treatment and control issuers differently could pose a threat to our identification of the treatment effect. First, we confirm (through discussions with the SEC and a review of industry publications) that there were no other continuing disclosure initiatives in the municipal market during our sample period. Second, in additional analyses, we rule out the concern that other contemporaneous regulatory changes, including new registration and fiduciary requirements for municipal advisors and new pricing rules for broker-dealers, indirectly affected issuers' continuing disclosure compliance and could explain our findings. Third, we show that the observed decrease in continuing disclosure for treated issuers manifests not only in comparison to the control group, but also in absolute terms (i.e., a significant fraction of treated entities have lower continuing disclosure rates after the MCDC than before).

Finally, we examine cross-sectional differences in the post-MCDC change in continuing disclosure for (i) issuers with bonds underwritten by participating versus non-participating underwriters and (ii) participating and non-participating issuers. We find that changes in continuing disclosure are not significantly different for issuers with participating versus non-participating underwriters, suggesting that, on average, underwriters do not improve issuers' (post-bond-offering) continuing disclosure compliance (which is in contrast to our evidence of underwriters' influence at the time of the bond offering). Turning to the effect of issuer participation, we find that issuers that directly participated in the MCDC initiative exhibited a 12.4 percentage point *increase* in continuing disclosure, relative to the control group. Although knowing that these few (73) participating issuers increased disclosure can be helpful in understanding what happened when issuers chose to participate in the MCDC, it has little implication for understanding the impact of the initiative on the overall level of continuing disclosure compliance in the municipal bond market. Nonetheless, this result does suggest that, if more entities had chosen to participate, the MCDC initiative might have had a less negative impact on the overall level of continuing disclosure.

Our paper makes several contributions to the existing literature. Foremost, it speaks to the ongoing regulatory debate about the effectiveness of relatively lenient enforcement programs like self-reporting initiatives.[8] Consistent with economic theory (e.g., Kaplow and Shavell, 1994), our findings suggest that self-reporting-based approaches are likely to be ineffective absent a credible enforcement threat for non-participants. Without such a threat, regulatory leniency may instead reveal a regulator's unwillingness (or inability) to pursue more costly direct enforcement tactics and thereby exacerbate noncompliance.

Although some of the unique features of the municipal debt market could limit the generalizability of our findings, the economic motives for adopting a lenient self-reporting enforcement approach in the municipal setting (i.e., an aversion to costly detection efforts and punitive penalties) and

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[8] The SEC has recently pursued self-reporting-based approaches in several other settings. For example, it implemented the Share Class Selection Disclosure (SCSD) Initiative that temporarily waived fines for broker-dealers that self-reported misconduct related to placing clients in higher fee investments, when identical lower-fee share classes were available (SEC, 2018a). FINRA developed a similar program for share class recommendations in 529 college savings programs (FINRA, 2019). In early 2023, in the Justice Department expanded its leniency policies to persuade more firms to self-report misconduct (Michaels, 2023).

the incentives for complying with one (i.e., the likelihood of detection and the credibility of the ex-post enforcement threat) are ubiquitous. Leniency initiatives are most appealing in settings where direct enforcement is infeasible or undesirable. Our study suggests that regulators considering similar approaches should be careful that the leniency initiative isn't interpreted as a signal that the regulators are not willing or able to pursue more costly enforcement options (e.g., by making clear and credible the consequences of not participating in the initiative).

Our paper is also relevant to a growing literature studying transparency in the municipal bond market (e.g., Baber and Gore, 2008; Baber et al., 2013; Kido et al., 2012; Cuny, 2016, 2018; Gillette et al., 2020; Kim et al., 2022; Cuny et al., 2022). The lack of transparency in this market has been an ongoing concern for regulators for decades. A leniency-based approach that encourages underwriters and issuers to self-report and remedy wrongdoing in exchange for favorable settlement terms is a novel strategy for dealing with this issue, and assessing its effectiveness is especially relevant to the SEC. Our results suggest that, contrary to the SEC's expectations, the self-reporting initiative exacerbated the problem it set out to fix. In this regard, our results echo prior findings from the tax literature, which suggest that amnesty for non-compliant individuals and firms can subsequently lead to lower overall tax receipts (e.g., Baer et al., 2008; Shevlin et al., 2017).[9]

Finally, we provide evidence on the underwriter's role in issuers' continuing disclosure compliance. Although Rule 15c2-12 attributes a crucial role to underwriters in negotiating the continuing disclosure agreement and evaluating issuers' ability to honor such agreements, we know very little about the underwriter's influence on their issuers' disclosure decisions after the initial bond offering (e.g., Gillette et al., 2020). Our findings highlight that, in the context of the MCDC initiative, any influence the underwriter may have on the issuer is ultimately not sufficient to improve continuing disclosure compliance.

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[9] However, many significant institutional differences make it unclear whether findings from the tax amnesty literature would carry over to our setting. For example, in contrast to the SEC's objective to increase transparency and "level the playing field" among investors, the IRS' objective is primarily to collect unpaid taxes and raise revenue. Moreover, unreported tax violations are not publicly observable, making it challenging to assess a tax amnesty program's overall effect on compliance.

2   Disclosure Regulation and Enforcement in the Municipal Bond Market

The municipal bond market is notoriously opaque, and given the significant number of retail investors in this market, regulators are keen for disclosure reform (e.g., Zimmerman, 1977; Green et al., 2007; Cuny, 2018). However, constitutional state sovereignty exempts state and local governments from the majority of the provisions in the 1933 and 1934 Securities and Exchange Acts, including requirements to file periodic financial reports. Given these impediments, the SEC has attempted a number of alternative approaches to increasing municipal transparency.

In 1975, Congress created the Municipal Securities Rulemaking Board (MSRB) and mandated the registration of municipal securities brokers and dealers (SEC, 1994). In 1989, the SEC adopted Rule 15c2-12 in an attempt to regulate municipal issuers indirectly through their underwriters. This rule requires underwriters to ensure that certain financial and operating information is included in the official statements of municipalities' primary bond offering documents and to establish a reasonable belief that these disclosures are truthful and complete. Failure to do so can constitute an anti-fraud provision violation under Section 17(a) of the 1933 Securities Act or Rule 10b-5 of the 1934 Exchange Act.[10]

In 1994, the SEC amended Rule 15c2-12 to further require that underwriters negotiate a continuing disclosure agreement wherein the issuer commits to filing certain annual financial information with the MSRB after the bond offering.[11] The amended rule also requires that underwriters have a reasonable belief that an issuer can and will (prospectively) comply with the continuing disclosure agreement. Such belief should be based on the underwriter's evaluation of the issuer's reporting abilities and a requirement that the issuer attests to its compliance (or lack thereof) with continuing

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[10] The SEC's enforcement capabilities in the municipal market include the authority to file actions for making false, misleading, or incomplete statements or omissions. Liability for violating the anti-fraud provisions attaches not only to the reporting entity (i.e., the municipal issuer) but also potentially to its directors, governing board members, officers, and staff. Underwriters can also be held liable for failing to discover and correct fraudulent statements or omissions. The specific penalties for disclosure violations include fines (municipalities have paid fines up to $200,000 and individuals up to $80,000), injunctions from participating in future bond offerings, and disbarment from the securities industry (Feyer et al., 2018).

[11] More specifically, the rule requires issuers to commit to filing annual financial information and certain material event notices, but does not specify the nature or quality of this information. The type of information required (and whether it requires an audit) is negotiated in the continuing disclosure agreement.

disclosure commitments made within the previous five years (SEC, 2014).[12]

Despite these attempts, continuing disclosure in the municipal market remained persistently low throughout the early 2000s (e.g., Schmitt, 2011).[13] Yet, municipal default rates were also low during this period, and there was little explicit political or economic interest in overhauling municipal disclosure rules. The situation changed in the aftermath of the 2008-2009 financial crisis. During this period, many municipalities suffered losses and the abatement of municipal bond insurance led to an escalation of municipal credit risk. By 2010, most municipal bond insurers had stopped writing new policies (e.g., Cuny, 2016). From 2007 to 2017, default rates in the municipal market more than doubled, with more than 45 defaults during that span (a similar number as in the previous 40 years). Although defaults among general obligation bonds, whose servicing is tied to municipal tax revenues, remain rare (with Detroit and Puerto Rico being notable exceptions), default rates for revenue bonds whose payments are tied to the revenue stream of specific underlying capital projects (commonly in the healthcare, housing, and public education sectors) became significantly more common (Moody's, 2017).

After the financial crisis, the SEC renewed its efforts to improve municipal transparency. In mid-2009, the SEC implemented an online repository for financial statements through the MSRB (EMMA). The Dodd-Frank Act of 2010 established a stand-alone municipal securities office at the SEC and gave the SEC the ability to levy civil fines in administrative proceedings against issuers. In 2010, the SEC initiated an extensive review of the municipal market. This review culminated in the SEC's August 2012 Municipal Market Report, which raised significant concerns about issuers' noncompliance with continuing disclosure and acknowledged that investors would

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[12] The SEC explicitly states that this rule was intended to incentivize issuers to provide continuing disclosures: "An underwriter's obligation to have a reasonable basis to believe that the key representations in a final official statement are true and accurate extends to an issuer's representations concerning past compliance with disclosure obligations. Indeed, this provision of Rule 15c2-12 was specifically intended to serve as an incentive for issuers to comply with their undertakings to provide disclosures in the secondary market for municipal securities, and also assists underwriters and others in assessing the reliability of the issuer's disclosure representations" (SEC, 2014).

[13] Potential explanations include the relatively limited resources of many municipalities and countervailing political incentives. For example, Patrick (2010) documents that many small governments are staffed by part-time municipal secretaries with limited bookkeeping and accounting experience. Abramova et al. (2021) show that in California approximately 20% of municipalities do not have a position dedicated to the preparation of financial statements and that this lack of expertise leads to lower-quality financial reporting. Several papers show that political incentives to retain power can lead municipalities to withhold disclosure (e.g., Brender, 2003; Kido et al., 2012; Cuny, 2016).

(perhaps) be better served if the SEC had the authority to mandate municipal disclosure. In 2013, the SEC charged two municipalities and one underwriter for falsely claiming they had complied with continuing disclosures in their bond offering documents, when in fact they had never filed a financial statement.[14] Despite the SEC's historical leniency in enforcing Rule 15c2-12, the Commission appeared ready to ramp up enforcement efforts and initiate significant reform in the municipal bond market (SEC, 2014).[15]

In March 2014, the SEC announced the Municipalities Continuing Disclosure Cooperation (MCDC) Initiative. The MCDC granted lenient settlement terms to municipal debt issuers and underwriters that voluntarily self-reported continuing disclosure violations. As noted above, Rule 15c2-12 requires that underwriters negotiate a continuing disclosure agreement at the time of the bond offering. As part of this agreement, the issuer must attest to, and the underwriter must verify, the issuer's past compliance (or lack thereof) with continuing disclosure commitments made within the previous five years. Under the MCDC initiative, the SEC offered standardized settlement terms to municipal bond issuers and underwriters who self-reported making inaccurate statements relating to prior compliance with this requirement (i.e., for violations of the anti-fraud provisions).[16]

Given that continuing disclosure violations in the municipal debt market are publicly observable (via EMMA), conceivably, the SEC could have instead directly pursued enforcement actions against all non-compliant issuers. However, municipalities are not-for-profit entities operating for the benefit of local residents. Despite the SEC's desire to maintain transparency and investor con-

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[14] The City of Harrisburg, Pennsylvania was charged for failing to disclose material information about its dire financial condition and for not complying with its continuing disclosure agreements. West Clark Community Schools in Indiana stated in an official statement that it had complied with all prior continuing disclosure agreements when it had, in fact, never filed an annual financial report. Both entities were required to implement policies to avoid future violations. The SEC also charged West Clark's underwriter, City Securities, and its head of public finance, Randy Ruhl, for misconduct. City Securities paid a substantial fine and Ruhl was disbarred (Feyer et al., 2018).

[15] In a 2009 speech, SEC Commissioner Elisse Walter stated: "I would like to turn to a consideration of the continuing legitimacy of the exemption for municipal securities under the 33 and 34 Acts. In my view, the rationales [that are typically given for affording special treatment to municipal securities] are no longer compelling. [...] I believe that the exemptions for municipal securities should be removed from the 33 and 34 Acts and the Tower Amendment should be repealed" (SEC, 2009). The Tower Amendment of 1975 prohibits the SEC from requiring municipalities to furnish any information to the commission either before or after the sale of securities.

[16] In its announcement, the SEC referred to recent evidence of widespread lack of continuing disclosure compliance as its motivation behind the initiative: "[...] as highlighted in the Commission's August 2012 Municipal Market Report, there is significant concern that many issuers have not been complying with their obligation to file continuing disclosure documents and that federal securities law violations involving false statements concerning such compliance may be widespread" (SEC, 2014).

fidence in this market, pursuing punitive enforcement actions against non-compliant issuers whose costs would ultimately be borne by the municipality's residents might be politically undesirable. A self-reporting approach gives the SEC an opportunity to emphasize to issuers the importance of complying with their continuing disclosure obligations without imposing harsh penalties.[17]

Consistent with an approach aimed at educating issuers and underwriters about their compliance obligations, the MCDC's settlement terms promised reduced penalties and required all participants to cease and desist from any future violations. Although no monetary penalties were levied against issuers, they were expected to update delinquent filings and implement procedures and training regarding continuing disclosure obligations. For underwriters, the MCDC prescribed a specific (but low) penalty amount based on the underwriter's total 2013 revenue (and capped at $500,000). Underwriters were also expected to retain an independent consultant to review continuing disclosure due diligence procedures and implement any resulting recommendations. The MCDC announcement warned that these settlement terms would not apply to eligible issuers and underwriters that did not self-report during the amnesty window, but did not specify what the penalties for non-participation would be (SEC, 2014). In fact, after the MCDC enforcement sweep ended in 2016, between 2016 and 2018, the SEC charged only a single issuer and three underwriters for continuing-disclosure-related violations of the anti-fraud provisions (SEC, 2020).

3 Participation in the MCDC Initiative

In this section, we examine the characteristics of municipal bond issuers and underwriters that participated in the MCDC initiative. The MCDC provided issuers and underwriters with known misstatements in their bond offering documents an opportunity to avoid more punitive penalties, giving reason to believe that the MCDC initiative could be highly subscribed. However, the decision to participate in the MCDC came with costly settlement conditions, increased regulatory scrutiny,

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[17] This approach is similar to tax amnesty programs, which have been aimed primarily at educating citizens about their tax-paying duties rather than (or before) imposing harsh penalties. For example, the Streamlined Foreign Offshore Procedures is a tax amnesty program available to U.S. taxpayers who did not file tax returns related to offshore accounts without willful conduct (i.e., because they were unaware of their obligations). Under the program, participants can amend up to three years of tax returns without incurring any late filing or payment penalties. See https://www.irs.gov/individuals/international-taxpayers/u-s-taxpayers-residing-outside-the-united-states.

and potential reputation damage. Issuers and underwriters must weigh these costs against the expected enforcement risk they face if they do not participate.

Economic theory predicts that a credible threat of ex-post enforcement is likely necessary for a self-reporting program to have a meaningful impact on compliance (e.g., Kaplow and Shavell, 1994), suggesting that the risk of not participating in the MCDC was likely the greatest for the highest visibility targets with the most to lose, such as large underwriters and prominent issuers (e.g., Kedia and Rajgopal, 2011). However, although the SEC threatened to enforce harsher penalties for non-compliance after the MCDC ended, they did not make clear what these penalties would be or how actively they would pursue enforcement actions. Given the SEC's historical leniency and resource constraints, municipal participants could justifiably have been skeptical of the seriousness of this threat, making it unclear whether municipal entities would perceive there to be a credible threat from not participating.

3.1 Sample and Variable Measurement

The MCDC's self-reporting period began March 10th, 2014 for both underwriters and issuers. It ended on September 10th, 2014 for underwriters and on December 1st, 2014 for issuers. Municipal disclosure data became available on the MSRB's Electronic Municipal Market Access (EMMA) platform (similar to the SEC's EDGAR platform) in July 2009. We begin our sample on March 1, 2010 to ensure that we have four full years of disclosure data leading up to the MCDC initiative, where each year runs from March 1 to February 28.[18] Our sample includes issuers required to comply with continuing disclosure during at least one of these four years and their underwriters. Issuers are exempt from filing a continuing disclosure agreement if any of the following conditions are met: (i) the principal amount of the issue is less than \$1 million; (ii) the issuer has aggregate debt outstanding below \$10 million; (iii) the issuer's total outstanding debt has a maturity of less than 18 months; or (iv) the bonds issued have denominations of at least \$100,000 and a maturity of nine months or less.

Table 1 presents the sample of issuers that were "eligible" to participate in the MCDC initia-

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[18] For example, we define 2013 as beginning on March 1, 2013 and ending on February 28, 2014.

tive. We define MCDC-eligible issuers as those with observable violations of the SEC's anti-fraud provisions regarding continuing disclosure compliance in the five years leading up to the initiative. Specifically, eligible issuers 1) issued debt between March 2010 and February 2014, 2) did not provide continuing disclosure in at least one year of the five-year period before that debt issuance, and 3) failed to disclose their past noncompliance in a subsequent offering statement issued before the MCDC initiative (we describe how we identify issuers' acknowledgments of noncompliance in their official statements in Section 4). Our assessment of whether an issuer provides continuing disclosure is based on whether an issuer provides *any* annual financial information (i.e., audited financial statements, Consolidated Annual Financial Reports (CAFRs), or unaudited financial and operating data) in a given reporting period.[19]

Column (1) of Panel A presents descriptive statistics for our total sample of 2,093 MCDC-eligible issuers. Column (2) shows that 73 municipalities, issuing about $20 billion in total debt, participated in the initiative (see Appendix A for a list of all participants and penalties).[20] Although all participating issuers had an underwriter that also participated in the MCDC, so did most non-participating issuers. Column (3) shows that MCDC participants represented a mere 3.5% of our sample of eligible issuers, 3.7% of eligible issuers with participating underwriters, and 6.1% of total debt raised. The small percentage of participating issuers, relative to the number of issuers with a participating underwriter, suggests that the underwriter's participation in the MCDC has little influence on the issuer's participation decision, despite the fact that the underwriter is required by the MCDC to identify its non-compliant issuers (SEC, 2014).

Panel B shows that, compared to non-participating issuers, participating issuers issued significantly more debt (an average of $68 million versus $37 million per year) and issued debt more frequently (1.5 versus 0.9 times per year). The disclosure rate of participating issuers in the pre-

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[19] Technically, Rule 15c2-12 also requires issuers to file (i) a notice in the event of a failure to file the required annual information, and (ii) a notice of the occurrence of one of eleven material events. However, we cannot assess issuers' compliance with the rule's notice filing requirements because we do not observe the specific events that trigger the disclosures. Thus, although our measure likely understates noncompliance with continuing disclosure requirements, we (arguably) capture the most egregious forms of noncompliance.

[20] The SEC's own list identifies 71 participating issuers, which correspond to 73 unique issuer identifiers (six-digit CUSIP) in the Mergent Municipal Bond Securities database. An issuer can have multiple identifiers in the Mergent database.

MCDC period was 67%, indicating that, on average, these issuers failed to file their continuing disclosures in about one out of every three years.[21] This rate is significantly *higher* than for non-participating issuers, indicating that the least compliant issuers opted not to participate in the MCDC initiative.

Panel C examines the characteristics of participating issuers using cross-sectional OLS regressions. Our dependent variable is an indicator equal to one for participating issuers ($ParticipatingIssuer$). Our independent variables include: (i) whether the issuer's underwriter participated in the initiative ($ParticipatingUW$); (ii) issuer size, defined as the natural logarithm of one plus the total dollar amount of debt issued in the pre-MCDC period ($IssuerSize$); and (iii) the issuer's annual pre-MCDC disclosure rate ($DisclosureRate$).

In Columns (1)-(3) of Panel C, we regress $ParticipatingIssuer$ on each characteristic separately. In Column (4), we include all variables in the same regression. Our results are largely consistent with the univariate statistics in Panels A and B. The coefficient estimate for $ParticipatingUW$ is unsurprisingly positive and statistically significant given that all participating issuers had underwriters that also participated in the MCDC initiative. However, the coefficient magnitude is small (0.024), indicating that having a participating underwriter increases the likelihood of issuer participation by only 2.4 percentage points. The coefficient estimate for $IssuerSize$ is also positive and statistically significant, suggesting that larger issuers are more likely to participate. The coefficient estimate for $DisclosureRate$ becomes insignificant after controlling for underwriter participation and issuer size.

In Table 2, we describe the sample of MCDC-eligible underwriters, mirroring the structure of Table 1. We consider an underwriter to be eligible to participate in the MCDC when at least one of its issuers is MCDC-eligible. Column (1) of Panel A presents statistics for the total sample of 148 eligible underwriters, including the entire pool of these underwriters' issuers—both those eligible and non-eligible to participate. These underwriters represent 36,306 total underwriter-issuer pairs and $1.083 trillion of total debt issued. Column (2) shows that 72 underwriters, accounting for

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[21] We measure continuing disclosure as an indicator equal to one if a municipality files any annual financial information (i.e., audited financial statements, CAFRs, or unaudited financial and operating data) in a given reporting period. Thus, the disclosure rate captures the frequency of providing annual disclosure in the pre-MCDC period.

48.6% of all eligible underwriters, participated in the MCDC initiative. Participating underwriters represented 31,691 underwriter-issuer pairs (87.3% of all underwriter-issuer pairs) and issued \$1.027 trillion in total debt (94.9% of all debt issued).[22] Fifty-three participating underwriters also had at least one participating issuer. The high participation rate among underwriters (at least in terms of the total debt issued) contrasts sharply with the virtual non-participation among issuers.

Panel B compares non-participating to participating underwriters. On average, participating underwriters represented significantly more issuers and underwrote more debt. Issuers of participating underwriters had higher disclosure rates than the issuers of eligible non-participating underwriters, again suggesting that the least compliant entities opted not to participate in the MCDC initiative.

Panel C examines the characteristics of participating underwriters using cross-sectional OLS regressions. Our dependent variable is $ParticipatingUW$, a binary indicator variable equal to one for participating underwriters. Similar to Table 1 Panel C, we include the following regressors: (i) whether the underwriter had a participating issuer ($ParticipatingIssuer$); (ii) an index of underwriter size ($UWSize$) (see Appendix B for details on the construction of the index); and (iii) the disclosure rate of the underwriters' issuers ($DisclosureRate$).

The coefficient estimates in Columns (1)-(4) show that each of the three underwriter characteristics is positive and statistically significant (except for $DisclosureRate$ when all three variables are simultaneously included in Column (4)). Larger underwriters and underwriters whose issuers have better continuing disclosure rates are more likely to participate in the MCDC, again suggesting that the entities with the worst disclosure compliance were the least likely to participate. If an issuer participates in the MCDC, that issuer's underwriter is also more likely to participate (by 46.7 percentage points). Participating underwriters represent more issuers than nonparticipating underwriters, making it (mechanically) more likely that they would underwrite most of the participating issuers. Another possible interpretation is that underwriters recognize that an issuer's participation could reveal to the SEC that the underwriter was also in violation of its continuing disclosure requirements.

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[22] This is close to the market share of participating underwriters of nearly 96% reported by the SEC (SEC, 2016).

To further assess the implications of underwriter participation on their issuers, in Panel D, we examine the issuer participation rate by underwriter ($IssuerParticipationRate$). The last row of Table 2 Panel B presents univariate statistics for $IssuerParticipationRate$ and shows that participating underwriters have about 3% more issuers that participate in the MCDC initiative than non-participating underwriters. Similar to the specification in Panel C, we regress $IssuerParticipationRate$ on $ParticipatingUW$, $UWSize$ and $DisclosureRate$. The regression results show that, although $ParticipatingUW$ and $UWSize$ are statistically significant when included individually (but still small in economic magnitude), none of the variables are significant at the 5% level when included simultaneously in Column (4). The absence of any consistent association between issuer and underwriter participation reinforces the takeaway from Table 1 that underwriters have minimal impact on issuer participation.

To summarize, the results in Tables 1 and 2 indicate that, while most large underwriters participated in the MCDC, very few issuers did. Large, high-visibility underwriters, who represent many issuers, are the entities most likely to be on the SEC's enforcement radar and face consequences for not participating in the initiative (e.g., Kedia and Rajgopal, 2011). This suggests large underwriters chose to participate because they perceived there to be a credible threat of penalties for not-participating. The low issuer participation rate is perhaps concerning from the regulator's perspective because many of these issuers had publicly observable violations of the SEC's anti-fraud provisions and underwriters that participated in the initiative. Among both issuers and underwriters, the entities with the lowest compliance were the *least* likely to participate in the program, perhaps suggesting that a more punitive enforcement approach might be necessary to alter the reporting incentives of the worst offenders. In contrast to proponents of a leniency-based approach to enforcement (SEC, 2018b), these results suggest that increasing awareness and understanding of the rules alone was not sufficient to induce widespread participation and that, consistent with economic theory, a credible enforcement threat is necessary to incentivize self-reporting (e.g., Kaplow and Shavell, 1994).

4 Changes in Primary Market Disclosures

Even though few municipal issuers directly participated in the initiative, the MCDC might nonetheless have educated municipalities about their compliance obligations and thereby increased their willingness to adhere to these commitments, as regulators in favor of a light-touch regulatory approach would have hoped (SEC, 2018b). To examine this possibility, we next investigate whether, following the MCDC initiative, issuers are more likely to admit to past continuing disclosure violations in their bond offering documents. Although increasing municipal continuing disclosure was the ultimate objective of the MCDC, given the SEC's jurisdictional limitations, the MCDC sought to achieve this objective by targeting misstatements about past compliance with continuing disclosures in issuers' bond offering documents. Under this approach, the MCDC placed an increased focus on violations of the SEC's anti-fraud provisions, which could have increased issuers' incentives to disclose past noncompliance with continuing disclosure commitments and underwriters' incentives to ensure that they did.

The MCDC initiative ran from March 2014 to September 2014 for underwriters (and December 2014 for issuers). In assessing how issuers' disclosures regarding past noncompliance changed following the MCDC, we focus on the sample of issuers that 1) have at least one bond offering both before and after the MCDC and 2) violated their continuing disclosure agreements in at least one year of the five-year period before that debt issuance (as described in Section 3.1). To identify issuers' acknowledgments of past noncompliance with existing continuing disclosure agreements, we develop a text-based search algorithm trained based on our own reading of approximately 1,000 official statements to identify common phrases used to disclose noncompliance.[23] We define $Disclosed\ Non-Compliance$ as an indicator equal to one if an issuer disclosed past noncompliance with continuing disclosure in their bond offering document, and $Post$ as an indicator equal to one in reporting periods beginning on or after March 1, 2015.

Table 3 column (1) presents results from a simple univariate OLS regression of $Disclosed\ Non-Compliance$ on $Post$. We cluster standard errors at the underwriter level because underwriters

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[23] Tests on several randomly selected samples of 200 bond offering documents consistently show around 95% accuracy rates for our search algorithm.

oversee the bond offering, and disclosures in issuers' bond offering documents are likely correlated within underwriter. The intercept shows that 44% of issuers admitted to not complying with continuing disclosure before the MCDC initiative, indicating that this practice was already fairly common. Notably, the *Post* coefficient estimate indicates that this rate increased by 23 percentage points after the MCDC—an increase of about 50%. In column (2), we include issuer fixed effects to control for time-invariant factors that may affect issuers' disclosure decisions. The coefficient estimate for *Post* remains statistically significant with similar economic magnitude (0.259).

Next, we examine whether the result in column (2) varies across issuers with participating versus non-participating underwriters by adding $ParticipatingUW \times Post$ to the regression. The $ParticipatingUW \times Post$ coefficient estimate in column (3) of 0.140 is statistically significant at the 5% level, indicating that the increase in disclosure of past noncompliance is significantly greater among issuers with participating underwriters.[24]

Although primarily descriptive in nature, these results provide evidence of an increase in issuer admissions of past noncompliance in their bond offering documents after the MCDC specifically targeted this issue. Our results are also consistent with high-profile underwriters perceiving a realistic possibility of punitive post-MCDC enforcement action and accordingly improving their oversight of issuers' offering statements (i.e., these underwriters sought to mitigate the risk of SEC enforcement by avoiding anti-fraud provision violations in issuers' primary market disclosures).

5 Effect of the MCDC Initiative on Continuing Disclosure

We now turn to the SEC's primary concern—the MCDC's impact on future continuing-disclosure compliance. Even though few municipal issuers directly participated in the MCDC, most large underwriters did participate and these underwriters represent a substantial proportion of all municipal issuers. Participating underwriters were expected to improve due diligence procedures and enhance their oversight of issuers' continuing disclosure compliance. Consistent with this expectation, the analyses in the previous section suggest that underwriters had an influence on issuers' proper ac-

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[24] The main effect on *ParticipatingUW* is absorbed by issuer fixed effects.

knowledgment of past continuing disclosure violations in their official statements. If underwriters can also influence issuers' disclosure incentives beyond the initial bond offering, or if issuers want to avoid having to publicly acknowledge past disclosure violations in their future official statements, the MCDC could increase municipal continuing disclosure compliance.

Even absent an increase in underwriter oversight, the MCDC could have had a positive effect on disclosure simply by increasing issuers' awareness of the existence and importance of their disclosure obligations. Many municipal issuers are relatively financially unsophisticated. For example, Patrick (2010) documents that many small governments are staffed by part-time municipal secretaries with limited bookkeeping and accounting experience. Similarly, Abramova et al. (2021) document that about 20% of California's municipalities do not even have a position dedicated to financial reporting. Proponents of more lenient enforcement approaches hope that simply better-educating entities about their obligations would improve compliance (SEC, 2018b).

Yet, there are also reasons to be skeptical of the MCDC's impact on issuers' continuing disclosure compliance. Even if underwriters substantively implemented the MCDC's recommended remediation procedures, they cannot directly influence issuers' disclosures after the initial offering. At best, the underwriter can threaten to recuse themselves from future underwritings if the issuer fails to comply with the continuing disclosure agreement. But even then, such a threat might not be credible given the underwriter's expected loss in revenues from refusing a client.

Moreover, by revealing the weakness of the existing regulatory regime, the MCDC could even lead to a decrease in continuing disclosure compliance (e.g., Shevlin et al., 2017). Given the MCDC's focus on misstatements in bond offering documents, issuers might realize that all the SEC can do (and intends to do) is force them to admit to past continuing disclosure violations. Observing the significant increase in the recognition of past continuing disclosure violations could also make it apparent to issuers that many municipalities do not comply with their continuing disclosure agreements. Coupled with the lack of punitive retaliation against the many eligible issuers that did not self-report and implement remediation procedures to improve continuing disclosure after the end of the MCDC self-reporting period, this could exacerbate skepticism regarding the SEC's

enforcement capabilities and intentions, ultimately leading to a decrease in continuing disclosure compliance.

5.1 Sample and Variable Measurement

To assess how the MCDC initiative affects municipal continuing disclosure, we compare the change in continuing disclosure for issuers subject to disclosure requirements (i.e., "treated" issuers) to issuers not subject to the requirements, but who might disclose voluntarily (i.e., "control" issuers). Although smaller issuers are typically exempt from continuing disclosure obligations under Rule 15c2-12 (see Section 2 for details), many of these exempt issuers provide continuing disclosures voluntarily to meet investor demands, signal credit quality, or for political reasons (e.g., Cuny, 2016; Gillette et al., 2020).

Although there are clearly economic differences between mandatory and voluntary disclosing issuers, the requirement to file continuing disclosure is primarily determined by the size of an issuer's bond issuance, current debt outstanding, and length of bond maturity, all of which we control for in our regression analyses. Conditional on these factors, it is arguably reasonable to assume that the two groups will respond similarly to capital-market-based changes in the disclosure environment (e.g., investor demand). Voluntary disclosers could thus provide a reasonable benchmark for general economic trends in disclosure compliance—a conjecture that we assess more formally in our analysis of pre-MCDC disclosure trends and other robustness tests, as described below.

The MCDC initiative ran from March 2014 to September 2014 for underwriters (and December 2014 for issuers). As in our primary market disclosure analyses (Section 4), we define March 1, 2014 – February 28, 2015, as the MCDC event window. For our analysis, we focus on a nine-year window beginning four years before and ending four years after the MCDC initiative (i.e., from March 1, 2010 - February 28, 2019) to allow ample time to observe disclosure trends before and after the initiative. We define our post-event period indicator, $Post$, as equal to one in reporting periods beginning on or after March 1, 2015.

To construct our sample, we start with municipalities that issued bonds between March 2005

and February 2019. To alleviate potential concerns related to underwriter selection effects (e.g., issuers switching underwriters in anticipation of the MCDC), we require issuers to consistently use the same underwriter prior to the initiative. To ensure that we include active underwriters, we require that underwriters have been involved in an issuer's bond offering within the past ten years. After requiring non-missing control variables and dropping fixed effect singletons from our baseline specification (described below), this procedure results in a sample of 81,503 observations (46,207 treated and 35,296 control).

Our measure of continuing disclosure compliance is based on issuers' provision of annual financial information, as required by Rule 15c2-12. We define $Disclosure$ as an indicator equal to one if a municipality files any annual financial information (i.e., audited financial statements, Consolidated Annual Financial Reports (CAFRs), or unaudited financial and operating data) in a given reporting period.

We include several control variables that are likely correlated with municipal disclosure and the assignment of observations to the treatment and control groups. First, we define an indicator equal to one when a municipality issues bonds in a given reporting period ($Issue$). Issuers are more likely to disclose when they raise debt because their offering statements include financial information they can use in the continuing disclosure filings pertaining to their other bonds outstanding (e.g., Gillette et al., 2020). Second, we compute the natural logarithm of one plus the total amount of bonds issued ($LogAmountIssued$) because municipalities also tend to be more transparent when they issue larger amounts of debt (e.g., Gore et al., 2004). Third, we compute the percentage of callable bonds issued in a given reporting period ($\%CallableBonds$). Callable bonds tend to be issued by municipalities with higher information asymmetry, who benefit from the option to refinance at a lower interest rate or better covenant terms if their financial situation improves (Banko and Zhou, 2010; Green, 2019). Fourth, we compute the percentage of General Obligation (GO) bonds issued in a given reporting period ($\%GOBonds$). GO bonds have lower risk (because they are backed by the full faith and credit of the State), which likely influences issuers' disclosure incentives. Fifth, we include the natural logarithm of one plus the amount of debt maturing in the following year,

$Log(MaturityAmt)$, which captures issuers' debt refinancing incentives. Finally, we control for the shortest maturity of the issuer's bonds measured in years ($MinMaturity$), which reflects the issuer's short-term liquidity needs. We winsorize all continuous variables at the top and bottom 1% levels.

Table 4 Panel A presents descriptive statistics. About 70.6% of issuers file annual financial information with the MSRB.[25] About 56.7% of issuer-years are obligated to comply with continuing disclosure requirements, and about 19.0% of issuer-years have a bond issuance. The average annual bond issuance is $4.4 million and the average minimum bond maturity is 1.5 years.

Panel B compares issuer characteristics between the treatment and control groups. As expected, there is a stark difference in the rate of disclosure between our treatment and control groups. Issuers that are obligated to comply with continuing disclosure disclose about 85.1% of the time, while the disclosure rate is about 51.6% for voluntary disclosers. Treated issuers also tend to issue greater amounts of debt, issue debt more frequently, and are more likely to issue callable bonds and GO bonds.

5.2   Research Design and Results

We assess the effect of the MCDC initiative on issuers' provision of continuing disclosure using the following difference-in-differences OLS model:

$$Disclosure_{i,t} = \beta_1 Treated_i \times Post_t + \beta_2 Treated_i + \beta_3 Post_t + \Gamma' Controls_{i,t} + FE + \epsilon_{i,t}, \qquad (1)$$

where $Treated_i$ is an indicator for issuer-years that belong to the treatment group, and $Post_t$ is calculated as defined in Section 5.1. $Controls_{it}$ represents the vector of control variables discussed in Section 5.1, and FE represents various sets of fixed effects. We cluster standard errors at the underwriter level because issuers' disclosure decisions are likely correlated within underwriter.

Table 5 column (1) presents results from a specification including control variables and issuer and state-year fixed effects. Issuer fixed effects control for time-invariant issuer characteristics likely

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[25] This number is slightly higher than the findings in prior research (around 60%) (e.g., Schmitt, 2011), which is likely due to our selection of more recent bond issues.

to be correlated with disclosure (e.g., municipal-issuer type or location) and absorb the *Treated* main effect. State-year fixed effects control for annual fluctuations in economic conditions at the state level (e.g., unemployment rate, economic development, etc.) and absorb the *Post* main effect. The $Treated \times Post$ coefficient estimate of -0.099 is statistically significant (at the 1% level), indicating that the disclosure rate for treated issuers decreased by approximately 9.9 percentage points after the MCDC initiative, a decline of 12% compared to their pre-MCDC disclosure levels. The coefficient estimates on the control variables are largely consistent with our expectations. For example, the amount of debt issued is positively associated with *Disclosure*, as is the amount of maturing debt.

Column (2) presents results after additionally including underwriter fixed effects, which control for time-invariant underwriter characteristics that could be correlated with issuers' disclosure decisions. The $Treated \times Post$ coefficient estimate declines to -0.074, a decline of approximately 9% for treated issuers compared to their pre-MCDC disclosure levels, but remains negative and statistically significant at the 1% level.

A lingering concern is that, despite our controls and fixed effects, some unidentified contemporaneous event unrelated to the MCDC initiative could affect the treatment and control groups differently and confound our results. Treated issuers are larger and may follow different time trends compared to control issuers (e.g., because of different trends in the frequency of accessing capital markets among issuers of different sizes). To alleviate this concern, in column (3) we include indicators for each quintile of debt issued in the pre-MCDC period interacted with year indicators ($IssueAmount \times YearFE$). In this specification, the variation identifying the $Treated \times Post$ coefficient comes from differences in *Disclosure* between treatment and control observations within the same issue-size quintile in a given year. The coefficient estimate in this specification (-0.072) is very similar to column (3), suggesting that any time-varying omitted variable that is correlated with issuer size is unlikely to affect our inferences. We use column (3) as our baseline specification in subsequent tests.

To assess the reasonableness of the parallel-trends assumption, Figure 1 maps out the estimated

treatment effect from our baseline specification over time by replacing the $Treated \times Post$ interaction with separate interactions between $Treated$ and each of the years in our sample, except for 2013/14 (which serves as the benchmark). In the pre-period, the coefficient estimates are close to zero and statistically insignificant, providing additional assurance that the treatment (i.e., mandatory disclosers) and the control group (i.e., voluntary disclosers) respond similarly to common shocks to the disclosure environment. The treatment effect is negative and statistically significant in all periods after the start of the initiative in March 2014, suggesting that the effect of the MCDC was immediate and persistent.

Overall, contrary to the SEC's alleged intent, the results in Table 5 provide consistent evidence that continuing disclosure rates among treated issuers declined significantly after the MCDC initiative, suggesting that instead of educating issuers about the importance of their compliance obligations, the MCDC instead revealed the limitations of the SEC's enforcement capabilities (or intentions). The low participation rates among eligible issuers (see Table 1) and lack of punitive retaliation against non-participants after the end of the MCDC self-reporting period also likely exacerbated skepticism regarding the SEC's enforcement capabilities, perhaps leading entities to further lower their expectations of the costs of noncompliance.

5.3 Sensitivity Analyses

5.3.1 Alternative Specifications

In Table 6, we perform several sensitivity tests to mitigate the concern that unrelated contemporaneous events may affect our results.

In column (1) of Panel A, we add state-sector-issue amount quintile-year fixed effects to our baseline specification. A bond's sector indicates the main purpose for which the bond was issued (across 51 possible categories), including hospital, water and sewage, housing, and general purpose. These fixed effects control for factors that vary over time and bond sector (e.g., different trends in the frequency of accessing the capital market among issuers from different sectors) within a given state and issue amount-quintile group. The coefficient estimate of -0.061 remains comparable to our

baseline result of -0.072 in Table 5 column (3), suggesting that any time-varying omitted variable that is correlated with an issuer's bond sector within a given state and issue amount-quintile is unlikely to affect our inferences.

In column (2), we estimate our baseline specification after interacting $Post$ with all the control variables. Changes in the disclosure rate of treated issuers, relative to that of control issuers, could reflect changes in the way issuers respond to capital market incentives around the MCDC initiative. Interacting our control variables with $Post$ alleviates the concern that such changes drive our findings. The coefficient estimate of -0.082 is similar to the coefficient in our baseline specification.

In column (3), we use entropy balancing to construct a matched sample of treated and control issuers based on the issuer characteristics (measured prior to the MCDC initiative) that comprise our control variables in Table 5). Consistent with an effective match, Panel B shows no significant differences in means for any of the issuer characteristics between the treated and control groups. Column (3) of Panel A reports results from estimating our baseline specification on the entropy-balanced sample. We continue to find a negative and significant coefficient on $Treated \times Post$. The economic magnitude of -0.069 is again similar to that in our baseline specification.

5.3.2 Concurrent Regulations of Municipal Advisors and Broker-Dealers

Next, we address the potential concern that concurrent regulatory changes affecting municipal advisors and broker-dealers could affect our inferences. Municipal advisors are hired by some issuers to help coordinate the bond offering process, including evaluating financing options, advising the issuer on the method of sale, hiring the underwriter, and negotiating the bond issue terms (Gillette and Pündrich, 2022). Beginning in 2010, the Dodd-Frank Act required all municipal advisors to formally register with the SEC and file a variety of information about the advisory firm. In 2016, the MSRB established core standards of conduct for municipal advisors (Bergstresser and Luby, 2018). If these changes to municipal advisors' responsibilities indirectly influence issuers' continuing disclosure (Gillette and Pündrich, 2022), these regulatory changes could alter the interpretation of

our results.

To address this concern, in Table 7 column (1), we assess the sensitivity of our results to including municipal advisor-by-year fixed effects. In this specification, the treatment effect is estimated within issuers having the same advisor in a given year, meaning that any advisor-specific changes cannot contribute to our estimation of the treatment effect. Hiring a municipal advisor is voluntary, and our sample drops to 32,005 observations because many issuers opt not to retain one. The coefficient estimate of -0.081 on $Treated \times Post$ remains statistically and economically significant, suggesting that the adoption of new municipal advisor fiduciary requirements in 2016 cannot explain our findings.

Second, in 2014, the MSRB and FINRA adopted new rules that prohibit municipal broker-dealers from charging excessive commissions and require that they make a reasonable effort to obtain a fair price when purchasing or selling securities (MSRB, 2014). If these new rules affect issuers' underwriters, who also frequently act as broker-dealers, they could affect issuers' continuing disclosure compliance (albeit indirectly). In Table 7 column (2), we re-estimate our baseline specification replacing underwriter fixed effects with underwriter-by-year fixed effects. In this specification, the treatment effect is estimated within issuers having the same underwriter in a given year. The loss of underwriters without multiple issuers in a given year (i.e., singletons) reduces our sample to 65,228 observations. The treatment coefficient estimate (-0.082) remains statistically and economically significant, indicating that our results are unaffected by underwriter and broker-dealer rule changes.

5.3.3 Absolute Decline in Disclosure

In Table 8, to mitigate the concern that the observed decline in disclosure among treated issuers could be attributable to an increase in the control group's continuing disclosure levels, we examine whether treated issuers are more likely to decrease disclosure in absolute terms following the MCDC initiative (i.e., as opposed to a decline observable only relative to the control group).

We define $DisclosureDecline$ as an indicator equal to one if an issuer's average continuing

disclosure rate is lower in the period following the MCDC initiative, relative to the pre-MCDC period. We then run a cross-sectional regression of *DisclosureDecline* on changes in our control variables (i.e., differences in average values prior to and following the MCDC initiative). We find that treated issuers are 2.3 percentage points more likely to decrease disclosure in the post-MCDC period compared to the control group. This finding alleviates the possible concern that our results primarily reflect changes in disclosure rates of the control group around the MCDC initiative.

5.4 Cross-sectional Analyses on Participating Entities

In this section, we examine whether the effect of the MCDC depends on whether or not an issuer or their underwriter participated in the initiative. Although we find that treated issuers' overall level of continuing disclosure declined after the MCDC self-reporting period ended, as discussed in Section 2, underwriters and issuers that participated in the initiative were required to update delinquent filings and implement procedures and training regarding continuing disclosure obligations. If these internal control improvements were implemented in good faith, then we expect the MCDC could have a positive (or at least less negative) effect on continuing disclosure for participating entities.

In Table 9 Panel A, we examine how the changes in continuing disclosure documented in Table 5 vary based on whether or not an issuer's underwriter participates in the MCDC by estimating our baseline specification separately for issuers with participating and nonparticipating underwriters. The $Treated \times Post$ coefficients are significantly negative in both regressions and the difference is not statistically different from zero. The fact that disclosure decreases both for issuers with participating and non-participating underwriters casts doubt on underwriters' ability to influence their issuers' compliance with (post-issuance) continuing disclosure requirements.

In Table 9 Panel B, we similarly examine how the results from Table 5 vary based on whether or not an issuer participated in the MCDC. We decompose *Treated* into issuers who participated (*ParticipatingIssuer*) and did not participate in the MCDC (*Non−ParticipatingIssuer*), and interact each variable with *Post*. The $Non-ParticipatingIssuer \times Post$ interaction remains negative (−0.073) and statistically significant at the 1% level. In contrast, the $ParticipatingIssuer \times Post$

interaction term is positive (0.124) and statistically significant at the 10% level, indicating that participating issuers increased their disclosure rate by 12.4 percentage points relative to the control group.

Although the results in Panel B suggest that participating issuers increased continuing disclosure after the MCDC initiative, it is important to recall that Table 1 shows that only 73 issuers participated. So, while knowing that participating issuers increased disclosure can be helpful in understanding what happened when issuers chose to participate in the MCDC, it has little implication for understanding the impact of the initiative on the overall level of continuing disclosure compliance in the municipal bond market. Nonetheless, this result does suggest that, if more issuers had chosen to participate, the MCDC initiative might have had a less negative impact on the overall level of continuing disclosure.

6 Conclusion

Proponents of regulatory leniency initiatives argue that increasing awareness about a regulation's existence and importance can be a more effective way to increase compliance than a direct enforcement approach that relies on costly detection efforts and harsh penalties. But, theory cautions that without a credible ex-post enforcement threat against entities that fail to self-report, leniency initiatives might not only be ineffective but could even lead to lower regulatory compliance. Because the level of misconduct among non-participating entities is typically unobservable, prior research on regulatory self-reporting initiatives can provide only a partial assessment of the policies' effectiveness. We study the impact of the MCDC initiative, the SEC's 2014 municipal bond market self-reporting program, where the observability of the targeted disclosure violations provides us with a novel opportunity to further our understanding of regulatory leniency initiatives' effectiveness.

First, we find that although there was widespread participation among underwriters, the vast majority of municipal issuers did not participate in the MCDC initiative, despite having publicly observable disclosure violations. Perhaps concerningly from the regulator's perspective, among both issuers and underwriters, the entities with the lowest historic compliance were the least likely

to participate. Second, consistent with an improvement in underwriter oversight of the initial bond offering following the MCDC, we find that the official statements were less likely to include false claims regarding past disclosure compliance, particularly for issuers with participating underwriters. Third, contrary to the initiative's primary objective, we find that issuers' compliance with continuing disclosure requirements *decreased* by 9% after the MCDC initiative. The decrease in continuing disclosure is not significantly different for eligible issuers with participating versus non-participating underwriters, suggesting that any influence participating underwriters have on issuers' disclosure decisions is limited to the initial bond offering.

Regulatory leniency is a novel approach to dealing with non-compliance in the municipal bond market, and assessing its effectiveness is especially relevant to the SEC. Taken together, our results suggest that, contrary to the SEC's expectations, the MCDC initiative was not only ineffective but even exacerbated the problem it set out to fix. Our findings also cast doubt on the SEC's ability to effectively regulate municipal issuers given the jurisdictional handicaps they currently face. Rule 15c2-12 attributes a crucial role to underwriters in negotiating the continuing disclosure agreement and evaluating issuers' ability to honor such agreements. Our evidence casts doubt the possibility that underwriters can be effective monitors of issuers' post-bond-offering disclosure compliance. Instead, our findings indicate that underwriters' influence on issuers' regulatory compliance largely ends after the initial offering and is ultimately not sufficient to affect continuing disclosure compliance.

Low-cost enforcement approaches like self-reporting initiatives are appealing in many regulatory contexts where direct enforcement is infeasible or undesirable. Although some of the unique features of the municipal debt market undoubtedly limit the generalizability of our findings, our analyses still provide some important insights that can likely help us understand the effects of other regulatory leniency programs. Foremost, our findings suggest that self-reporting-based approaches are likely to be ineffective absent a credible enforcement threat for non-participants. Without such a threat regulatory leniency could even lead to lower future compliance by revealing a regulator's unwillingness (or inability) to pursue more costly direct enforcement tactics. Policymakers consid-

ering similar approaches should be careful that the leniency initiative is not interpreted as a signal that the regulators are not willing or able to pursue more costly enforcement options.

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Appendix A. List of Entities Participating in the MCDC Initiative

Panel A. Participating Underwriters

Underwriter	Date of Enforcement Action	Penalty Amount ($)
The Baker Group, LP	6/18/15	250,000
B.C. Ziegler and Company	6/18/15	250,000
Benchmark Securities, LLC	6/18/15	100,000
Bernardi Securities, Inc.	6/18/15	100,000
BMO Capital Markets GKST Inc.	6/18/15	250,000
BNY Mellon Capital Markets, LLC	6/18/15	120,000
BOSC, Inc.	6/18/15	250,000
Central States Capital Markets, LLC	6/18/15	60,000
Citigroup Global Markets Inc.	6/18/15	500,000
City Securities Corporation	6/18/15	250,000
Davenport & Company LLC	6/18/15	80,000
Dougherty & Company LLC	6/18/15	250,000
First National Capital Markets, Inc.	6/18/15	100,000
George K. Baum & Company	6/18/15	250,000
Goldman, Sachs & Co.	6/18/15	500,000
Hutchinson, Shockey, Erley & Co.	6/18/15	220,000
J.P. Morgan Securities LLC	6/18/15	500,000
L.J. Hart & Company	6/18/15	100,000
Loop Capital Markets LLC	6/18/15	60,000
Martin Nelson & Co., Inc.	6/18/15	100,000
Merchant Capital, L.L.C.	6/18/15	100,000
Merrill Lynch, Pierce, Fenner & Smith, Incorporated	6/18/15	500,000
Morgan Stanley & Co. LLC	6/18/15	500,000
The Northern Trust Company	6/18/15	60,000
Oppenheimer & Co. Inc.	6/18/15	400,000
Piper Jaffray & Co.	6/18/15	500,000
Raymond James & Associates, Inc.	6/18/15	500,000
RBC Capital Markets, LLC	6/18/15	500,000
Robert W. Baird & Co. Incorporated	6/18/15	500,000
Siebert Brandford Shank & Co., LLC	6/18/15	240,000
Smith Hayes Financial Services Corporation	6/18/15	40,000
Stephens Inc.	6/18/15	400,000
Sterne, Agee & Leach, Inc.	6/18/15	80,000
Stifel, Nicolaus & Company, Inc.	6/18/15	500,000
Wells Nelson & Associates, L.L.C.	6/18/15	100,000
William Blair & Company, L.L.C.	6/18/15	80,000

Appendix A. List of Entities Participating in the MCDC
Initiative (cont'd)

Panel A. Participating Underwriters (cont'd)

Underwriter	Date of Enforcement Action	Penalty Amount ($)
Ameritas Investment Corp.	9/30/15	200,000
BB&T Securities, LLC	9/30/15	200,000
Comerica Securities, Inc.	9/30/15	60,000
Commerce Bank Capital Markets Group	9/30/15	40,000
Country Club Bank	9/30/15	140,000
Crews & Associates, Inc.	9/30/15	250,000
Duncan-Williams, Inc.	9/30/15	250,000
Edward D. Jones & Co., L.P.	9/30/15	100,000
Estrada Hinojosa & Company, Inc.	9/30/15	40,000
Fifth Third Securities, Inc.	9/30/15	20,000
The Frazer Lanier Company, Incorporated	9/30/15	100,000
J.J.B. Hilliard, W.L. Lyons, LLC	9/30/15	420,000
Joe Jolly & Co., Inc.	9/30/15	100,000
Mesirow Financial, Inc.	9/30/15	100,000
Northland Securities, Inc.	9/30/15	220,000
NW Capital Markets Inc.	9/30/15	100,000
PNC Capital Markets LLC	9/30/15	500,000
Prager & Co., LLC	9/30/15	100,000
Ross, Sinclaire & Associates, LLC	9/30/15	220,000
UBS Financial Services, Inc.	9/30/15	480,000
UMB Bank, N.A. Investment Banking Division	9/30/15	420,000
U.S. Bank Municipal Securities Group	9/30/15	60,000
Barclays Capital Inc.	2/2/16	500,000
Boenning & Scattergood, Inc.	2/2/16	250,000
D.A. Davidson & Co.	2/2/16	500,000
First Midstate Incorporated	2/2/16	100,000
Hilltop Securities Inc.	2/2/16	360,000
Janney Montgomery Scott LLC	2/2/16	500,000
Jefferies LLC	2/2/16	500,000
KeyBanc Capital Markets Inc.	2/2/16	440,000
Mitsubishi UFJ Securities (USA), Inc.	2/2/16	20,000
Municipal Capital Markets Group, Inc.	2/2/16	60,000
Roosevelt & Cross, Incorporated	2/2/16	250,000
TD Securities (USA) LLC	2/2/16	500,000
United BankersÕ Bank	2/2/16	160,000
Wells Fargo Bank N.A.	2/2/16	440,000

Appendix A. List of Entities Participating in the MCDC Initiative (cont'd)

Panel B. Participating Issuers

Issuers	State	Date of Enforcement Action
City of Vestavia Hills	Alabama	8/24/16
Board of Education of Madison County	Alabama	8/24/16
North Slope Borough	Alaska	8/24/16
Board of Trustees of Arkansas Tech University	Arkansas	8/24/16
City of Alameda	California	8/24/16
Boulder County	Colorado	8/24/16
Thompson School District No. R2-J	Colorado	8/24/16
Colorado Department of Transportation	Colorado	8/24/16
Lawrence & Memorial Hospital, Inc. and Lawrence & Memorial Corp.	Connecticut	8/24/16
Town of Fairfield, Connecticut	Connecticut	8/24/16
Delaware Transportation Authority	Delaware	8/24/16
Fulton County	Georgia	8/24/16
State of Hawaii	Hawaii	8/24/16
Idaho Housing and Finance Association	Idaho	8/24/16
Palatine Park District	Illinois	8/24/16
Community Unit School District Number 18 (Blue Ridge)	Illinois	8/24/16
Metropolitan Airport Authority of Peoria	Illinois	8/24/16
City of Gary, Indiana	Indiana	8/24/16
Sanitary District of the City of Gary, Indiana	Indiana	8/24/16
City of South Bend, Indiana	Indiana	8/24/16
City of Cedar Rapids	Iowa	8/24/16
City of West Des Moines	Iowa	8/24/16
Unified School District No. 418, McPherson County	Kansas	8/24/16
City of Andover	Kansas	8/24/16
Kentucky Housing Corporation	Kentucky	8/24/16
Electric and Water Plant Board of City of Frankfort	Kentucky	8/24/16
East Ouachita Parish School District of the Parish of Ouachita	Louisiana	8/24/16
Town of York	Maine	8/24/16
Montgomery College	Maryland	8/24/16
Montgomery College Foundation, Inc.	Maryland	8/24/16
City of Chelsea	Massachusetts	8/24/16
County of Berrien	Michigan	8/24/16
State of Minnesota	Minnesota	8/24/16
Lauderdale County	Mississippi	8/24/16

Appendix A. List of Entities Participating in the MCDC Initiative (cont'd)

Panel B. Participating Issuers (cont'd)

Issuers	State	Date of Enforcement Action
Ascension Health Alliance	Missouri	8/24/16
Black Jack Fire Protection District of St. Louis County	Missouri	8/24/16
Blair Oaks R-II School District	Missouri	8/24/16
State of Montana Department of Transportation	Montana	8/24/16
City of Alliance	Nebraska	8/24/16
Southern New Hampshire University	New Hampshire	8/24/16
Borough of Roselle Park in the County of Union	New Jersey	8/24/16
Township of East Brunswick	New Jersey	8/24/16
El Castillo Retirement Residences	New Mexico	8/24/16
The County of Franklin	New York	8/24/16
City of Ithaca	New York	8/24/16
Syracuse University	New York	8/24/16
Westchester County Health Care Corporation	New York	8/24/16
North Carolina Eastern Municipal Power Agency	North Carolina	8/24/16
City of Devils Lake	North Dakota	8/24/16
The Ohio State University	Ohio	8/24/16
City of Nichols Hills	Oklahoma	8/24/16
Oklahoma Housing Finance Agency	Oklahoma	8/24/16
Yukon Municipal Authority, Yukon	Oklahoma	8/24/16
County of Adams	Pennsylvania	8/24/16
Collegium Charter School	Pennsylvania	8/24/16
Hazleton Area School District	Pennsylvania	8/24/16
The Municipal Authority of the City of McKeesport	Pennsylvania	8/24/16
City of Columbia	South Carolina	8/24/16
Town of Hilton Head Island	South Carolina	8/24/16
Tea Area School District 41-5	South Dakota	8/24/16
City of Memphis	Tennessee	8/24/16
Pecos County	Texas	8/24/16
Heber Light & Power Company	Utah	8/24/16
Casella Waste Systems, Inc.	Vermont	8/24/16
Carilion Clinic	Virginia	8/24/16
City of Bainbridge Island	Washington	8/24/16
Public Utility District No. 1 of Whatcom County	Washington	8/24/16
The County Commission of Ohio County	West Virginia	8/24/16
The City of Oconomowoc	Wisconsin	8/24/16
Wyoming Community Development Authority	Wyoming	8/24/16
Westlands Water District	Wyoming	3/9/16

Notes: This table presents the list of municipal bond underwriters (Panel A) and issuers (Panel B) against which SEC brought enforcement actions in conjunction with the MCDC Initiative. See https://www.sec.gov/municipal/municipal-securities-cases-mcdc-initiative for a compilation of the related securities cases and materials.

Appendix B. Underwriter Size Index

Panel A. Principal Component Output

Factor	Eigenvalue	Proportion of the Variation Explained	Cumulative Proportion of the Variation Explained	Size Dimensions	First Principal Component Weights
1st	3.330	0.832	0.832	*LogNumStates*	0.428
2nd	0.529	0.132	0.965	*LogNumIssuers*	0.519
3rd	0.132	0.033	0.998	*LogNumBondIssues*	0.525
4th	0.010	0.002	1.000	*LogAmountIssued*	0.521

Panel B. Correlation Matrix

	UWSize	*LogNumStates*	*LogNumIssuers*	*LogNumBondIssues*	*LogAmountIssued*
UWSize	1				
LogNumStates	0.781	1			
LogNumIssuers	0.947	0.584	1		
LogNumBondIssues	0.959	0.593	0.987	1	
LogAmountIssued	0.951	0.734	0.844	0.879	1

Notes: Panel A presents the output from the principal component analysis used to construct the underwriter size index (*UWSize*). We construct the index as the first principal component of four size-related proxies, measured prior to the MCDC initiative (March 2010 – February 2014): *LogNumStates*, the natural logarithm of one plus the number of states the underwriter operates in; *LogNumIssuers*, the natural logarithm of one plus the number of issuers that utilized the underwriter; *LogNumBondIssues*, the natural logarithm of one plus the number of bonds issued through the underwriter; and *LogAmountIssued*, the natural logarithm of one plus the total dollar amount of bonds issued through the underwriter. Panel B presents correlations between the index and its four components.

Figure 1: Continuing Disclosure Trends for Issuers subject vs. not subject to Continuing Disclosure Requirements around the MCDC Initiative
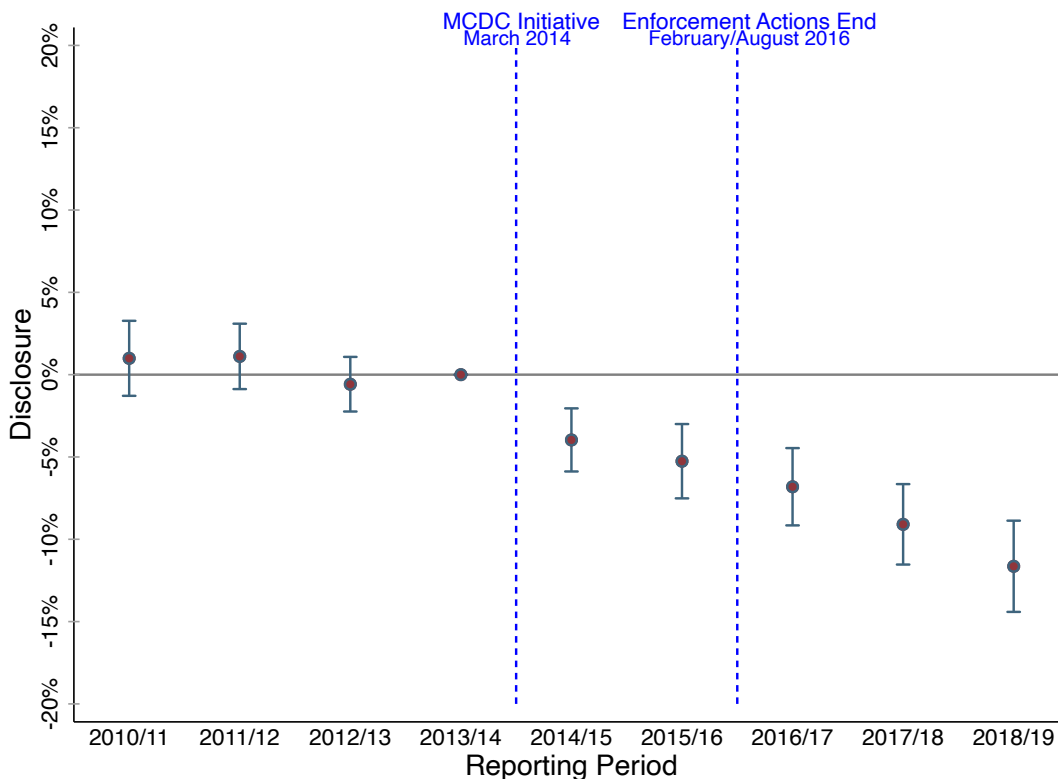
Notes: This figure reports coefficients and 90% confidence intervals for OLS regressions estimating the effect of the MCDC Initiative on the likelihood of providing continuing disclosure for municipal bond issuers subject vs. not subject to continuing disclosure requirements. *Disclosure* is a binary indicator equal to one if an issuer provides at least one annual continuing disclosure during the reporting period. Each reporting period runs from March through February (e.g., reporting period 2014/15 runs from March 1, 2014 through February 28, 2015). We estimate the model in Table 5 Column (3), but interact *Treated* with separate indicators for each reporting period, where 2013/2014 serves as the benchmark period.

Table 1: Characteristics of Eligible Issuers

Panel A. Descriptive Statistics

	Total Eligible Issuers (1)	Participating Issuers (2)	% Participating Issuers/Eligible (3)
N Issuers	2,093	73	3.5%
N Issuers with Participating UWs	1,963	73	3.7%
Total $Amount of Debt Issued (mil. USD)	323,600	19,772	6.1%

Panel B. Sample Differences

	Non-Participating Issuers (1)	Participating Issuers (2)	Difference (3)
Avg $Debt Issued (in millions per year)	37.25	67.71	30.47**
Avg Number of Bond Issues (per year)	0.93	1.51	0.58
Disclosure Rate	0.59	0.67	0.08**

Panel C: Regression Analysis–Issuer Participation

Dependent Variable: *Participating Issuer*	(1)	(2)	(3)	(4)
ParticipatingUW	0.037***			0.024***
	(8.70)			(5.08)
IssuerSize		0.012***		0.011***
		(3.34)		(2.95)
DisclosureRate			0.032**	0.024
			(2.00)	(1.49)
Adjusted R^2	0.002	0.008	0.002	0.010
Observations	2,093	2,093	2,093	2,093

Notes: This table describes the characteristics of municipal bond issuers that participated in the MCDC Initiative vs. a sample of issuers that were eligible to participate but did not. Panel A presents descriptive statistics for our total sample and participating sample of issuers. Panel B contrasts the characteristics of participating and non-participating issuers computed over the four years preceding the MCDC initiative. Panel C presents results for an OLS regression of a binary indicator variable equal to one for participating issuers (*ParticipatingIssuer*) on (i) whether the issuer's underwriter participated in the initiative (*ParticipatingUW*); (ii) the natural logarithm of one plus the dollar amount of debt issued in the pre-MCDC period (*IssuerSize*); and (iii) the issuer's annual pre-MCDC disclosure rate (*DisclosureRate*). *t*-statistics, reported in parentheses, are based on robust standard errors. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels (two-tailed), respectively.

Table 2: Characteristics of Eligible Underwriters

Panel A. Descriptive Statistics

	Total Eligible UWs (1)	Participating UWs (2)	% Participating UWs/Eligible (3)
N Underwriters	148	72	48.6%
N Underwriters with Participating Issuers	59	53	89.8%
Total Number of Issuer-UW Pairs	36,306	31,691	87.3%
Total $Amount of Debt Issued (in millions)	1,083,213	1,027,497	94.9%

Panel B. Sample Differences

	Non-Participating UWs (1)	Participating UWs (2)	Difference (3)
Avg Number of Issuers (per year)	20.08	141.73	121.65***
Avg $Debt Issued (in millions per year)	337.23	6,694.89	6,357.65***
Disclosure Rate	0.83	0.90	0.06**
Issuer Participation Rate	0.02	0.04	0.03***

Panel C: Regression Analysis–Underwriter Participation

Dependent Variable: $ParticipatingUW$	(1)	(2)	(3)	(4)
$ParticipatingIssuer$	0.685*** (11.61)			0.467*** (4.92)
$UWSize$		0.172*** (16.52)		0.089*** (4.49)
$DisclosureRate$			0.489*** (3.45)	-0.001 (-0.01)
Adjusted R^2	0.446	0.386	0.023	0.500
Observations	148	148	148	148

Table 2: Characteristics of Eligible Underwriters (cont'd)

Panel D: Regression Analysis–Issuer Participation Rate by Underwriter

Dependent Variable: Issuer Participation Rate	(1)	(2)	(3)	(4)
$ParticipatingUW$	0.025***			0.020*
	(3.40)			(1.69)
$UWSize$		0.006***		0.002
		(4.62)		(0.89)
$DisclosureRate$			0.020	0.002
			(1.08)	(0.13)
Adjusted R^2	0.067	0.045	-0.001	0.059
Observations	148	148	148	148

Notes: This table describes the characteristics of municipal bond underwriters that participated in the MCDC Initiative vs. a sample of underwriters that were eligible to participate but did not. An underwriter is eligible to participate in the MCDC initiative if at least one of its issuers is eligible to participate. Panel A presents descriptive statistics for our total sample and participating sample of underwriters. Panel B contrasts the characteristics of participating and non-participating underwriters computed over the four years preceding the MCDC initiative. Panel C presents results for an OLS regression of a binary indicator variable equal to one for participating underwriters ($ParticipatingUW$) on (i) an indicator for whether the underwriter has an issuer that participated in the MCDC Initiative ($ParticipatingIssuer$); (ii) an index of underwriter size defined in Appendix B ($UWSize$); and (iii) the pre-MCDC disclosure rate of the underwriter's issuers ($DisclosureRate$). Panel D presents results for an OLS regression of issuer participation rate (by underwriter) on $ParticipatingUW$, $UWSize$, and $DisclosureRate$. t-statistics, reported in parentheses, are based on robust standard errors. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels (two-tailed), respectively.

Table 3: Primary Market Disclosure Analysis

Dependent Variable: Disclosed Non-Compliance	(1)	(2)	(3)
$Participating\,UW \times Post$			0.140**
			(2.29)
$Post$	0.225***	0.259***	0.123**
	(18.60)	(18.87)	(2.06)
$Intercept$	0.443***		
	(44.65)		
Adjusted R^2	0.050	0.406	0.407
Observations	7,421	7,421	7,421
Issuer FE	No	Yes	Yes

Notes: This table presents the coefficients of OLS regressions estimating the post-MCDC Initiative change in non-compliant issuers' likelihood of disclosing their past non-compliance with continuing disclosure in their bond offering documents. Column (1) presents results from a regression of $Disclosed\,Non - Compliance$, a binary indicator equal to one if an issuer disclosed past noncompliance with continuing disclosure in their bond offering document, and $Post$, a binary indicator equal to one for reporting periods beginning on or after March 1, 2015. Column (2) adds $Issuer\,FE$. Column (3) adds $Participating\,UW \times Post$. t-statistics, reported in parentheses, are based on standard errors clustered by underwriter. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels (two-tailed), respectively.

Table 4: Descriptive Statistics – Effect of MCDC on Continuing Disclosure

Panel A. Descriptive Statistics

	N	Mean	SD	p10	p25	p50	p75	p90
Disclosure	81,503	0.706	0.455	0.000	0.000	1.000	1.000	1.000
Treated	81,503	0.567	0.496	0.000	0.000	1.000	1.000	1.000
ParticipatingUW	81,503	0.859	0.348	0.000	1.000	1.000	1.000	1.000
Post	81,503	0.431	0.495	0.000	0.000	0.000	1.000	1.000
Issue	81,503	0.190	0.392	0.000	0.000	0.000	0.000	1.000
LogAmountIssued	81,503	0.401	0.980	0.000	0.000	0.000	0.000	1.889
AmountIssued	81,503	4.356	50.526	0.000	0.000	0.000	0.000	5.615
%CallableBonds	81,503	0.116	0.320	0.000	0.000	0.000	0.000	1.000
%GOBonds	81,503	0.078	0.208	0.000	0.000	0.000	0.000	0.400
LogMaturityAmt$_{t+1}$	81,503	0.717	0.808	0.000	0.135	0.441	1.030	1.821
MaturityAmt$_{t+1}$	81,503	3.247	35.214	0.000	0.145	0.555	1.800	5.175
MinMaturity	81,503	1.500	3.915	0.044	0.255	0.507	0.759	2.005

Panel B. Characteristics of Treated vs. Control Issuers

	Treated = 1				*Treated* = 0				Diff. in Means	p-value
	N	Mean	SD	Median	N	Mean	SD	Median		
Disclosure	46,207	0.851	0.356	1.000	35,296	0.516	0.500	1.000	0.335	< 0.001
Issue	46,207	0.221	0.415	0.000	35,296	0.150	0.358	0.000	0.070	< 0.001
LogAmountIssued	46,207	0.568	1.187	0.000	35,296	0.183	0.539	0.000	0.385	< 0.001
AmountIssued	46,207	6.931	65.328	0.000	35,296	0.986	16.965	0.000	5.945	< 0.001
%CallableBonds	46,207	0.090	0.219	0.000	35,296	0.061	0.191	0.000	0.029	< 0.001
%GOBonds	46,207	0.130	0.335	0.000	35,296	0.098	0.297	0.000	0.032	< 0.001
LogMaturityAmt$_{t+1}$	46,207	1.081	0.876	0.884	35,296	0.240	0.318	0.166	0.841	< 0.001
MaturityAmt$_{t+1}$	46,207	5.219	45.247	1.420	35,296	0.666	13.098	0.180	4.553	< 0.001
MinMaturity	46,207	1.209	3.294	0.460	35,296	1.880	4.576	0.510	-0.671	< 0.001

Notes: Panel A of this table presents descriptive statistics for our difference-in-differences regression sample. Our sample runs from March 1, 2010 through February 28, 2019. Each reporting period runs from March through February (e.g., reporting period 2014/15 runs from March 1, 2014 through February 28, 2015). *Disclosure* is a binary indicator equal to one if an issuer provides at least one annual continuing disclosure in the reporting period. *Treated* is a binary indicator equal to one if the issuer is subject to continuing disclosure requirements over the four years leading up to the MCDC initiative. *Post* is a binary indicator equal to one for reporting periods beginning on or after March 1, 2015. *Issue* is a binary indicator equal to one for bond issuance in the reporting period. *LogAmountIssued* is the natural logarithm of one plus the dollar amount of bonds issued in the reporting period. *AmountIssued* is the dollar amount of bonds issued in the reporting period (in millions). *%CallableBonds* is the percentage of callable bonds issued in the reporting period. *%GOBonds* is the percentage of general obligation bonds issued in the reporting period. *LogMaturityAmt$_{t+1}$* is the natural logarithm of one plus the dollar amount of bonds due in the following reporting period. *MinMaturity* is the issuer's shortest bond maturity (in years) among its bonds outstanding in the reporting period. Panel B contrasts the sample characteristics of treated vs. control issuers over the sample period. *p*-values, reported in the last column, are based on standard errors clustered by underwriter.

Table 5: Difference-in-Differences Analysis – Effect of MCDC on Continuing Disclosure

Dependent Variable: *Disclosure*	(1)	(2)	(3)
Treated × Post	-0.099***	-0.074***	-0.072***
	(-11.15)	(-7.73)	(-6.46)
Controls:			
Issue	0.004	0.025**	0.027**
	(0.34)	(2.01)	(2.23)
LogAmountIssued	0.009***	0.008**	0.008**
	(3.15)	(2.55)	(2.56)
%CallableBonds	0.026**	0.022**	0.021*
	(2.45)	(2.05)	(1.93)
%GOBonds	0.008	-0.002	-0.002
	(0.78)	(-0.13)	(-0.19)
LogMaturityAmt$_{t+1}$	0.024***	0.012***	0.013***
	(6.09)	(2.87)	(3.21)
MinMaturity$_{t+1}$	-0.003*	-0.003*	-0.003*
	(-1.79)	(-1.74)	(-1.78)
Adjusted R^2	0.565	0.584	0.586
Observations	81,503	81,503	81,503
State × Year FE	Yes	Yes	Yes
Issuer FE	Yes	Yes	Yes
Underwriter FE	No	Yes	Yes
IssueAmount × Year FE	No	No	Yes

Notes: This table presents the coefficients of OLS difference-in-differences regressions estimating the effect of the MCDC Initiative on municipal bond issuers' likelihood of providing continuing disclosure. Column (1) presents results from a regression of *Disclosure* on *Treated × Post*, the control variables defined in Table 4, *State × YearFE* and *IssuerFE*. Column (2) adds *UnderwriterFE* and column (3) adds *IssueAmount × YearFE* (issuer-size-quintile by year fixed effects). *t*-statistics, reported in parentheses, are based on standard errors clustered by underwriter. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels (two-tailed), respectively. All variables are defined in Table 4.

Table 6: Robustness to Alternative Regression Specifications

Panel A. Robustness to Alternative Regression Specifications

Dependent Variable: Disclosure	(1)	(2)	(3)
$Treated \times Post$	-0.061***	-0.082***	-0.069***
	(-5.01)	(-6.80)	(-3.78)
Adjusted R^2	0.602	0.587	0.671
Observations	75,856	81,503	80,148
Controls	Yes	Yes	Yes
Controls $\times$ Post	No	Yes	No
State $\times$ Year FE	No	Yes	Yes
Issuer FE	Yes	Yes	Yes
Underwriter FE	Yes	Yes	Yes
IssueAmount $\times$ Year FE	No	Yes	Yes
State $\times$ Sector $\times$ IssueAmount $\times$ Year FE	Yes	No	No

Panel B. Covariate Balance for Matched Sample Analysis (in Panel A Column (3))

	$Treated = 0$		$Treated = 1$		Diff. in Means	p-value
	Mean	SD	Mean	SD		
Issue	0.209	0.354	0.209	0.243	0.000	0.998
LogAmountIssued	0.510	1.227	0.510	0.655	0.000	0.998
%CallableBonds	0.084	0.227	0.084	0.129	0.000	0.999
%GOBonds	0.124	0.253	0.124	0.220	0.000	0.999
$LogMaturityAmt_{t+1}$	0.972	0.988	0.972	0.772	0.000	0.997
MinMaturity	1.384	2.771	1.384	3.681	-0.001	0.989

Notes: Panel A examines three alternative specifications of our baseline regression estimated in Table 5, column (3). Column (1) presents a specification including $State \times Sector \times IssueAmount \times YearFE$. Column (2) presents a specification that controls for the interactive effects of our control variables with $Post$. Column (3) reports results from estimating our baseline specification on the entropy balanced sample. Panel B reports the covariate balance for the entropy-balanced sample in Panel A column (3). t-statistics, reported in parentheses, are based on standard errors clustered by underwriter. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels (two-tailed), respectively. All variables are defined in Table 4.

Table 7: Robustness to Concurrent Regulations of Municipal Advisors and Broker-Dealers

Dependent Variable: Disclosure	(1)	(2)
$Treated \times Post$	-0.081***	-0.082***
	(-4.94)	(-6.59)
Adjusted R^2	0.618	0.594
Observations	32,005	65,228
Controls	Yes	Yes
State $\times$ Year FE	Yes	Yes
Issuer FE	Yes	Yes
Underwriter FE	Yes	No
IssueAmount $\times$ Year FE	Yes	Yes
Underwriter $\times$ Year FE	No	Yes
Advisor $\times$ Year FE	Yes	No

Notes: This table examines two alternative specifications of our baseline regression estimated in Table 5, column (3). Column (1) controls for $Advisor \times Year FE$, limiting the sample to issuers that have a muncipal advisor. Column (2) controls for $Underwriter \times Year FE$. *t*-statistics, reported in parentheses, are based on standard errors clustered by underwriter. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels (two-tailed), respectively.

Table 8: Post-MCDC Absolute Decline in Disclosure

Dependent Variable: *Disclosure Decline*	
Treated	0.023**
	(2.18)
Controls:	
$\Delta Issue$	0.026
	(0.80)
$\Delta LogAmountIssued$	-0.024***
	(-3.02)
$\Delta\%CallableBonds$	0.005
	(0.20)
$\Delta\%GOBonds$	-0.029
	(-0.81)
$\Delta LogMaturityAmt_{t+1}$	-0.045***
	(-5.17)
$\Delta MinMaturity_{t+1}$	0.000
	(0.09)
Adjusted R^2	0.005
Observations	9,119

Notes: This table presents the coefficients of a cross-sectional OLS regression of *DisclosureDecline*, defined as a binary indicator variable equal to one if an issuer's average continuing disclosure rate is lower in the period following the MCDC initiative, relative to the pre-MCDC period, and changes in our control variables (i.e., the average values following the MCDC Initiative minus those prior to the Initiative). *t*-statistics, reported in parentheses, are based on standard errors clustered by underwriter. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels (two-tailed), respectively.

Table 9: Cross-sectional Analyses on Participating Entities

Panel A. Participating Underwriters

Dependent Variable: *Disclosure*	Participating UWs (1)	Non-Participating UWs (2)
Treated × Post	-0.073***	-0.058**
	(-5.95)	(-2.19)
Difference		0.015
		(-0.49)
Adjusted R^2	0.570	0.671
Observations	69,967	11,414
Controls and Main Effects	Yes	Yes
State × Year FE	Yes	Yes
Issuer FE	Yes	Yes
Underwriter FE	Yes	Yes
IssueAmount × Year FE	Yes	Yes

Panel B. Participating Issuers

Dependent Variable: *Disclosure*	
Non-Participating Issuer × Post	-0.073***
	(-6.48)
Participating Issuer × Post	0.124*
	(1.71)
Adjusted R^2	0.586
Observations	81,503
Controls and Main Effects	Yes
State × Year FE	Yes
Issuer FE	Yes
Underwriter FE	Yes
IssueAmount × Year FE	Yes

Notes: This table examines how the regression results from our baseline specification in Table 5, Column (3), vary based on whether or not the issuer's underwriter (in Panel A) or the issuer (in Panel B) participates in the MCDC initiative. In Panel A, we estimate our baseline specification separately for issuers with participating underwriters (column (1)) and without participating underwriters (column (2)), and present the difference in $Treated \times Post$ coefficients across specifications. In Panel B, we decompose the $Treated$ variable into issuers who participated ($Participating Issuer$) and did not participate ($Non - Participating Issuer$) in the MCDC, and interact each variable with $Post$. All other variables are as defined in Table 4. *t*-statistics, reported in parentheses, are based on standard errors clustered by underwriter. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels (two-tailed), respectively.