Fiduciary Duty in the Municipal Bonds Market [*]

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Abstract

I examine whether the imposition of fiduciary duty on municipal advisors affects bond yields and advising fees. Using a difference-in-differences analysis, I show that bond yields reduce by 9% after the imposition of the SEC Municipal Advisor Rule. Larger municipalities are more likely to recruit advisors after the rule is effective and experience a greater reduction in yields. However, smaller issuers do not seem to significantly benefit from the SEC Rule in terms of offering yield. Instead, their borrowing cost increases if their primary advisor exits the market. Using novel hand-collected data, I find that the average advising fees paid by issuers does not increase after the regulation. Offering yields reduce due to lower markup at the time of underwriting, driven by issuers for whom advisors play a more significant ex-ante role in selecting underwriters. Overall, my results suggest that while fiduciary duty may mitigate the principal-agent problem between some issuers and advisors, it has limited effect on small issuers.

Keywords: Fiduciary duty, financial intermediation, municipal debt

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1 Introduction

State and local governments in the United States finance various infrastructure and public utility projects through municipal bonds. As of 2022, $4 trillion of municipal bonds are outstanding, of which $457 billion were issued in 2021. Municipal issuers may not always have the necessary in-house expertise (Doty et al., 2018). They typically hire advisors to help decide the method of sale, to structure the bonds and to develop and draft the offering statements (Bergstresser and Luby, 2018). However, due to misaligned incentives and decentralized information (Garrett, 2021), advisors may not always act in the interest of bond issuers[1]. As a result of these potential principal-agent problems, the SEC imposed fiduciary duty on municipal advisors through the Municipal Advisor Rule (MA Rule) effective July 1, 2014. In this paper, I study how this imposition of fiduciary duty on the municipal advisors affects the offering yields and advising fees paid by the municipal issuers.

There are competing views on the implications of imposing a fiduciary duty (Bhattacharya, Illanes, and Padi, 2019). Fiduciary duty may benefit issuers by alleviating the principal-agent problem and making it costly to offer poor advice (*advice channel*). Advisors may be held liable for adverse consequences to issuers during bond issuance if they fail to adhere to their fiduciary responsibility after the MA Rule[2]. Alternatively, fiduciary duty may impose an undue burden on municipal advisors by increasing their costs (*fixed costs channel*), leading to worse outcomes for the issuer. Therefore, it is unclear how the imposition of fiduciary duty on municipal advisors affects issuers.

Using a canonical difference-in-differences research design, I compare the yield spreads for municipal bonds sold via negotiation to bonds sold via competitive bidding, before and after the SEC MA Rule. Bonds sold via negotiation are more likely to involve the underlying friction of misaligned incentives between the issuer and the advisor (treated group). This friction may be lower in bonds sold via competitive auction (control group), where price discovery happens without negotiation. I use this quasi-natural setting to understand the overall effect on bond yield spreads between the

[1]For instance, SEC Commissioner Kara M. Stein remarked in 2013, that the SEC had observed "numerous examples of bad behavior, including self-dealing and excessive fees". Also see comments by Municipal Securities Rulemaking Board (MSRB) and others.

[2]The fiduciary obligation under the MA Rule encompasses the twin requirements of the duty of care, i.e. advisors must exert effort on behalf of the issuer to make a recommendation; and the duty of loyalty, i.e. advisors must uphold the issuers' interests superior to their own. I provide more details in Section IA1 in the Internet Appendix.

advice channel and the *fixed costs channel*.

The preferred specification indicates that offering yields decreased by 12.6 basis points (bps) for negotiated bonds relative to competitively bid bonds after the regulation. Given that municipalities may select into negotiating their bond sale, the baseline identification relies on within-issuer variation across advisors over time. Further, I absorb time-varying unobserved factors among advisors and among issuers based on the geographical state to which they belong. Finally, I include bond- and county-level controls to account for observable characteristics. Considering the average bond in the sample, this effect amounts to a nearly 9.7% reduction (=12.60/129) in yield spreads[3]. I conduct several robustness checks to show that the baseline specification is robust to alternative explanations.

The lower yields are driven by reduced markup of negotiated bonds at the time of issuance. With advisors' obligation to adhere to their fiduciary duty, they are more likely to overcome underpricing of bonds[4]. Using a measure of liquidity from post-issuance trades (see Schwert (2017)), I find that the average price dispersion decreases for negotiated bonds after the MA Rule. Since markups on investor purchases increase with interdealer trading (Schultz, 2012), my results imply that negotiated bonds pass through fewer dealers before being held by investors. The lower underpricing (markup) and lower liquidity I document here likely support that the *advice channel* outweighs the *fixed costs channel* after the MA Rule.

The primary concern in this empirical setting is that of selection i.e., issuers' choice of the method of sale between negotiation versus competitive bidding is unlikely to be random. I provide evidence to mitigate concerns related to selection. Ex-ante, I show that observable factors do not explain the likelihood of selling bonds via negotiation *within* issuers. Further, a longitudinal analysis of the type of debt sold over the years reveals that nearly 40% of the bond volume is sold via negotiation, even around the SEC Municipal Advisor Rule. More formally, the likelihood of negotiation *within* issuers is stable around the timing of the SEC Rule. Taken together, these evidence suggest that issuers do not seem to select negotiated bonds around the regulation dif-

[3]To offer a back-of-the-envelope calculation, I use a modified duration approach to estimate cost savings worth USD 2.1 million on the total issuance by the average county. This is nearly 133 times the amount spent on educating a pupil in a public school in the United States (see: https://nces.ed.gov/fastfacts/display.asp?id=66).

[4]As in Garrett (2021), underwriter profit increases in yields in the primary market issuance because it pays a lower price to the municipal issuer.

ferentially. Finally, the distribution of important bond characteristics also tends to follow similar patterns between treated and control bonds, as seen in a quantile-quantile plot. Overall, I interpret my results as reflecting the change in yields for an issuer choosing to raise bonds via negotiation.

Identification in the difference-in-differences design assumes that outcomes for negotiated and competitively bid bonds would have trended in parallel without the regulatory change. Using a binned scatter plot of raw yield spreads around the MA Rule, I show that generally negotiated bond yield spreads are higher than competitively bid bonds[5]. Importantly, the fitted lines suggest that the negotiated and competitive yields were nearly parallel before the Rule. After July 2014, there seems to be a convergence in yields between the treated and control bonds. Beyond this eyeballing evidence, I formally assess the plausibility of the parallel trends assumption by testing the pre-trends *within* issuers. I plot the coefficients from a dynamic version of the difference-in-differences design using only issuer fixed effects. This analysis suggests no economic or statistical difference between the treated and control groups *within* issuers before the Rule. After the SEC Rule, negotiated yield spreads tend to decrease compared to the control group.

I use the municipal bond transactions data from the Municipal Securities Rulemaking Board (MSRB) to explore why offering yields reduce for negotiated bonds at the time of issuance. In a negotiated sale, underwriters and issuers/advisors arrive at a price based on investor demand (Brown, 2017). After the imposition of fiduciary duty on municipal advisors, issuers may be able to negotiate better with underwriters. I examine this by analyzing the average markups on new issuances using the baseline specification. Using transactions within the first month of trading, I construct the markup following Cestau, Green, and Schürhoff (2013). The analysis reveals that underpricing of treated bonds reduced by nearly six basis points after the introduction of fiduciary duty on municipal advisors[6]. This evidence from post-issuance trades suggests that bonds are likely issued closer to the price investors pay in subsequent trading.

Advisors may also be involved in choosing an underwriting firm (Daniels, Dorminey, Smith, and Vijayakumar, 2018) based on their information. This becomes especially relevant for a negotiated sale because competitive bidding eliminates the pre-selection of the underwriting firm before the

[5]This is consistent with previous evidence in the literature (Robbins and Simonsen, 2007; Guzman and Moldogaziev, 2012; Robbins and Simonsen, 2015; Liu, 2018; Cestau, Green, Hollifield, and Schürhoff, 2021).

[6]This result and magnitude are robust to using an alternative approach to compute the markup.

bond issuance. In this context, I present evidence using the heterogeneity among issuers for the role of advisors in choosing underwriters. Ideally, I would want to use precise information on advisors "selecting" underwriters. Without such data, I construct this measure by identifying whether an underwriter is introduced for the first time when a given issuer engages an advisor. Here, I show that the reduction in negotiated yield spreads is driven by issuers for whom advisors likely play a more significant ex-ante role in selecting the underwriter. This is consistent with fiduciary duty driving greater benefit where the principal-agent problem may be higher.

Another dimension to evaluate how the fiduciary duty on advisors affects issuers is the advisory fees paid by issuers. If the *fixed cost* channel dominates over the *advice channel*, then advising fees may increase after the MA Rule if advisors can pass on the cost to issuers. But if the *advice channel* outweighs it, regulatory oversight may discourage excessive fees. To the best of my knowledge, there is no standard database to obtain this information readily. As a result, I submit Freedom of Information Act (FOIA) requests to each of the states' bond issuance agencies to gather these data on advising fees. Overall, I find that issuers pay around 30 cents paid per USD 100 of municipal bonds raised during the sample period. This remains relatively stable around the MA Rule likely suggesting the importance of regulatory oversight[7].

Taken together, the overall reduction in yields and stable advising fees for issuances may favor issuers in engaging advisors. Therefore, examining whether issuers are more likely to engage advisors after this regulation is reasonable. On an extensive margin, I find that the average likelihood of engaging an advisor increases by over 5% in the period after the SEC Municipal Advisor Rule. This estimation accounts for unobserved heterogeneity *within* issuers. Ang, Green, Longstaff, and Xing (2017) find that issuers may accept NPV losses for short term cash flow savings in the municipal bond market. While issuers seem to secure lower yields without paying higher advising fees, there may still be variation among issuers. To understand more, I examine the likelihood of engaging advisors based on the size of issuers. I find that large issuers are more likely to adopt advisors, with little change among small issuers.

The choice of engaging an advisor for a municipal bond issuance is endogenous to issuers. Issuers more likely to benefit from advised bonds may also be more likely to hire an advisor on the extensive margin. Therefore, I revisit the baseline analysis to distinguish between small and large issuers'

[7] SEC Commissioner Kara Stein noted in 2013 that issuers may have faced excessive fees by municipal advisors.

overall effect on advised bonds. Using the average and median size of ex-ante bond issuances, this analysis shows that large issuers drive the reduction in yield spreads. This is consistent with the previous finding of large issuers being more likely to engage advisors after the SEC regulation. Similarly, I find that the evidence of reduced underpricing is also strongly driven by large issuers. Further, I show that more sophisticated issuers seem to drive the reduction in offering yields. I approximate sophistication among issuers based on the complexity of bonds issued, level of credit enhancement purchased, wages paid to their finance staff, and fraction of advised bonds issued, respectively.

Some advisors may choose not to provide municipal advisory services after the SEC Municipal Advisor Rule (Bergstresser and Luby, 2018). Consistent with this, I find that there is a decline in the number of advisors after the regulation. The baseline reduction in yield spreads is driven by those issuers for whom the primary advisors do not exit after the MA Rule. In contrast, there is no effect on issuers linked to advisors that exit the market. Importantly, there is substantial heterogeneity among such issuers: while offering yield spreads reduce for large issuers, there is an increase in spreads for small issuers.

Finally, I evaluate whether lower yields drive changes in municipal bond issuance after the SEC Municipal Advisor Rule. I classify issuers with greater (above median) reliance on negotiated bonds before the regulation as the “treated” group. Compared to the one year before the Rule, treated issuers raise more municipal debt than control issuers. This is reasonable given that the ex-post reduction in yields may increase the debt capacity for these issuers. As before, this increased issuance is driven by large issuers who experience greater yield reduction. Meanwhile, there is a weak evidence for decrease in the amount of bonds raised by small issuers. Overall, issuers who benefit from lower yields after the imposition of fiduciary duty can raise more municipal debt.

This paper contributes to three strands of the literature in finance and economics. First, this paper is related to the economics of expert advice in financial decision-making. Inderst and Ottaviani (2012a,b) provide theoretical underpinnings to how competition and compensation structure are related to advice provided by financial intermediaries. Empirical work in this direction has shed light on advisors’ commissions and other incentives in offering advice rather than clients’ interests (Christoffersen, Evans, and Musto, 2013; Anagol, Cole, and Sarkar, 2017; Dimmock, Gerken, and Graham, 2018; Boyson, 2019; Dimmock, Gerken, and Van Alfen, 2021). Recent work focuses on the geographic concentration of misconduct by financial advisors (Egan, Matvos, and Seru, 2019) and how the enforcement agency in charge may affect the quality (Charoenwong, Kwan, and Umar, 2019). This paper shows how enforcing discipline among municipal advisors through fiduciary duty may improve the average outcome for municipal borrowers. Importantly, I introduce novel data on financial intermediaries' municipal advising fees to show that advising fees does not increase after the MA Rule.

Second, this paper follows a recent surge in academic work on the municipal bond market. Adelino, Cunha, and Ferreira (2017); Cornaggia, Cornaggia, and Israelsen (2017); Cornaggia, Li, and Ye (2021); Gao, Lee, and Murphy (2021); Yi (2021); Gustafson, Haslag, Weagley, and Ye (2022). Prior work leveraging the municipal bond market transactions has looked at liquidity (Harris and Piwowar, 2006; Schultz, 2012) and default Schwert (2017) risk, as well as tax-effects (Green, 1993; Garrett, Ordin, Roberts, and Serrato, 2017; Landoni, 2018; Babina, Jotikasthira, Lundblad, and Ramadorai, 2021). There is a growing literature documenting how local conditions affect municipal bond prices (Gao, Lee, and Murphy, 2019b,a; Dougal, Gao, Mayew, and Parsons, 2019; Painter, 2020; Goldsmith-Pinkham, Gustafson, Lewis, and Schwert, 2021; Boyson and Liu, 2022). In this context, this paper sheds new light on how federal regulation may reduce offering yields on average due to reduced underpricing at the time of bond issuance.

Finally, this paper contributes by showing the policy relevance of fiduciary duty. Recent work in this direction has estimated higher risk-adjusted returns by extending fiduciary duty (Egan, 2019). Bhattacharya, Illanes, and Padi (2019) identify the effect of fiduciary duty in the reduced form by accounting for the entry margin using a structural model. Among municipal bonds, Garrett (2021) provides empirical evidence on how reducing conflicts of interest for advisors may improve bond outcomes. I contribute to this literature by showing how regulation may mitigate the principal-agent problem between issuers and advisors but has a differential effect among issuers. While large issuers gain, small and newly advised issuers do not benefit after the fiduciary rule on municipal advisors. Garrett (2021) focuses on how advisors may control the amount of information that is disclosed to competing underwriters. Regulatory change to increase this information provision by advisors leads to more efficient market outcomes. My paper addresses misaligned incentives and inadequate monitoring of advisors resulting in poor advice. I show that the MA Rule discourages unqualified advice by mitigating this principal-agent problem between some issuers and advisors.

2 Identification Challenges and Empirical Methodology

A direct analysis of offering yield spreads and the imposition of fiduciary duty on municipal advisors using Ordinary Least Squares (OLS) may be fraught with some problems. For example, unobserved issuer level characteristics may be driving the change in yields as well as the choice of advisors. Alternatively, municipal issuers that may be able to switch to more responsible advisors may have higher credit worthiness. This unobserved 'ability' may improve their borrowing costs and lead to inaccurate estimation of the causal effect of fiduciary duty. Overall, unobserved factors may impact observed yields, making issuers' decision to raise new municipal debt endogenous. In an ideal experiment, I may want to compare the yield spreads between two groups of otherwise identical bonds: those in which the SEC Rule was binding versus not. To this effect, I propose an approach that leverages a special aspect of the municipal bond market.

Municipal bonds are commonly sold via one of the two methods: competitive bidding or negotiated sale. Competitive bidding involves underwriters submitting their bids to buy the newly issued bonds. In a negotiated sale, a pre-selected underwriter works with the issuer to arrive at the terms of the sale. Municipal advisors play a crucial role in both methods of sale. They help the issuer in advertising the bond sale to potential underwriters in a competitive sale as well as in evaluating the final bids submitted. For negotiated sales, advisors may be involved from the time of selection of the underwriter to the final closure of the bond sale. Issuers typically rely on their advisors for bond structuring and pricing throughout their negotiation with the underwriter. In both negotiated and competitive sale, underwriters assume complete risk and responsibility for selling the bonds (Brown, 2017).

The primary friction that I propose to investigate arises from the principal-agent problem between the issuers and the advisors during the issuance of new municipal bonds. When hiring the more-informed advisors, municipal issuers may not be able to monitor advisors. By requiring municipal advisors to owe a fiduciary duty to their clients, the SEC Municipal Advisor Rule addresses this friction by mitigating the principal-agent problem. In this regard, this paper considers a quasi-natural experiment such that the underlying information asymmetry between the issuer and the advisor is potentially bid away in a competitive auction of bonds. This becomes especially relevant with regard to the choice of underwriter because competitive bidding eliminates the pre-selection of the underwriter. Thus, a bond issued via competitive bidding would constitute the control sample, with lower scope for misalignment of advisor incentives. Meanwhile, the treated group in this setting corresponds to bonds sold via negotiation. Prior to the Rule, issuers may have limited knowledge about the pricing of their bonds, especially in a negotiated sale. This is consistent with Cestau, Green, Hollifield, and Schürhoff (2021) who find that the use of negotiated sales increases yields by 15–17 bps. Under the fiduciary duty obligation, issuers may be better served by their and overcome some of the information asymmetry during the negotiation with the underwriter.

To formally characterize the baseline specification using a standard difference-in-differences (Bertrand, Duflo, and Mullainathan, 2004) equation, as below:

$$\begin{aligned} y_{b,i,a,t} = \alpha + \beta_0 * Post_t \times Nego._{b,i,a} + \beta_1 * Post_t + \beta_2 * Nego._{b,i,a} + X_b + Z_{i,t} \\ + \gamma_i + \mu_{a,t} + \kappa_{s,t} + \epsilon_{b,i,a,t} \end{aligned} \tag{1}$$

here index b refers to bond, i refers to issuer, a denotes the municipal adviser and t indicates time. The main outcome variable in $y_{b,i,a,t}$ is the offering yield spread at which a bond is issued in the primary market. X_b includes control variables at the bond level that influence its value. These include the coupon (%); log(amount issued in \$); dummies for callable bonds, bond insurance, general obligation bond, bank qualification, refunding, and credit enhancement; credit rating; remaining years to maturity; and inverse years to maturity. I provide the description of key variables in Table A1. $Z_{i,t}$ corresponds to local economic conditions of the issuer's county/state. Following Gao, Lee, and Murphy (2019a), I use the lagged values for log(labor force) and unemployment rate, and the percentage change in unemployment rate and labor force, respectively. I aggregate county level metrics to arrive at the state level measures and use these for corresponding state level bonds. This specification includes three sets of fixed effects. First, γ_i indicates issuer fixed effects, to make comparisons within a given issuer. I also include fixed effects at the advisor × year (μ_{a-t}) level to account for unobserved time-varying changes among advisors. Finally, κ_{s-t} corresponds to state-year fixed effects to account for unobserved time-varying changes across states in which the bonds are issued. I cluster standard errors by state due to the segmented nature of the municipal bond market (Pirinsky and Wang, 2011)[8].

[8] Other papers that follow similar clustering include Gao, Lee, and Murphy (2021); Cornaggia, Li, and Ye (2021). The results are robust to alternative dimensions of calculating standard errors including double clustering by state and year-month, as discussed in Section 4.3

2.1 Threats to Identification

An obvious concern with the identification strategy above relates to selection. Issuers that choose to raise municipal debt via negotiation may be different from those who do not. In order to test whether selection may likely bias the estimates of a difference-in-differences design, I evaluate the type of issuers who choose negotiation. I estimate a linear probability regression describing the choice of selling bonds via negotiation (indicator $\mathbb{1}\{Nego._{b,i,t})$ as,

$$\mathbb{1}\{Nego._{b,i,t} = 1\} = \kappa_t + \beta * X_{b,i,t} + \epsilon_{b,i,t} \tag{2}$$

where subscript b indicates the bond issuance, i indicates the issuer, and t indicates the time. $X_{b,i,t}$ includes variables controlling for issue size, average bond size, coupon, years to maturity, callable status, credit enhancement, insurance status, bank qualification, number of bonds, type of security (general obligation vs revenue), type of issuer, frequency of issuer borrowing, and fixed effects for rating group as well as use of funds (bond purpose).

I estimate this regression over three approaches to demonstrate how various factors affect the choice of negotiation. I focus on the three years before the SEC Municipal Advisor Rule to capture the ex-ante snapshot. Figure 2 shows the estimated coefficients for each specification using bond issuances for the three years before the SEC Municipal Advisor Rule. I also provide the tabular results in Table IA1. First, I show results from the *Overall* balance without using any geographic controls. The results suggest that there is some variation in terms of using negotiated sale for bonds that are insured as well as for state level bonds. Certain bonds that need outside insurance from a third-party may be well suited for sale via negotiation. At the same time, state level issuers may be better suited for negotiation given their previous relationships (Brown, 2017). When I include state fixed effects (*Within State*), I find similar factors driving the choice of negotiation.

However, importantly for identification here, these differences get wiped out when I consider the variation after including issuer fixed effects (*Within Issuer*). In this specification, I capture the likelihood of negotiation among issuers who borrow multiple times choosing negotiated or competitive sale for different issues. My strategy in Equation (1) looks to compare issuer-advisor pairs that sell bonds using negotiated versus competitive auction of bonds. By showing that issue characteristics do not seem to affect the choice of negotiation within issuers, I provide support against ex-ante selection concerns. Moreover, I also depict the portion of advised bonds sold via negotiation and competitive bidding in Figure IA2. I do not find evidence for changing method of sale around the Municipal Advisor Rule. Nearly 40% of the bond volume is consistently sold via negotiation around 2014. I also show this more formally in Figure IA3 by plotting the coefficients from regressing the likelihood of negotiation on half-year dummies after including issuer fixed effects. Benchmarked to the period before the Rule, I do not find any statistical difference around the SEC Rule. This evidence helps against concerns about selection into negotiation over time.

3 Data

This paper uses municipal bonds data are from FTSE Russell (formerly known as Mergent) Municipal Database and the Muncipal Securities Rulemaking Board (MSRB). Additionally, I hand-collect data on municipal advisor fees through Freedom Of Information Act (FOIA) requests made to state and local government bond issuers.

3.1 Municipal Bonds

Municipal bond characteristics are obtained from the Municipal Bonds dataset by FTSE Russell (formerly known as Mergent MBSD). I retrieve the key bond characteristics such as CUSIP, dated date, the amount issued, size of the issue, offering type (method of sale), state of the issuing authority, name of the issuer, yield to maturity, tax status, insurance status, pre-refunding status, coupon rate, and maturity date for bonds issued after 2004. The baseline sample consists of fixed rate, tax-exempt bonds issued during January 2010 to December 2019. This allows me to focus on a 4.5 year window around the SEC Municipal Advisor Rule. Issuers raised over USD 400 billion of municipal debt each year, mostly with advisors (Figure 1a). I also use the average credit ratings for these bonds within one year of issuance. These CUSIP-level ratings are provided by S&P, Moody's and Fitch. I encode character ratings into numerically equivalent values ranging from 28 for the highest quality to 1 for the lowest quality (Adelino, Cunha, and Ferreira, 2017).

The FTSE Russell database also provides the names of municipal advisor and underwriters involved in the bond issuance. Most bond issuances have a single municipal advisor. For a few cases with two advisors, I assign the issuance to the advisor with a larger cumulative volume advised on a cumulative basis. Municipal bond issues are generally sold to a syndicate of underwriters with the lead manager identified in the data. I use the lead manager as the underwriter. In cases with multiple lead underwriters, I follow the same rule of assigning it to the larger player (based on volume underwritten on a cumulative basis). Since I observe some spelling errors and related incongruities in the string names provided by FTSE Russell, I manually check the names of advisors and underwriters in order to standardize them during the sample period. I provide more details in Section IA2. Bergstresser and Luby (2018) describe the evolution of the municipal advisor firm market. As shown in Figure 1b, there is an increase in the number of municipal advising firms during 2010 to 2013, followed by a decline. The number of withdrawals by advisor firms reaches a peak in 2014. In Panel A of Table 1, I summarize the top fifteen advisors in the sample along with their relative share of volume advised.

Since the FTSE Municipal Bonds dataset does not have the county name of each bond, I need to supplement this information from other sources like Bloomberg. However, in light of Bloomberg's download limit, it is not feasible to search for information on each CUSIP individually. Therefore, I first extract the first six digits of the CUSIP to arrive at the issuer's identity[9]. Out of 65,933 unique issuer identities (6-digit CUSIPs), Bloomberg provides me with county-state names on 60,884 issuers. For these issuers, I match the Federal Information Processing Standards (FIPS) code using Klarner (2019). I use the FIPS code to assign county level characteristics to bonds issued by local governments/issuers. Additionally, I define "issuers" based on the ultimate borrower identity from Bloomberg following Gao, Lee, and Murphy (2021). The final sample comprises an average bond worth USD 2.7 million, issued at a coupon rate of 3.5% with a maturity of nearly ten years. Panel B of Table 1 provides more details on the distribution of bond characteristics.

I obtain information on the type of (issuer) government i.e., state, city, county or other, from the Electronic Municipal Market Access (EMMA) data provided by the Municipal Securities Rulemaking Board. This allows me to distinguish local government bonds from state-level bonds. I use the Municipal Securities Rulemaking Board (MSRB) database on secondary market transactions during 2005-2019. I follow the literature to perform standard data cleaning steps to drop observations as per Schwert (2017). Specifically, the main sample focuses on tax-exempt bonds

[9]The CUSIP consists of 9-digits. The first six characters represent the base that identifies the bond issuer. The seventh and eighth characters identify the type of the bond or the issue. The ninth digit is a check digit that is generated automatically.

while dropping variable coupon bonds. In matching the bond transactions from secondary market data to their respective issuance characteristics (from FTSE Russell), I rely on the CUSIP as the key identifier. I also use bond-level transactions during 2005-2020 from the Municipal Securities Rulemaking Board (MSRB) database to construct the measure for underpricing using post-issuance trades (see Section 4.2.2).

The primary outcome variable used in Equation (1) is the offering yield spread at which a bond was issued. I calculate the bond's coupon-equivalent risk-free yield as in Gao, Lee, and Murphy (2019a)[10]. In robustness checks, I also show the results using tax adjusted yields where I follow Schwert (2017) such that the marginal tax rate impounded in the tax-exempt bond yields is assumed to be the top statutory income tax rate in each state. This is consistent with the broad base of high net worth individuals and households who form a major section of investors in the US municipal bond market (often through mutual funds). A detailed study on tax segmentation across states by Pirinsky and Wang (2011) shows significant costs on both issuers and investors in the form of higher yields. In Figure 3, I provide kernel densities to represent the distribution of the primary market bond features like amount issued, coupon, offering yield and maturity between the treated and control groups. I describe the key variables in Table A1. Importantly, I find that the two groups look similar in the pattern of their distributions. As further validation, I show the quantile-quantile plots between treated and control bonds for these characteristics in Figure IA1. Most of the observations lie along the 45 degree slope, suggesting similarity between the two groups. I tabulate these characteristics between treated and control bonds in Table IA2. The average bond in the sample is worth USD 2.7 million, with a maturity of 9.8 years and coupon of 3.5%.

3.2 Municipal Advisor Fees

The municipal bond market has been historically opaque and only recently been researched by academicians. It is not surprising that I do not find any commercial database that maintains a

[10]First, I calculate the present value of coupon payments and the face value of a municipal bond using the US treasury yield curve based on zero-coupon yields as given by Gürkaynak, Sack, and Wright (2007). Using this price of the coupon-equivalent risk-free bond, the coupon payments, and the face-value payment, I get the risk-free yield to maturity. Finally, the yield spread is calculated as the difference between the municipal bond yield observed in the trades and the risk-free yield to maturity calculated. This yield spread calculation is similar to Longstaff, Mithal, and Neis (2005).

record of advisory fees charged by municipal advisors at the time of bond issuance. To overcome this hurdle, I hand-collect this information by requesting these data under the Freedom Of Information Act. States vary substantially in their handling and maintenance of these records. Some states like CA, TX and WA had detailed information on the break up of fees paid to various (financial and legal) agents in each bond issuance with in the state. This would include bonds issued by local governments as well as state agencies and authorities. In comparison, the state of New York was able to furnish information on the aggregate cost of issuance without providing a break-up to identify the fees paid to their municipal advisors. Few other states (like IL and PA) only had information on their state level general obligation bonds. They denied collecting similar information from the local governments within their jurisdiction and guided that the request be made to each issuer separately. The United States municipal bond market has more than 50,000 unique bond issuers because even at the county level, different agencies may be issuing bonds separately. This makes the pursuit of gathering information by requesting each local issuer painstakingly time-consuming and infeasible.

For three states (TN, VA and AR), the state public records agency is only responsible to entertaining queries from state residents only. This restriction is made to economically manage the limited resources available to the agency responding to FOIA requests. However, I was able to circumvent this limitation by directing this request through residents in TN and VA, respectively. Unfortunately, many states denied outright possessing this information. While that was disappointing, it also highlights the need to bring in greater transparency into the cost of intermediation in municipal bonds with respect to advising.

Overall, I was able to gather data from 11 states corresponding to nearly USD 100 billion of municipal issuance each year during 2010-2019. This represents nearly one-fourth of new municipal bond issuance volume in each year during this period. Specifically, I obtain these data from: CA, TX, WA, FL, MD, PA, NM, RI, VT, LA, NY. Figure 4 shows the trend in municipal advisor fees for every USD 100 of municipal debt raised. Interestingly, I find little change in average advising fees during the period. This may be partially attributed to regulatory oversight. For example, SEC Commissioner Kara Stein noted in September 2013 that issuers may have faced excessive fees by municipal advisors[11]. The SEC sought to address such problems by regulating the market for

[11] https://www.sec.gov/news/statement/2013-09-18-open-meeting-statement-kms

municipal advisors.

4 Results

I discuss the baseline results in Section 4.1 for Equation (1), including evidence from the dynamics using the raw data on municipal yield spreads and evidence on parallel pre-trends assumption. Section 4.2 focuses on the mechanism driving the main result. I show the impact on underpricing of new bonds and discuss the role of advisors in selecting underwriters. Section 4.3 shows robustness tests for the baseline specification. In Section 4.4, I discuss the heterogeneity by the size of issuers. The following analysis pertains to the sophistication of issuers (Section 4.5). I examine the exit of municipal advisors in Section 4.6. Finally, Section 4.7 discusses the implications for refunding bonds.

4.1 Impact on Offering Yield Spreads of Local Governments

In this Section, I begin by providing a graphical description of the raw yield spreads (Section 4.1.1). Following this visual summary, I provide evidence from a dynamic difference-in-differences regression estimation in Section 4.1.2. Finally, I discuss the baseline result with the full set of controls and fixed effects in Section 4.1.3.

4.1.1 Raw Relationship in Offering Yield Spreads

I start the analysis by a simple way of statistically summarizing the observed data: plotting the yield spreads and the corresponding fitted line, before and after the SEC Municipal Advisor Rule. Figure 5 shows the binscatter of negotiated/"treated" (circle) and competitive/"control" (diamond) yield spreads. I demarcate the promulgation of the Rule with a dashed vertical line. As shown, the yields tend to follow a downward trajectory until 2012 before the Rule. Spreads decrease from about 300 basis points to 100 basis points. Thereafter, there is a slight increase in yield spreads leading up to the SEC Rule.

Importantly, I observe nearly parallel trends in the fitted lines for the treated and control bonds before the Rule. After the Rule in 2014, I observe a downward trend for treated spreads resulting in a convergence of spreads. The figure suggests that the treated bonds depart from their original downward trend right after the SEC Municipal Advisor Rule. Initially, there seems to be some gap between the treated and control bonds right after the Rule (marked by the dashed vertical line). Negotiated yields tend to be higher than competitive yields; this is consistent with the literature (Robbins and Simonsen, 2007; Guzman and Moldogaziev, 2012; Robbins and Simonsen, 2015; Liu, 2018; Cestau, Green, Hollifield, and Schürhoff, 2021). This difference reduces to nearly zero by the end of 2019. I plot this difference in the shaded area of the plot.

The binscatter plot does not account for unobserved time-unvarying factors pertaining to the adviser and the issuer. This analysis also does not control for calendar year effects. Moreover, a robust analysis of the standard errors and regression outcomes follows in the subsequent section. I also provide similar evidence using the bin-scatter plot of offering yields (unadjusted for spread to treasury yields) in Figure IA4 in the Internet Appendix. Once again, I find a convergence between the treated and control yields only after the Municipal Advisor Rule, while observing nearly parallel trends between the fitted lines before 2014.

4.1.2 Dynamics in Difference-in-Differences Design

I begin the analysis by plotting the average yield spreads observed in the primary market between the treated and control bonds. The event window begins after the financial crisis in 2010 and concludes in 2019, before the Covid-19 pandemic. I show the regression coefficients obtained from the equation below:

$$y_{b,i,a,t} = \alpha + \delta_h * \sum_{h=2011H1}^{h=2019H1} Treated_{b,i,a} * Post_h + \beta_h * \sum_{h=2011H1}^{h=2019H1} Control_{b,i,a} * Post_h + \eta_i + \epsilon_{b,i,a,t} \quad (3)$$

where, η_i represents issuer fixed effect and each coefficient δ_h corresponds to the twelve month period ending in June of that year. I estimate these time dummies for the treated and control bonds simultaneously, benchmarked to the twelve month period before the event window shown in Figure 6. Representing the yields from bond issuances on a twelve month scale ending June affords two advantages. First, I am clearly able to distinguish between the period before and after the SEC Municipal Advisor Rule, which became effective on July 1, 2014, and is depicted by the bold vertical line in the figure. Second, this frequency of representation is also consistent with the annual fiscal cycle of most local governments.

The coefficients in panel (a) of Figure 6 reveals a downward slope for yield spreads, in general. This is not surprising given the monetary policy environment leading to lower yields in the financial markets. Importantly, before the SEC Rule, I find that the treated and control groups tend to follow nearly parallel trends. This lends useful support to the main identification assumption that the treated group may have followed the control group in the absence of the regulation. At least for the period before the regulation, the treated and control groups follow similar trends on yields after I include the issuer fixed effects. After July 2014, I find that the yield spreads for the treated bonds tend to decrease in comparison to the control bonds.

In order to capture the impact on yields after the regulation in 2014, I plot the differences in coefficients over time along with their confidence intervals in panel (b) of Figure 6. The difference coefficients in the periods before the Rule (depicted by the bold vertical line) are nearly zero and statistically indistinguishable. On the other hand, I find that the coefficients after the SEC Rule are economically different from zero and statistically significant. Specifically, within the first 12 months after the Municipal Advisor Rule, the negotiated yields decrease by nearly 8 basis points and is statistically significant at the 5% level of significance. By the middle of 2019, this difference amounts to 30 basis points. I find a gradual increase in the magnitude given that municipal issuers are not frequent borrowers. It takes time for the effect to show up as more borrowers raise debt in the primary market after the SEC Rule.

Further, I replicate this approach using the raw offering yield (unadjusted for spreads to treasury) as the dependent variable. I present these findings in Figure IA5 and find consistent results. Once again, I find evidence in support of the parallel trends assumption between the treated and control bonds before the SEC Rule. After July 2014, I find a decline in negotiated offering yields when compared to bonds sold via competitive bidding.

4.1.3 Baseline Difference-in-Differences

So far I have shown the raw relationship in offering yield spreads suggesting an overall downward trend. I have also shown the nearly parallel trends between the treated and control bonds before the SEC Municipal Advisor Rule using a binned scatterplot (Figure 5) and regression within issuers (Figure 6). After providing these supporting evidence for the parallel trends assumption in the difference-in-differences design, I now turn to the baseline effect on yields to quantify the magnitude due to the imposition of fiduciary duty.

Table 2 reports the main result using Equation (1) to quantify the impact of advisors' fiduciary duty on yield spreads. The coefficient of interest (β_0) represents the interaction term *Treated* $\times$ *Post* corresponding to the difference in differences estimate. I begin the analysis in Column (1) without including any controls or fixed effects. I find that the treated yields decrease by 25.55 basis points. Hereafter, I incrementally introduce additional controls. First, in Column (2), I add the issuer fixed effects to find that the magnitude of β_0 changes to -26.56 bps. In Column (3), I control for unobserved time-varying factors among issuers based on the state in which they belong. Including this state $\times$ year fixed effect greatly diminishes the magnitude to -12.81 bps, suggesting the importance of these factors in determining yield spreads. Thereafter, including advisor fixed effect (Column (4)) to absorb unobserved heterogeneity among municipal advisors reduces the coefficient marginally (-12.43 bps).

Municipal bonds may differ along various observable characteristics and so I additionally control for them in Column (5). Specifically, I control for the coupon (%); log(amount issued in \$); dummies for callable bonds, bond insurance, general obligation bond, bank qualification, refunding status, and credit enhancement; credit rating; remaining years to maturity; and inverse years to maturity. I provide the description of key variables in Table A1. In this specification, the overall magnitude is -14.79 bps. In Column (6), I control for observable time-varying factors for the issuer based on the county-level economic conditions. Following Gao, Lee, and Murphy (2019a), I use the lagged values for log(labor force) and unemployment rate, and the percentage change in unemployment rate and labor force, respectively. In this specification, I report a differential effect of -14.74 bps on yield spreads of the treated bonds after the regulation.

It is also important to account for unobserved time-varying heterogeneity among advisors. In Columns (7)-(8), I introduce advisor $\times$ year fixed effect. The baseline specification corresponds to Column (8), where I include county-level controls. I find that the differential effect on treated bonds after the SEC Municipal Advisor Rule (represented by β_0) amounts to -12.60 basis points. In other words, negotiated bonds are issued at yields that are lower by 12.60 basis points when compared to competitively issued bonds within the same issuer after the SEC Rule. This magnitude accounts for unobserved factors at the issuer level, as well as time-varying factors corresponding to the issuer's state. I also control for observable characteristics at the bond level and time-varying observed local economic conditions for the issuer based on their county. Further, I also absorb unobserved time-varying heterogeneity among advisors. For the average bond in the sample issued at a yield spread of 1.29%, this means a reduction in yields of about 9.7% (=12.60/129). This magnitude is comparable to the cost of switching to negotiated sale (15-17 bps), when they are allowed (Cestau, Green, Hollifield, and Schürhoff, 2021). This is also close to the effect of Affordable Care Act (ACA) on hospital bonds yield spreads (-13.6 bps) reported in Gao, Lee, and Murphy (2021). In Table IA3 in the Internet Appendix, I show similar results using offering yields as the dependent variable.

To understand the magnitude more closely, I offer a back-of-the-envelope calculation on interest cost savings due to reduced yield spreads (Gao, Lee, and Murphy, 2021). On average, issuers raised negotiated bonds worth USD 71 million during the sample period. With a reduction in yields of 12.6 basis points would amount to lower *annual* interest cost of USD 89,000. This is nearly six times the per pupil expenditure by the average public elementary school in the United States during 2018-19[12]. Given that the average negotiated bond in the sample has a maturity of 10 years, the realized benefit would be higher. An alternative method to quantify the impact relies on the average duration (about eight years) of bonds in the sample. Thus, a reduction of 12.6 bps reduces the cost for an average county by nearly USD 2.1 million[13]. In aggregate, nearly USD 700 billion was raised in municipal bonds via negotiated sale after fiduciary duty was imposed on municipal advisors. Using a similar approach, the expected benefit on the aggregate municipal bond issuance across issuers would be nearly USD 7 billion.

Overall, this section provides evidence supporting the identifying assumption in favor of the parallel pre-trends in yield spreads between the treated and control bonds. I show this effect using univariate distribution of yield spreads as well as from regression analysis. The difference-in-differences specification suggests that the yield spreads for negotiated bonds decreased by 12.60 basis points after the Rule. In the following section, I take a closer look at the pricing of securities using MSRB transactions to explain the main result.

[12] https://nces.ed.gov/fastfacts/display.asp?id=66

[13] I obtain this estimate using a modified duration approach by multiplying the total issuance of $207 million by twelve basis points and then by the average duration of eight years, in a fashion similar to Gao, Lee, and Murphy (2019a).

4.2 Mechanism

In this Section, I first motivate the evidence from offering prices in Section 4.2.1 before showing the evidence on underpricing (Section 4.2.2). The corresponding impact on the liquidity of newly issued negotiated bonds is discussed in Section 4.2.3. Further, I explain my results in light of the role played by advisors in selecting underwriters in Section 4.2.4.

4.2.1 Impact on Offering Price

As further support for the main finding, I now provide evidence from offering prices as the dependent variable. Municipal bonds are usually priced on a face value of USD 100. In the absence of external monitoring, profit-maximizing underwriters may have incentives to price the municipal bonds below the market value. Specifically, underwriter profit increases in yields in the primary market issuance because it pays a lower price to the municipal issuer (Garrett, 2021). They may be able to take advantage of the limited information possessed by issuers with respect to investor demand on specific municipal bonds. The imposition of fiduciary duty on municipal advisors may more closely align the incentives of advisors with issuers. As a result, they may do a better job of monitoring underwriters at the time of issuing municipal bonds.

Another motivation for underwriters to distort the offering price of municipal bonds could come from the prospect of future business. It is easier to sell low-priced securities to clients and they may reward the underwriter with future business (Liu and Ritter, 2010). At the same time, lowering the offering price may also enable underwriters to generate higher profits in selling bonds to investors subsequently (Green, Hollifield, and Schürhoff, 2007a,b). In this regard, I evaluate the observed offering price of municipal bonds at the time of issuance. I use the baseline specification corresponding to Equation (1) and report the results in Table 3.

In Column (1), I show the results without any controls or fixed effects. The offering price increases by USD 1.94 (per USD 100 of face value of bond). As before, I introduce additional controls and fixed effects to take care of observed bond characteristics and unobserved factors across issuers and advisors. The final specification in Column (8) corresponds to the fully saturated difference-in-differences model. It shows that the offering price for treated bonds increases by USD 1.05 after the imposition of fiduciary duty on municipal advisors. For the median bond issued via negotiation before the regulation in the sample at a price of USD 104, this amounts to about 1% increase. This effect is statistically significant and is obtained after comparing treated and control bonds within the same issuer. The specification also accounts for unobserved time-varying factors for the issuer's state, as well as unobserved factors among advisors over time. Additionally, I control for local economic conditions for the issuer based on the county-level employment and laborforce. With a higher offering price on the face value, issuers may realize greater dollar proceeds from the bond sale.

4.2.2 Impact on Markup (Underpricing) of New Bonds

Several papers have examined the underpricing of securities (Welch, 1989; Ljungqvist, 2003; Ritter, 2003; Eckbo, Masulis, and Norli, 2007; Green, Hollifield, and Schürhoff, 2007a,b) with a long literature focusing on the dramatic underpricing of initial public offerings in the equities market. In the bond market, researchers have evaluated whether the opacity of the market facilitates underpricing by financial intermediaries. Schultz (2012) shows that enhanced transparency with real-time reporting reduced price dispersion in the municipal bond market, but had little effect on average mark-ups to final investors. This paper evaluates the implications to municipal bond underpricing arising from the imposition of fiduciary duty on municipal advisors.

In a competitively sold bond, underwriters have to commit to the price submitted in the auction. But for negotiated sale, they arrive at the price based on discussions with the issuer. The pricing is not pre-determined and depends on demand from investors. I argue that this scenario affords possibility for price distortion by underwriters. With municipal advisors owing a fiduciary responsibility to their clients after the SEC regulation, issuers may be able to negotiate better with underwriters. To this effect, I begin the analysis based on average markups. The measure for underpricing follows Cestau, Green, and Schürhoff (2013) as the trade-weighted difference between the average price paid by customers and the offering price, as a percentage of the offering price. I use bond transactions within the first month of trading for a given a bond.

I follow the baseline specification in Equation (1). The hypothesis follows from the prospect of better informed issuers negotiating with underwriters due to the fiduciary duty on advisors after the SEC Municipal Advisor Rule. This might result in reduced underpricing of newly issued securities. The results are shown in Table 4. Specifically, Column (8) corresponds to the baseline specification with full set of fixed effects and controls. I find that the trade-weighted markup reduces by nearly 6 basis points for the treated bonds after the SEC Rule. In Column (9), I show similar evidence using an alternative measure by averaging (trade-weighted) the price paid by customers (P) over the offering price (O), as a percentage of offering price and shown in basis points. Once again, the markup reduces 5.5 basis points. These estimates are statistically significant at the conventional levels of significance. Finally, Column (10) shows the impact on interdealer markups by comparing the average price paid by customers (P) to the interdealer price (V), scaled by the interdealer price and shown in basis points. This measure shows a reduction of 11.12 basis points in the treated bonds after the regulation.

4.2.3 Impact on Price Dispersion

In the municipal bond market, markups on investor purchases increase with the amount of interdealer trading before the trade (Schultz, 2012). Therefore, lower underpricing (markup) among negotiated bonds may suggest that the bonds pass through fewer dealers before being held by investors. To test this hypothesis, I construct a measure of liquidity from post-issuance trades which is based on Schwert (2017). This measure is derived from Jankowitsch, Nashikkar, and Subrahmanyam (2011) and captures the dispersion of traded prices around the market "consensus valuation". Bond-level estimates of the price dispersion are obtained by taking the average of daily estimates within the first month of bond trading.

Table 5 shows the results using the main specification in Equation (1). As expected, I find that the average price dispersion decreases for negotiated bonds in comparison to competitively bid bonds after the Rule. I show the results by incrementally introducing controls and fixed effects from Column (1) through (8). The coefficient estimates are fairly stable across each of these specifications, and remain statistically significant throughout. Using the baseline specification in Column (8), these results suggest that the price dispersion reduces by about USD 0.03 for treated bonds after the regulation. As an alterntive measure, I also compute these results using the Amihud measure of liquidity. Table IA4 shows a similar effect of reduced liquidity for the treated bonds.

4.2.4 Impact Due to Advisor's Ex-ante Role in "Selecting" Underwriter

Advisors may also be entrusted with choosing an underwriting firm Daniels, Dorminey, Smith, and Vijayakumar (2018) based on their information. This becomes especially relevant for a negotiated sale because competitive bidding eliminates the requirement for pre-selection of the underwriting firm before the bond issuance. Previous literature has showsn that the market for underwriters in municipal bonds is segmented geographically, and may even lead to specialization based on the method of bond sale (Cestau, 2019, 2020). This paper investigates the principal-agent problem arising from less-informed issuers engaging more informed advisors. In light of this, the decision to pre-select the underwriting firm in negotiated bonds becomes crucial.

In this context, I present evidence using the heterogeneity among issuers with respect to the role of advisors in choosing underwriters. Ideally, I would want to use the precise information on advisors "selecting" underwriters. In the absence of such data, I construct this measure by identifying whether an underwriter is introduced to the issuer for the first time when a given issuer engages an advisor. In Table 6, I analyze the ex-ante heterogeneity among issuers based on the average and weighted average metric. This measure is high for issuers among whom advisors likely played a greater role in introducing new underwriters.

Columns (3) and (6) correspond to the baseline specification with dummies interacted for the ex-ante classification of issuers. Additionally, this analysis also controls for group $\times$ year fixed effects. I find that the impact of fiduciary duty is driven by issuers where advisors play a greater (above median) role in selecting underwriters. The coefficient is -16.26 bps for the above median group and is statistically significant. Moreover, the difference in coefficients for the two groups is also significant. I find similar results using the weighted average measure in Column (6). The choice of underwriters is crucial with regard to the pricing of the bonds. Therefore, this evidence suggests that the imposition of fiduciary duty on advisors may drive greater yield reduction where advisors play a crucial role. I show similar results using offering yield and offering price as the dependent variables in Table IA9.

Overall, I provide evidence in this section to explain the main finding of the paper. The reduction in borrowing cost for local governments is simultaneously associated with higher offering price and lower markups on newly issued bonds. These results point to the enhanced role of advisors in negotiated bonds at the time of bond issuance. Further, I show that the main result is driven by issuers among whom advisors likely play a greater role in selecting underwriters. In the following section, I consider several robustness checks to the baseline specification in Section 4.1.

4.3 Robustness

In this section, I test the robustness of the main result in Column (8) of Table 2 to various alternative econometric considerations. I present the results of these robustness checks in Table 7 ranging across different dependent variables, alternative specifications, tax and bond considerations, geographic considerations as well as alternative clustering of standard errors.

4.3.1 Other Dependent Variables

To show robustness of the main result to the choice of dependent variable, I show the results using after-tax yield (Column (1)) and after-tax yield spread (Column (2)). The construction of the tax-adjusted yield spread follows Schwert (2017). I describe these variables in Table A1. I find the main coefficient to be statistically significant with magnitudes of -18.13 bps and -19.69 bps, respectively. These higher magnitudes are not surprising because the tax adjustment tends to scale up the yields, as also shown in Gao, Lee, and Murphy (2021). I also replicate the baseline table using offering yield as the dependent variable. Specifically, Column (8) in Table IA3 corresponds to the main specification. I conclude that the main result is not sensitive to the specific choice of dependent variable.

There may be a concern that since municipal bonds are generally issued in a series (Ang, Green, Longstaff, and Xing, 2017), their pricing should be evaluated as a package. Ideally, the total interest cost may be a measure of such issue-level bond package. However, the FTSE Russell municipal bond database does not capture this variable. To overcome this limitation, I proceed by taking a weighted average of the yields across bonds in a given series/package. Similarly, I also aggregate the bond level characteristics across bonds in the same package to arrive at issue-level characteristics. Figure IA6 shows the baseline result in a dynamic regression *within* issuers. I quantify the baseline magnitude using this definition of issue-level yields and issue-level yield spreads in Table IA5 and Table IA6, respectively. The preferred specification is shown in Column (8), where the magnitude looks similar to the main analysis and is statistically significant. Therefore, I conclude that the main specification is robust to this alternative consideration of measuring the main dependent variable.

4.3.2 Alternative Specifications

In Column (3), I show the baseline results by adding issuer-type × year fixed effects. By augmenting the model, I add flexible time trends for different types of issuers (city, county, state or other) interacted with year fixed effects. There may be a concern that municipal advisors specialize in the type of local governments they advise that may change around the same time as the SEC Municipal Advisor Rule. I attempt to absorb how such secular trends may unobservably affect different types of issuers. I find that the coefficient of interest is statistically significant and close to the baseline value.

Municipal bonds are issued with the objective of funding or financing specific types of projects/objectives. These could range from activities pertaining to infrastructure (like schools, highways, water-sewer), general purpose and public improvement, or servicing existing utilities like power generation. Each of these sub-markets may experience differences in underlying risks associated with bonds raised for that purpose. As a result, I show results after controlling for the underlying purpose of bonds in Column (4). I also control for such unobserved trends over time by including bond purpose × year fixed effects in Column (5). I find that the magnitude (-12.19 bps) is nearly similar to the main effect and is statistically significant. Thus, I rule out explanations about the main effect that may be linked to trends in the purpose of bonds which may change around the same time as the imposition of fiduciary duty.

Cestau (2020) shows that underwriters tend to specialize in the method of sale in the municipal bond market. Moreover, Cestau (2019) also argues that market concentration has increased in municipal bond underwriting, especially due to negotiated sales. In light of this, I address the possibility that unobserved changes among underwriters may simultaneously affect yields as the SEC Municipal Advisor Rule. First, in Column (6), I include underwriter fixed effects to the main specification to absorb unobserved characteristics across underwriters. I find the interaction coefficient of *Treated* × *Post* to be -12.92 bps and statistically significant. Further, I also absorb unobserved time-varying trends associated with underwriters (underwriter × year fixed effects) and present the results in Column (7). The reported coefficient is -11.07 bps. Overall, I argue that the results are robust to unobserved time-unvarying and time-varying changes related to underwriters.

There may be a concern that issuers and advisors may rely on past relationships during new municipal bond issuances. This may allow advisors to gather more information about issuers with whom they work repeatedly. I account for this unobserved effect by including issuer-advisor pair fixed effect in Column (8), and find that the main result is robust to this consideration. Alternatively, one may argue that a similar alignment between issuers and underwriters may be driving the lower yields. Once again, I address this concern by introducing issuer-underwriter pair fixed effect to the main specification. Column (9) shows that the estimate is similar (-14.20 bps) after accounting for this. overall, I show that unobserved factors driving issuer-advisor and issuer-underwriter relationships do not drive the main result.

Besides the issuer-advisor relationship discussed above, advisors may be specializing over specific states. For example, Panel A Table 1 reports that most advisors among the top 15 operate over multiple states. However, over 50 percentile of the bond volume advised by them may come from less than ten states. In light of this, I examine the sensitivity of the baseline result to controlling for unobserved advisor-state pairing. Column (10) shows that the baseline effect is robust to this consideration. Finally, I also show results for a restrictive specification in Column (11), by including county $\times$ year fixed effect. Offering yield spreads may be unobservably driven by local economic conditions at the county level. This accounts for any unobserved time-varying heterogeneity among issuers for the county in which they belong. For state-issued bonds, this corresponds to the state $\times$ year fixed effect in the data. Even with this granular fixed effect, I find that the main coefficient is only slightly lower (-10.65 bps) and remains statistically significant.

4.3.3 Additional Considerations on Taxability, Bond features and Geography

An attractive feature of the municipal bond market is that interest income from most bonds is exempt from federal and state taxes (Green, 1993; Schwert, 2017). This greatly appeals to investors who fall in the high income tax bracket. Landoni (2018) discusses the effects of tax distortions in interest income in municipal bond pricing. Given the heterogeneous effects due to tax considerations, I also show robustness of the main results to these aspects in Columns (12)-(14). First, in Column (12), I broaden the sample to bonds for which interest income is taxable under federal law. I find the effect to be -11.93 bps and statistically significant. Next, I drop bonds from states that do not provide income tax exemption for in-state or out-of-state municipal bonds (IL, IA, KS, OK, WI) (Gao, Lee, and Murphy, 2021). Here, I report a baseline estimate of -11.08 bps in Column (13). Finally, I only focus on bonds that are exempt from federal as well as state level taxes in Column (14). The reported coefficient is -11.94 bps and is statistically significant. Thus, I conclude that the results are not sensitive to these tax considerations on interest income from municipal bonds.

For the baseline analysis, I present the results using a wide variety of municipal bonds. These may vary in terms of the purpose (and I show robustness in Section 4.3.2) or type of bond features (Brancaccio and Kang, 2021). These aspects may also drive and govern the advisors and underwriters that are associated with the bonds at the time of sale. For example, bonds that are advised and underwritten by the same financial agent may be unobservably different and may confound the estimates. However, in Column (15) of Table 7, I show the results by dropping a small number of such bonds during the sample period and find a similar effect. Another frequent feature in this market involves callability of the bonds. Chen, Cohen, and Liu (2022) show that municipalities lose money due to delays in refinancing their callable debt. To the extent that yields may vary unobservably differently for callable bonds around the same time as the SEC regulation, the estimates may be confounded. As a result, I show the baseline effect by dropping callable bonds in Column (16) and show that the findings are robust. Owing to similar considerations of unobserved heterogeneity, I also show results by dropping insured bonds (in Column (17)) and keeping only new money bonds (in Column (18)), respectively. I find that the baseline magnitude increases for these sub-samples and remains statistically significant.

Finally, I turn to geographic considerations that may confound with the identification strategy. In this regard, one may worry that there is substantial heterogeneity in respect of the size and type of issuers. While I also address some of these concerns in Section 4.3.2 by including issuer-type $\times$ year fixed effects, I revisit this aspect here. First, local bonds may be different from state level bonds/issuers. As a result, I show the result by keeping only local bonds in Column (19), followed by restricting the sample to state level bonds only in Column (20). While the magnitude reduces marginally to -10.81 bps in the former, I find a greater impact (-17.15 bps) for state level bonds. The greater effect on state bonds is consistent with the higher impact on more sophisticated issuers, discussed in Section 4.5. Next, I also address any concerns about the relative proportion of municipal bonds issued by different states. The states with the largest municipal debt issuance are

California, New York and Texas. I show the robustness of the analysis by dropping observations from these states in Column (21) to show that the results are not driven by these states alone.

4.3.4 Alternative Clustering of Standard Errors

I follow a conservative approach in clustering standard errors by state in the baseline specification. However, one may worry that there might be correlation along other dimensions in municipal bond yields, for example, among advisors. In this regard, I consider alternative levels of clustering standard errors in Columns (22)-(32). First, I think of modifying the cross-sectional dimension of observations. In Column (22), I cluster standard errors by advisor and find the main result holds. The baseline effect is also robust to clustering standard errors by underwriters (Column (23)). Column (24) shows results by clustering standard errors by issuer. I also consider a weaker definition to identify issuers based on first six digits of the CUSIP and report the results in Column (25). The results also hold when I cluster by bond issue (Column (26)).

Next, I look to double cluster standard errors along two dimensions. If standard errors in yields are simultaneously correlated with state and advisor, I present results in Column (27) by double clustering errors. Likewise, I show results for clustering by advisor and issuer (Column (28)). Further, I shows robustness of the results to alternative specification involving double clustered standard errors along the cross-section and over time. Specifically, I double cluster by state and year in Column (29), and by advisor and year in Column (30). Finally, I modify the time dimension of clustering to year-month and report the results based on double clustering by state and year-month in Column (31), followed by advisor and year-month in Column (32). In all these specifications, the baseline result holds at the conventional levels of statistical significance, suggesting that the findings are robust to these alternative considerations of clustering standard errors.

Overall, I perform several robustness checks for the baseline specification and find that the main result is not driven by these alternative considerations/explanations. I show that the effect holds even after additional fixed effects, or stricter requirements involving smaller sub-samples or other dependent variables. Moreover, I find similar results by using alternative approaches to clustering standard errors. These evidence enhance the argument of a causal interpretation of the main result in the paper. In Table IA7, I replicate these analyses using offering yields as the dependent variable. The results suggest that the main effect continues to be robust and significant across these alternative considerations. Finally, I perform similar evaluation using offering price as the dependent variable and report the results in Table IA8.

4.4 Heterogeneity: Likelihood of Advising and Size of Issuers

So far, the evidence suggests that yield spreads reduce for negotiated bonds when compared to competitively bid bonds, after the SEC Rule. Hand-collected data from FOIA requests indicates that the advisory fees paid by issuers on average has not gone up. Given these favorable factors, I now examine whether issuers are more likely to engage advisors. It is reasonable to expect that the prospect of lower yields without incurring higher fees might encourage issuers to engage advisors.

As discussed in Section 2, issuers may have unobserved ability to engage advisors. For example, their past relationships with advisors may drive engagement of municipal advisors. To account for such factors, I evaluate the weighted average likelihood of recruiting an advisor *within* issuers, on the extensive margin. Figure 7a shows the results from a linear regression of the average likelihood over annual dummies with issuer fixed effect. I find that there is an increase in the likelihood of engaging an advisor after the SEC Municipal Advisor Rule. On average, there is an increase of over 5% in the likelihood of issuers to engage advisors. The omitted benchmark period corresponds to the half year at the start of the event window in 2010.

In the municipal bond market, Ang, Green, Longstaff, and Xing (2017) find that issuers may accept NPV losses for short term cash flow savings. While issuers seem to secure lower yields on average without paying higher advising fees, there may still be variation among issuers. To understand more, I examine the likelihood of engaging advisors based on the size of issuers. I present these results in Figure 7b by grouping issuers into small versus large, based on the size of their ex-ante municipal issuances. Surprisingly, the overall effect among all issuers is likely driven by large issuers only. In comparison, small issuers exhibit almost no change in their likelihood to engage advisors. I shed more light into this heterogeneity in subsequent analysis.

The choice of engaging an advisor for a municipal bond issuance is endogenous to issuers. Issuers who are more likely to benefit from advised bonds may also be more likely to engage an advisor on the extensive margin. I examine this by revisiting the baseline analysis on advised bonds by grouping issuers into small versus large issuers. First, in Panel A of Table 8, I show the heterogeneity with offering yield spread as the dependent variable. Using the ex-ante average and median size of issuance, I find that large (above median) issuers experience a greater reduction in yields for their treated bonds. Specifically, Columns (3) and (6) correspond to the baseline specification with full set of controls and fixed effects. Additionally, I control for group × year fixed effect to account for unobserved time-varying heterogeneity among small and large issuers. The impact on yield spreads is greater for large issuers by 12.67 bps (Column (3)) and 13.95 bps (Column (6)), respectively. These results suggest that conditional on engaging an advisor, large issuers benefit more from the reduction in yield spreads.

Following up on the analysis using offering yield spreads, I show results for the corresponding effect on offering price. In Panel B of Table 8, I find that the impact on offering prices at the time of issuance is higher for large issuers. The differences in Columns (3) and (6) suggest that the baseline effect of USD 1.05 is almost entirely driven by large issuers. Next, I examine the difference between large and small issuers in the context of underpricing. Taken together with the evidence in Section 4.2.2, large issuers should experience a greater impact on trade-weighted markups. Indeed the results in Panel C of Table 8 suggest that the overall effect on reduced underpricing is driven by large issuers. As before, I also control for group × year fixed effect in this analysis. The coefficient for small issuers is small and statistically insignificant. Large issuers show statistically significant reduction in underpricing by over 7 bps in each of the specifications. In Table IA10, I show similar heterogeneity among issuers using offering yields as the dependent variable.

Finally, I extend these findings to learn whether lower yields drive changes in municipal bond issuance after the SEC Municipal Advisor Rule. Adelino, Cunha, and Ferreira (2017) show that municipalities' financial constraints may impact the issuance of bonds. Similarly, Boyson and Liu (2022) show that less wealthy school districts have difficulty obtaining municipal bond market funding. I classify issuers with greater (above median) reliance on negotiated bonds before the regulation as the "treated" group. The control group comprises issuers with below median reliance. Figure 9a shows the overall results. Compared to the one year before the Rule, treated issuers raise more municipal debt than control issuers. This is reasonable given that the ex-post reduction in yields may increase the debt capacity for these issuers. Once again, I explore this overall result based on the heterogeneity on the size of issuers. As shown in Figure 9b, this increased issuance is driven by large issuers who experience greater yield reduction. Meanwhile, there is weak evidence for decrease in the amount of bonds raised by small issuers.

Overall, the evidence in this Section shows that there is considerable difference in how issuers are affected due to the SEC Rule. I capture this heterogeneity based on the size of issuers. The results show that issuers who benefit from greater reduction in yields after the imposition of fiduciary duty under the SEC Municipal Advisor Rule are able to raise more municipal debt. Based on this heterogeneity, I also provide supporting evidence from the underpricing of bonds.

4.5 Heterogeneity: Sophistication of Issuers and Newly Advised Issuers

In this Section, I present more evidence to understand why the overall effect of fiduciary duty following the SEC Rule may vary among issuers. First, I show heterogeneity among issuers based on their level of ex-ante sophistication. Second, I consider another dimension of extensive margin for issuers that transition into advised bonds.

4.5.1 Heterogeneity by Sophistication of Issuers

Municipalities that rely more heavily on complex bond features may arguably represent a higher level of sophistication. I begin the analysis by identifying issuers that issued more complex bonds, ex-ante. I measure complexity of bonds following Harris and Piwowar (2006); Brancaccio and Kang (2021) by aggregating over six bond features: callable bonds, sinking fund provision, special redemption/extraordinary call features, nonstandard interest payment frequency, nonstandard interest accrual basis, and credit enhancement. Based on the weighted average of ex-ante complexity among bonds for an issuer, I classify them into groups based on the median. Thus, issuers with high complexity (above median) are likely to represent sophisticated issuers. I present the analysis by interacting the baseline Equation (1) with dummies corresponding to complexity in Column (1) of Table 9.

The results show that the differential impact on yield spreads of issuers with above median complexity is 14.68 bps higher than those below median. This difference is statistically significant and economically meaningful. As before, it accounts for the average effect among low versus high complexity issuers by including group $\times$ year fixed effect. Similarly, Column (2) shows the results by focusing on weighted average complexity of advised bonds only to classify issuers. I find similar results as in Column (1), suggesting higher effect on yield spreads of issuers with more complex bonds.

In Columns (3)-(5), I draw upon additional measures to quantify the ex-ante level of sophistication among issuers. First, in Column (3), I use the fraction of bonds with credit enhancement to represent the heterogeneity among issuers. Municipal issuers who are able to purchase more credit enhancement (usually include letters of credit and guarantees) are likely more sophisticated. Consistent with this, I find that yield spreads decrease by 15.76 bps for issuers with above median levels of credit enhancement. The difference between high and low groups of issuers is statistically significant, and similar to the previous case in Column (2). In Column (4), I use the ex-ante average wage paid to the finance staff of local governments. This data is obtained from the US Census Bureau's Annual Survey of of Public Employment & Payroll (ASPEP) for local governments. The results show that issuers with higher levels of wages for the finance staff benefit more in terms of yield reduction. Finally, Column (5) shows this result by using the ex-ante reliance on advised bonds. Issuers that are less reliant on advisors experience a greater reduction in yield spreads (-17.02 bps). Using different metrics, I show that the main result is driven by issuers who are likely more sophisticated.

4.5.2 Evidence from Newly Advised Issuers

In Section 4.4, I show results suggesting that issuers are more likely to engage advisors on the extensive margin, after the SEC Municipal Advisor Rule. Here, I evaluate how the imposition of fiduciary duty on municipal advisors may encourage issuers who previously did not (or could not) rely on advisors to engage them in raising future debt. Alternatively, the regulatory push may enhance the quality of advice offered while simultaneously raising the fees charged by municipal advisors. This may discourage such issuers from recruiting municipal advisors after the Rule. However, the evidence from the average fees paid to advisors (Figure 4) shows little support for this alternative case.

Drawing upon the evidence in Figure 7a, I examine "newly advised" issuers. These issuers engage advisers for the first time only after the SEC Rule. Table 10 shows the results using the baseline specification in Equation (1). In Columns (1)-(3), I show results using the yield spread as the dependent variable. For Columns (4)-(6), I use the offering yields as the dependent variable. Further, I distinguish between "complete" and "partial" transition of issuers. The former case applies to issuers who never issued bonds with advisors before the Rule but always do so afterward.

On the other hand, issuers are classified as "partial" transitioned if they never issue bonds with advisors before but recruit advisors for some of the bonds ex-post. As a result, I do not use advisor $\times$ year fixed effect in this analysis. I do not find any significant effect on the treated bonds compared to the control group after the SEC Municipal Advisor Rule. Even though the sample size reduces substantially in this analysis, the absence of meaningful statistical significance and economic magnitude suggests that newly advised issuers do not experience a reduction in yield spreads.

Taken together, the evidence in this Section suggests that the baseline effect of reduced yields in negotiated bonds is driven by sophisticated issuers. Further, municipal issuers that recruit advisors for the first time after the imposition of fiduciary duty do not exhibit lower yields. This evidence supports the earlier finding showing that large issuers drive the main result because they may be more sophisticated.

4.6 Exit of Municipal Advising Firms

As discussed in Section 3.1, Bergstresser and Luby (2018) suggest that some municipal advisors exit from the market after the SEC Municipal Advisor Rule. As in Bhattacharya, Illanes, and Padi (2019), this may be due to the additional cost of compliance with the new regulatory requirements, increased paperwork, increased overhead time required to deal with the regulation, or increased effort dedicated to oversight ex-post against the potential threat of being sued. I focus on the municipal advisors who advise on bonds issued during the sample period. In Figure 8, I depict the number of regular advisors operating in the municipal bond market. This corresponds to advisors in the sample who advise on at least one issuance in each calendar year until June 2014. Conditional on advising municipal bonds in the sample, the number of regular advisors decreases from 214 in 2010 to 136 in 2019. This implies that 78 municipal advising firms progressively exited the advisory market after the SEC Municipal Advisor Rule. Importantly, these municipal advisors worked on at least one issuance in each year before the regulation. Figure 8 also shows the share of municipal bonds advised by these regular advisors on the right-hand axis. Over 90% of the municipal bonds were advised by regular advisors before the regulation. After the MA Rule, their share declined to just over 80% in 2019. This suggests that focusing on these regular advisors with at least one issuance in the pre-period is representative of the overall market.

In this context, I analyze the impact of advisors exiting the market on municipal bond yield spreads in Table 11. In Column (1), I show results using Equation (1) interacted with dummies corresponding to whether the issuer primarily depended on an exiting advisor or not. I define issuers linked to advisors when more than 50% of their municipal debt issuance in the pre-period is advised by the exiting advisor. Alternatively, results are robust to using a lower threshold of 25% of municipal debt issuance by the exiting advisor, as shown in Table IA11. The results suggest that the reduction in offering yield spreads (-16.61 bps) is driven by issuers that do not depend on an exiting advisor. This magnitude is slightly higher than the baseline effect reported in Table 2. Meanwhile, there is no significant impact on issuers that depend on exiting advisors. This is consistent with the analysis in Section 4.5 showing that the main effect is stronger for sophisticated issuers.

However, the muted effect on issuers dependent on exiting advisors masks the heterogeneity between small and large issuers. I present these results in Columns (2) and (3), by focusing on the sub-sample of issuers that depend on an exiting advisor, ex-ante. Column (2) suggests that the yield spreads increase by 15.89 bps for small issuers, whereas the large issuers continue to experience a reduction in yield spreads (8.59 bps) on their negotiated bonds after the MA Rule. The difference between the two groups is economically and statistically significant. It is possible that some issuers that depend on exiting advisors may raise debt without municipal advisors after the regulation. I account for this in Column (3) and show results after including non-advised bonds in the sample. The results look similar, suggesting an increase in yield spreads for small issuers that were ex-ante dependent on an exiting advisor. As before, I use the median size of issuance in the ex-ante period to distinguish small versus large issuers. Additionally, these results are robust to using the average size of ex-ante issuances (Table IA12). Overall, the evidence in this section suggests that the regulatory burden may be associated with the exit of some municipal advisors.This may increase the borrowing cost of small issuers that were dependent on these exiting advisors.

4.7 Evidence from Municipal Bond Refundings

Since the late 1990s, there has been an increasing trend of municipal bond issuance associated with refunding transactions (Ang, Green, Longstaff, and Xing, 2017). More specifically, advance refundings allow municipalities to retire an existing callable bond to before its call date. Refunding bonds are used to refinance existing municipal debt. Previous evidence in the literature points toward compromised option value (Damon and Spatt, 1993), and the timing of advance refundings (Kalotay and May, 1998). In their analysis using an extensive data set, Ang, Green, Longstaff, and Xing (2017) find that a substantial number of advance refundings occur at a net present value loss. They explain their results based on financial constraints of issuers. Given that refundings constitute a large portion of debt in the municipal bond market, I shed light on these issuances in light of fiduciary duty on advisors.

I begin the analysis by first restricting the sample to bonds issued for the purpose of refundings. This allows me to isolate the impact of fiduciary duty by replicating the baseline Equation (1) for a relatively homogeneous group of bonds. Figure 10 shows the dynamic coefficients obtained from Equation (3) for the subset of refunding bonds. In Panel (a), I plot the coefficients on yield spreads over time and find justification for the parallel trends assumption in the period before the SEC Municipal Advisor Rule. Following the imposition of the fiduciary duty on advisors, I find that bond yields decrease for the treated bonds. Compared to the control group, this difference is statistically significant, as shown in Panel (b) of Figure 10. For the period before the Rule, I are able to verify that the differences are indistinguishable from zero and statistically insignificant.

To quantify the overall magnitude on yield spreads of bond refundings, I present the results in Table 12. Using the offering yields as the dependent variable in the full model specification of Equation (1) in Column (1), I find that yields decrease by 7.93 basis points for the treated bonds. In Column (2), I show the results using the after-tax yield as the dependent variable. As expected, the coefficient of interest is higher, given the tax-adjustments. The baseline specification corresponds to Column (3), where I show results for yield spreads as the dependent variable. I find that refunding yield spreads decrease by 7.54 bps for negotiated bonds after the SEC Municipal Advisor Rule, in comparison to competitively bid bonds. Finally, I also report the results using after-tax yield spreads as the dependent variable in Column (4). As in shown in Column (2), this effect tends to be higher due to tax adjustments (see Gao, Lee, and Murphy (2021)). Overall, I find that the reduction in yields of treated bonds is lower for refunding bonds, when compared to the overall sample. This should be understood in light of the greater information that issuers have about these bonds. Since refundings are issued to refinance earlier bonds, issuers have more information about the underlying characteristics and finances of these projects/purposes. Further, issuers may learn about the demand for such bonds based on the secondary market trading of existing bonds to be refinanced. Thus, the principal-agent problem mitigated by the imposition of fiduciary duty is relatively lower in this setting.

Finally, I turn to another aspect of refunding bond issuances. Chen, Cohen, and Liu (2022) show that many local governments refinance their long-term debt with significant delays. This results in sizable losses for these issuers. Motivated by this evidence, I examine the timing of pre-refunding bonds in the sample. For these bonds, issuers raise the refunding bonds before the calling date of the bonds to be defeased. Ideally, issuers would benefit the most when such callable bonds are refinanced when they can borrow at the lowest yields. However, the future borrowing cost of issuers may not be precisely ascertained in advance.

The imposition of fiduciary duty on municipal advisors may hold them liable for adverse consequences to municipal issuers. Advisors may be more cautious in issuing refunding bonds in advance of the calling date. I examine this possibility using Equation (3) in Figure 11 with the gap between calling date and refunding date as the dependent variable. First, panel (a) shows that the treated and control bonds seem to follow nearly parallel trends *within* issuers. As before, I plot the difference between the treated and control bonds along with the confidence intervals in Figure 11b. These results show that the gap reduced significantly for the negotiated bonds in the period after the SEC Municipal Advisor Rule. This would suggest that issuers reduced earlier refunding of callable bonds after the imposition of fiduciary duty on their advisors.

I present this result more formally to quantify the magnitude in Table 13. The preferred specification corresponds to Column (5) where the dependent variable is the gap between the calling and refunding dates. The coefficient suggests that this gap reduced by nearly 143 days, *within* issuers, after controlling for advisor fixed effect and state $\times$ year fixed effect. Due to the smaller sample in this setting, I do not use the more restrictive advisor $\times$ year fixed effect in this setting. Finally, Column (6) shows the result by using the log transformation of the gap in days, suggesting over 20% reduction for the treated bonds after the SEC Municipal Advisor Rule.

Overall, I show in this Section that there is a similar impact on yield spreads of treated bonds among refunding issuances. Focusing on these bonds also enables understanding more about how issuers reduce the extent of early refunding of callable bonds. These findings complement the main result showing that the imposition of fiduciary duty may benefit the average issuer by lowering their yield spreads at issuance.

5 Conclusion

I investigate how the imposition of fiduciary duty on municipal advisors affects municipal bond yields and advising fees. On the one hand, fiduciary duty may benefit municipal issuers by increasing the cost of poor advice by municipal advisors (*advice channel*). However, at the same time, the additional regulatory burden may increase the cost of doing business (*fixed cost channel*). It is unclear which of these two effects would dominate overall. In light of this, I evaluate the overall implication of these two competing channels in the context of municipal bonds.

By focusing on the SEC Municipal Advisor Rule of 2014, I provide the first evidence on how fiduciary duty on municipal advisors affects municipal issuers. The findings suggest that the offering yield spreads on negotiated bonds reduced by 12.6 bps after the SEC Municipal Advisor Rule. I explain this result based on reduced underpricing of bonds, and is driven by issuers for whom advisors likely played a more significant ex-ante role in selecting underwriters. However, this effect is not uniform. Further analysis shows that large and sophisticated issuers seem to experience a greater reduction in yield spreads. While issuers are more likely to engage advisors on the extensive margin after the regulation, this effect is driven by large issuers only.

Moreover, newly advised issuers do not benefit in terms of yields after the MA Rule. Using novel data, this paper also provides first evidence of little change in average advising fees around the SEC Municipal Advisor Rule. Overall, I find that the fiduciary duty of advisors helps to mitigate the principal-agent problem between issuers and advisors.

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Table A1: Description of Key Variables

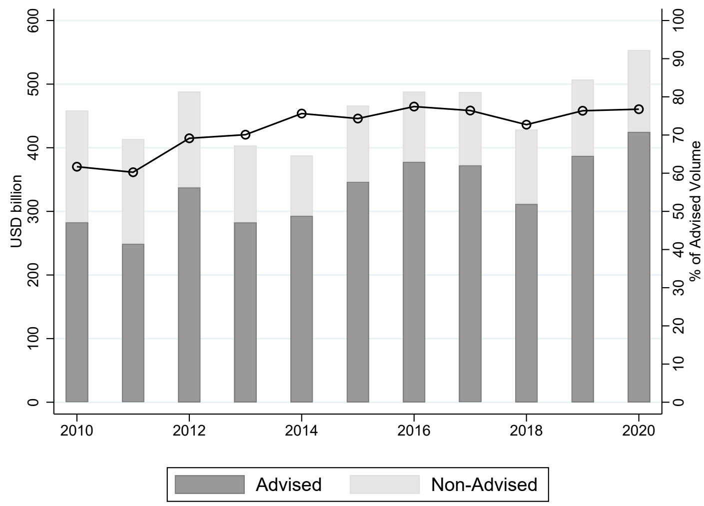
This table reports variable definitions. Data sources include the municipal bond transaction data from the Municipal Securities Rulemaking Board (MSRB), FTSE Russell's Municipal Bond Securities Database (FTSE, formerly known as Mergent MBSD), zero coupon yield provided by FEDS, and highest income tax bracket for the corresponding state of the bond issuer from the Federation of Tax Administrators (FTA).

Variable	Description	Source
Treated	Dummy set to one for bonds sold via negotiation. This dummy equals zero for competitively bid bonds.	FTSE
Post	Dummy that is assigned a value of one for time after SEC Municipal Advisor Rule became effective on July 1, 2014 and zero otherwise.	SEC
GO Bond Dummy	Dummy variable for general obligation bond. A GO bond is a municipal bond backed by the credit and taxing power of the issuing jurisdiction rather than the revenue from a given project.	FTSE
Log(Amount)	Log transformation of the dollar amount of the individual bond's (9-digit CUSIP) original offering.	FTSE
Callable Dummy	Dummy variable that equals 1 if the issue is callable and is 0 otherwise.	FTSE
Insured Dummy	Dummy variable that equals 1 if the issue is insured and is 0 otherwise.	FTSE
Remaining Maturity	Individual bond maturity measured in years.	FTSE, MSRB
Inverse Maturity	Inverse of the value of *Remaining Maturity*; to account for non-linearity.	FTSE, MSRB
Markup (underpricing)	Trade-weighted difference between the average price paid by customers to buy the bonds versus the offering price of bonds, as a percentage of the offering price (Cestau, Green, and Schürhoff, 2013).	FTSE, MSRB
Average Yield	Volume-weighted average yield for a CUSIP in a given month. Volume refers to the par value of the trade.	MSRB

Variable	Description	Source
Yield Spread	Calculated as the difference between the *Average Yield* and the coupon-equivalent risk free yield (r_t). The risk free yield is based on the present value of coupon payments and the face value of the municipal bond using the US treasury yield curve based on maturity-matched zero-coupon yields as given by Gürkaynak, Sack, and Wright (2007). This yield spread calculation is similar to Longstaff, Mithal, and Neis (2005).	MSRB, FEDS
After-tax Yield Spread	Calculated as the difference between the tax-adjusted *Average Yield* and the coupon-equivalent risk free yield (r_t). The risk free yield is based on the present value of coupon payments and the face value of the municipal bond using the US treasury yield curve based on maturity-matched zero-coupon yields as given by Gürkaynak, Sack, and Wright (2007). This yield spread calculation is similar to Longstaff, Mithal, and Neis (2005). We follow Schwert (2017) in applying the tax adjustment. It is calculated as below: $$spread_{i,t} = \frac{y_{i,t}}{(1-\tau_t^{\text{fed}}) * (1-\tau_{s,t}^{\text{state}})} - r_t$$	MSRB, FEDS, FTA
Price Dispersion	Average dispersion using traded prices around the market "consensus valuation" using Schwert (2017), based on Jankowitsch, Nashikkar, and Subrahmanyam (2011). Bond-level estimates of the price dispersion measure obtained by taking the average of daily estimates in the first month of trading.	FTSE, MSRB

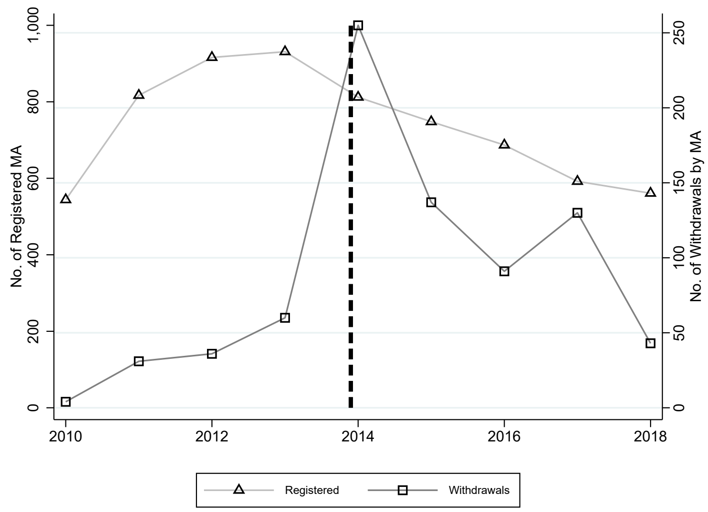
Variable	Description	Source
Rating	Numeric value corresponding to the bond's credit rating from S&P, Moody's or Fitch. We use ratings within one year of bond issuance. Following Adelino et al. (2017), we map the ratings into numeric values where the lowest rating is assigned the value of one and the higher ratings are assigned higher numeric values, progressively.	FTSE

Total Primary Market Issuance in Municipal Bonds



(a)

Registration Activity of Municipal Advisor (MA) firms



(b)

Figure 1: Municipal Market Issuance and Municipal Advisor Registration: In this figure, I show the issuance and registration activity in the municipal bond market. Panel (a) shows the total volume (in USD billion) of municipal debt issued during 2010-2019 in the primary market on the left axis. I also show the split based on advised versus non-advised bonds using the vertical bars. The line graph corresponds to the right axis, showing the percentage of advised bonds. Panel (b) shows the registration activity by municipal advisor (MA) firms during 2010-2018. This information is obtained from Table 1 in Bergstresser and Luby (2018). The left axis reports the number of firms registered as municipal advisors. The right axis provides the number of withdrawals filed by MA firms during this period.

Linear Probability Estimates Explaining Choice of Negotiation

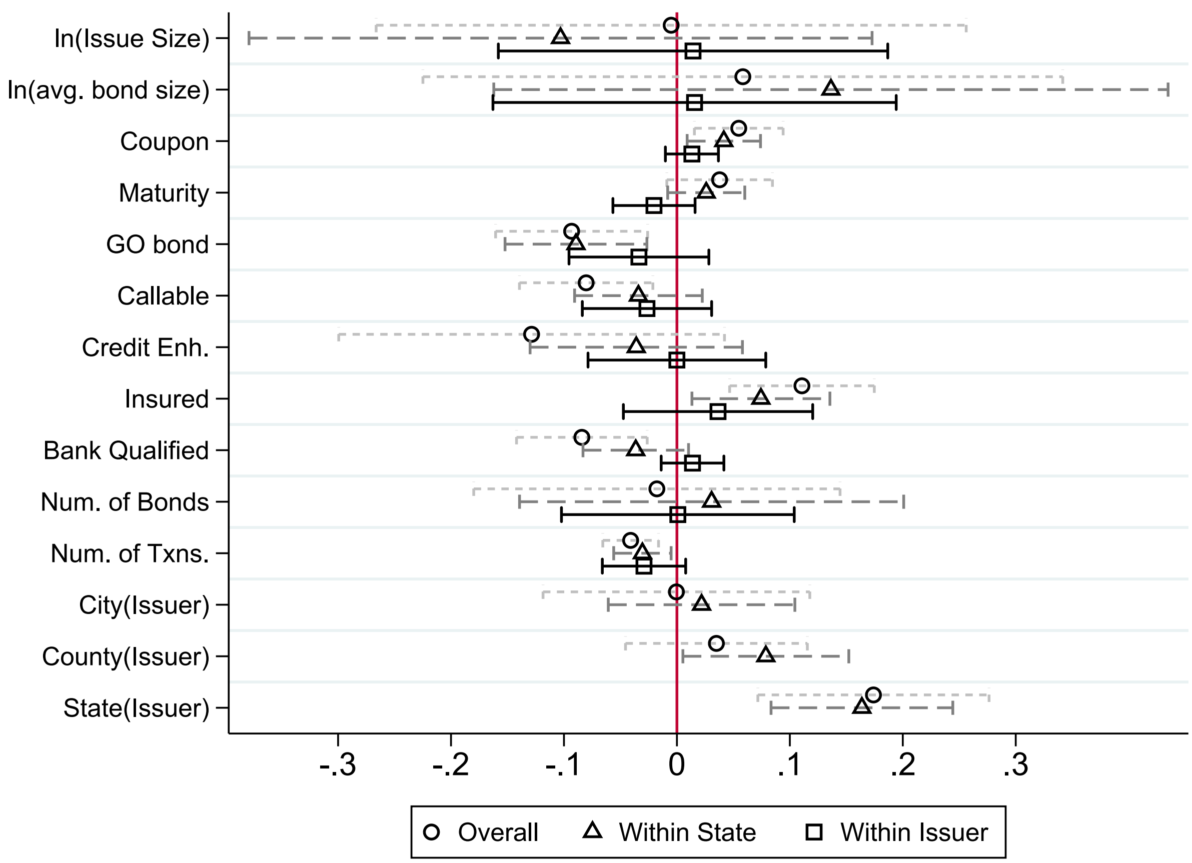


Figure 2: Linear Probability Estimates Explaining Choice of Negotiation: The figure shows the point estimates and 95% confidence intervals using Equation (2) regressing the choice of negotiation on issuer and bond issue characteristics. The sample focuses on the three years before the SEC Municipal Advisor Rule to capture the ex-ante snapshot. Characteristics with continuous measurements are normalized to standard deviations. The tabular results for this analysis are shown in Table IA1. *Overall* balance shows the estimates without including any geographic controls linked to the issuer. Next, *Within State* balance corresponds to the estimates after including state fixed effects for the issuer. Finally, *Within Issuer* shows results obtained from including issuer fixed effects.

Distribution of Municipal Bond Characteristics (2010-2019)

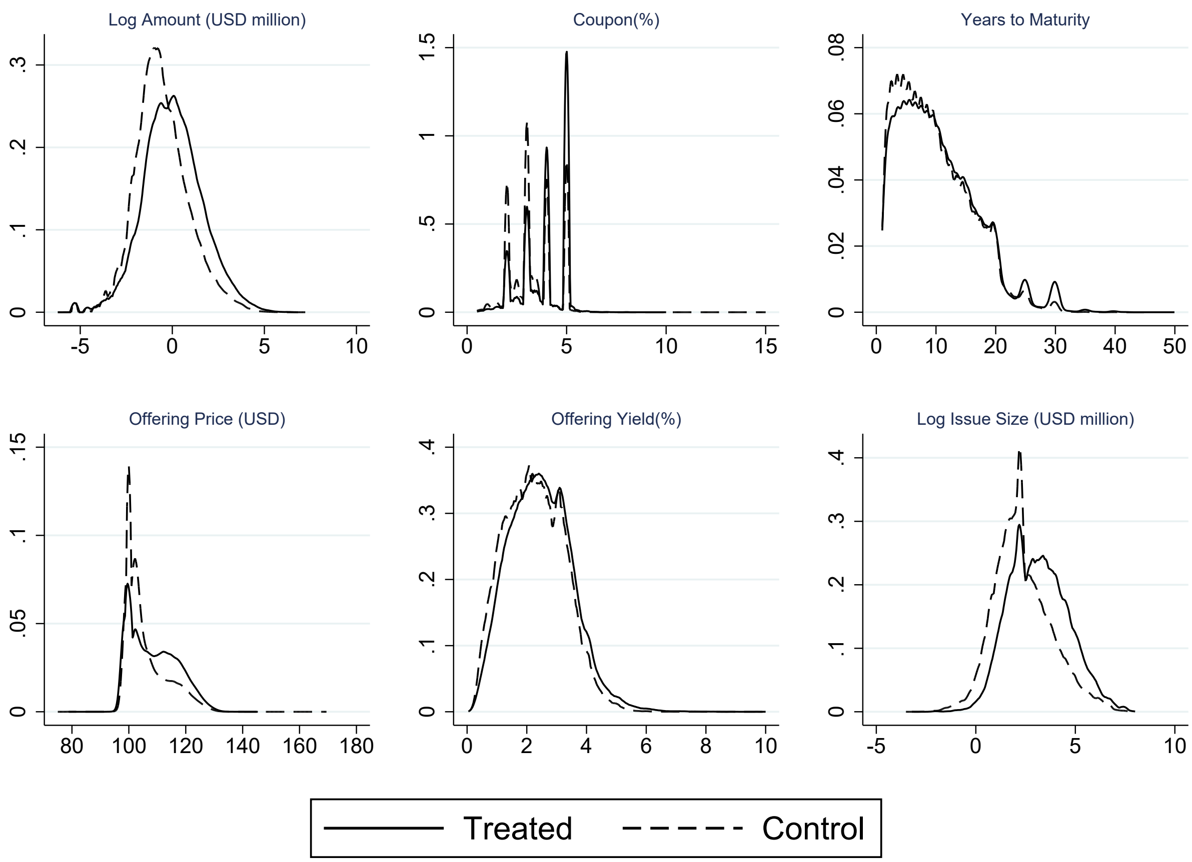


Figure 3: Municipal Bond Characteristics: The figure shows the primary market characteristics of bonds issued with advisors at the time of issuance. Bonds sold via negotiated sale consist of the "treated" group, whereas competitively auctioned bonds comprise the "control" set. The sample focuses on fixed rate, tax-exempt bonds issued during 2010-2019. Figure IA1 shows the quantile-quantile plot for these characteristics between treated and control bonds.

Municipal Advising Fees

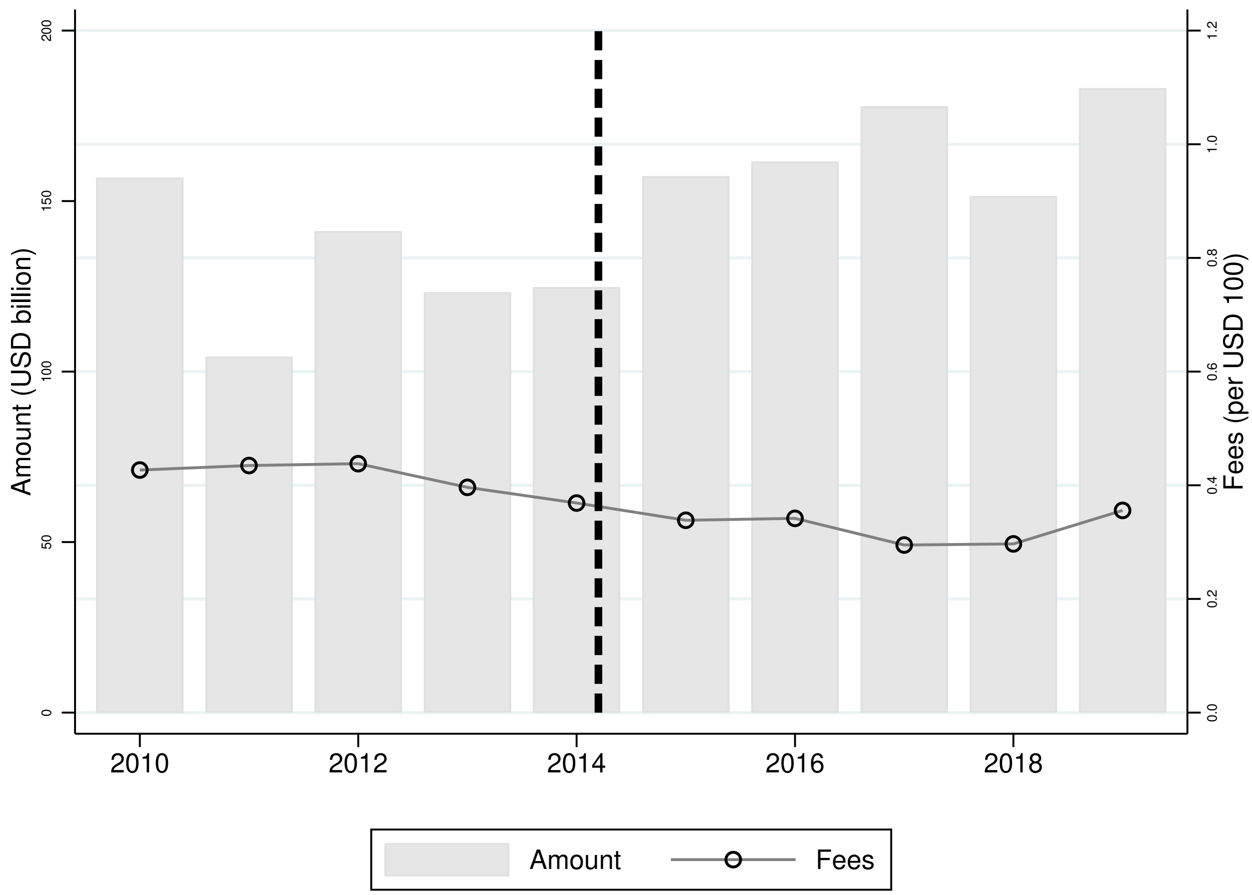


Figure 4: Municipal Advising Fees: The figure shows the municipal advising fees paid by issuers alongside the corresponding amount of municipal debt raised. The vertical bars show the aggregated amount of municipal debt issued by state and local governments on the left axis for which I have the fees information during 2010-2019. The connected line depicts the fees paid to municipal advisors for every USD 100 of municipal debt raised on the right axis. These data were obtained under FOIA requests from 11 states: CA, TX, WA, FL, MD, PA, NM, RI, VT, LA, NY. See Section 3.2 for details.

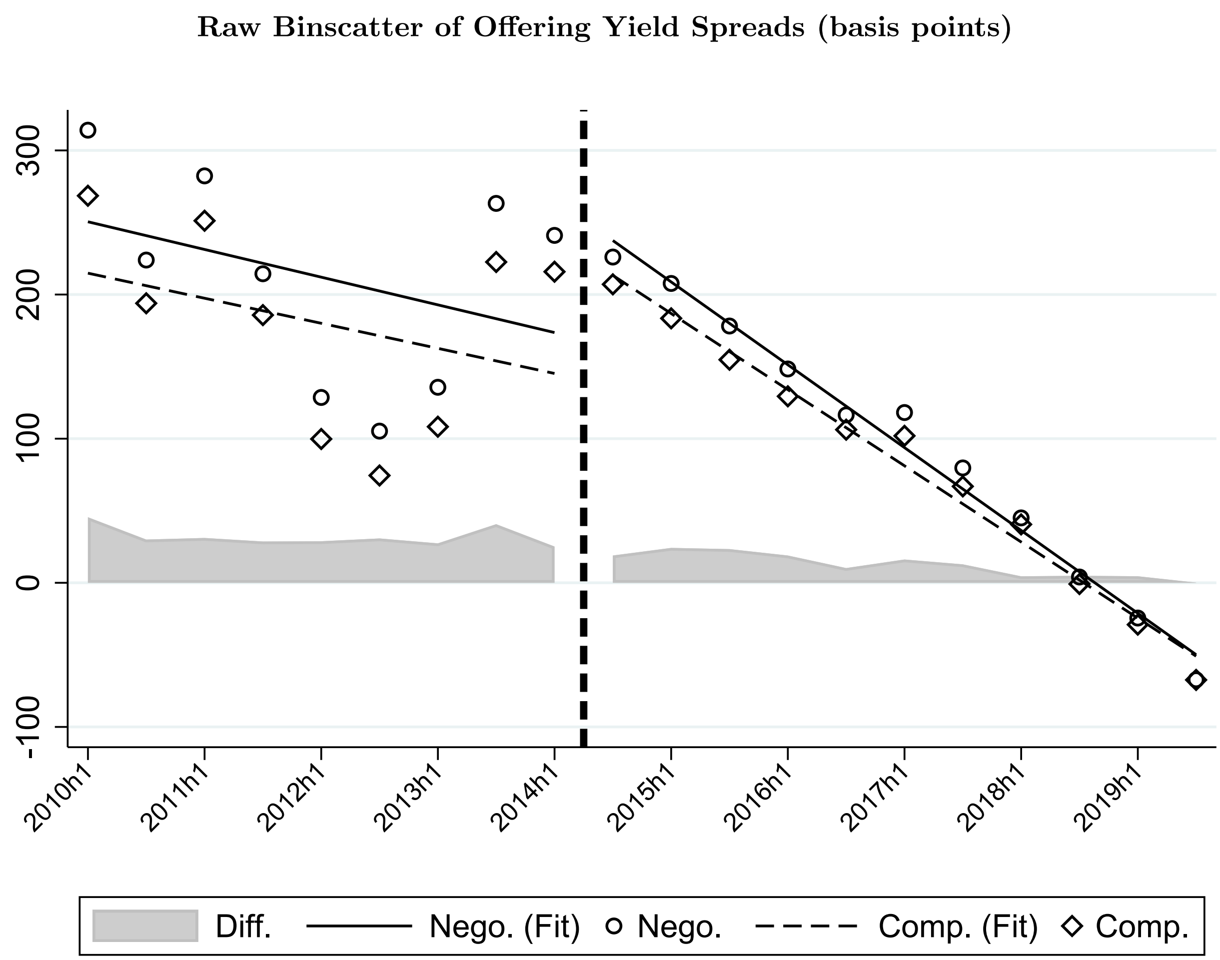
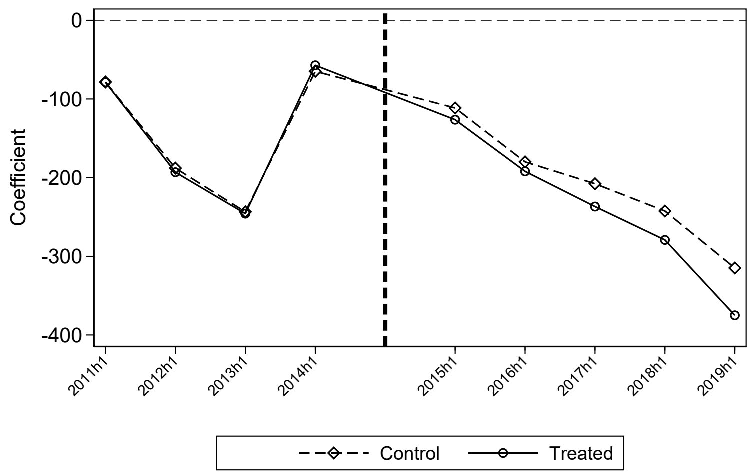


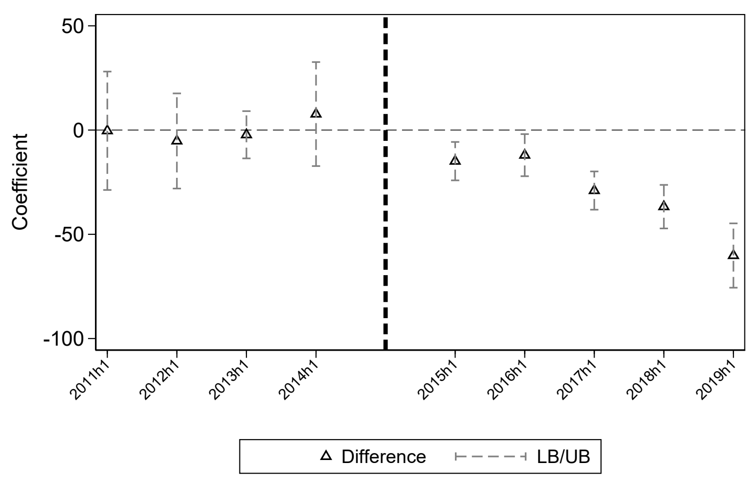
Figure 5: Binscatter of Offering Yield Spreads: This figure reports the binscatter of offering yield spreads in basis points on the y-axis. Each dot is the average of the spreads calculated on every 5^{th} percentile of the sample for treated and control bonds, separately. The figure also shows the corresponding fitted lines for the negotiated and competitively bid bonds. The difference between the two groups is represented in the shaded portion. The observed pattern suggests a parallel trend until June 2014, followed by a downward trend of spreads in the treated bonds after the SEC Municipal Advisor Rule. This analysis should be interpreted in a non-causal way, as no fixed effects and controls are included.

Yield Spreads



(a)

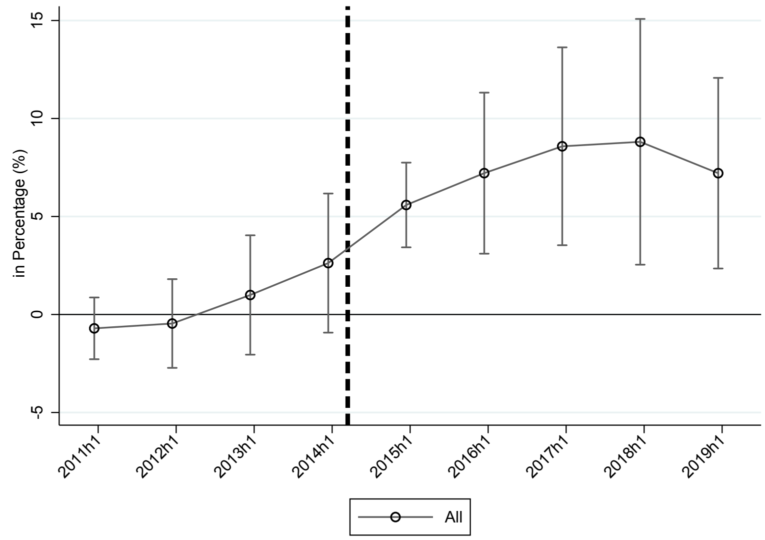
Difference in Yield Spreads



(b)

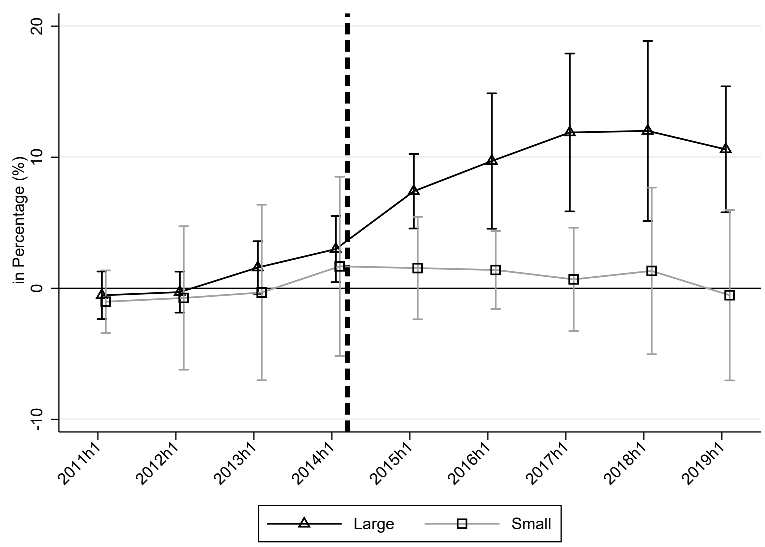
Figure 6: Baseline Result - Treated vs Control: In this figure, I plot the average yield spread for municipal bonds issued based on Equation (3) in Panel (a). Panel (b) shows the differences between the spreads of treated and control bonds. See Table A1 for variables description. The coefficients are shown in basis points. Specifically, the coefficients are obtained from regressing the spreads on yearly interaction dummies for treated and control bonds using issuer fixed effects. These coefficients are depicted on a yearly scale on the x-axis, where the vertical line corresponds to the Municipal Advisor Rule. The omitted benchmark period is the twelve month period before the event window shown above. Standard errors are clustered by state. The dashed lines represent 95% confidence intervals.

All Issuers



(a)

Large vs Small Issuers



(b)

Figure 7: Likelihood of engaging advisor: This figure reports the coefficients showing the weighted average likelihood of issuing advised bonds on the y-axis, *within* issuer. The vertical line corresponds to the SEC Municipal Advisor Rule. I represent these coefficients across all issuers in Panel (a), as well as the subsets of large versus small issuers in Panel (b). Standard errors are clustered at the state level. The dashed lines represent 95% confidence intervals.

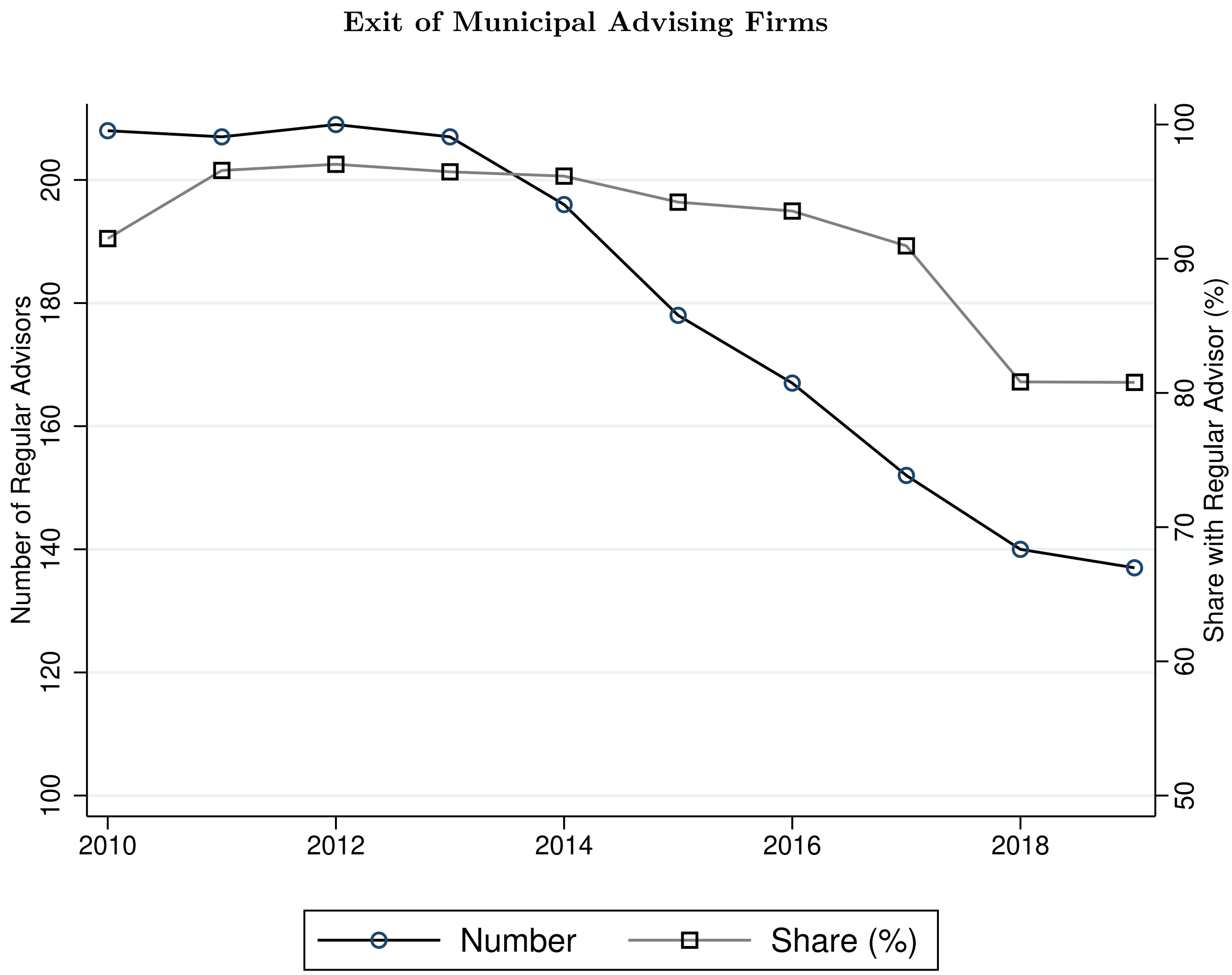
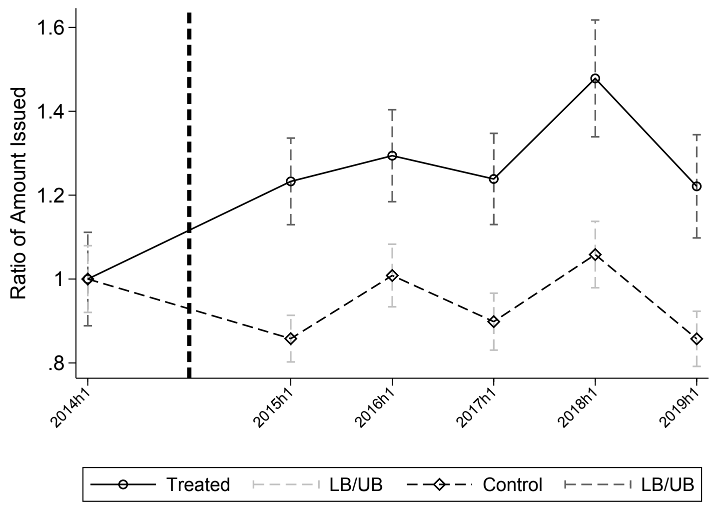


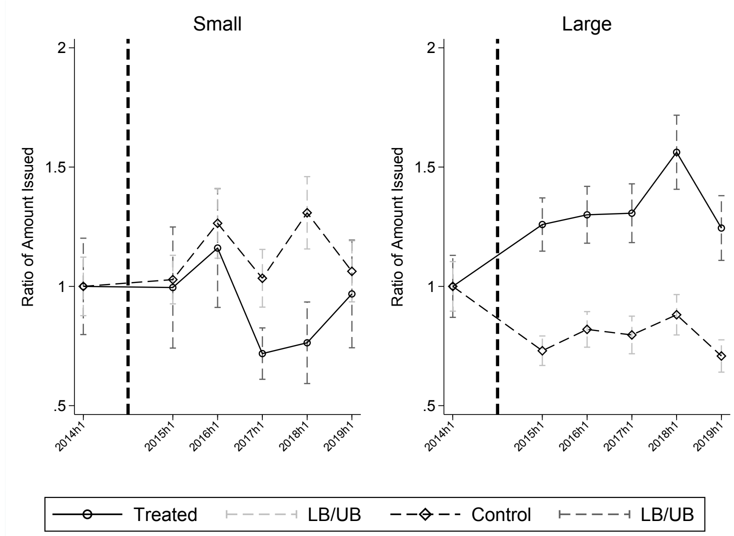
Figure 8: Number of Regular Advisors and Market Share: The figure shows the number of municipal advising firms on the left axis that regularly advise on municipal bond issuance before the SEC Municipal Advisor Rule. This corresponds to advisors in the sample who advise on at least one issuance in each calendar year until June 2014. On the right-hand axis, I plot the market share of these regular advisors during the sample period of 2010-2019. This represents the proportion of municipal debt advised by these advisors to the total municipal debt issued during the year, expressed as a percentage.

New Municipal Bond Issuance



(a)

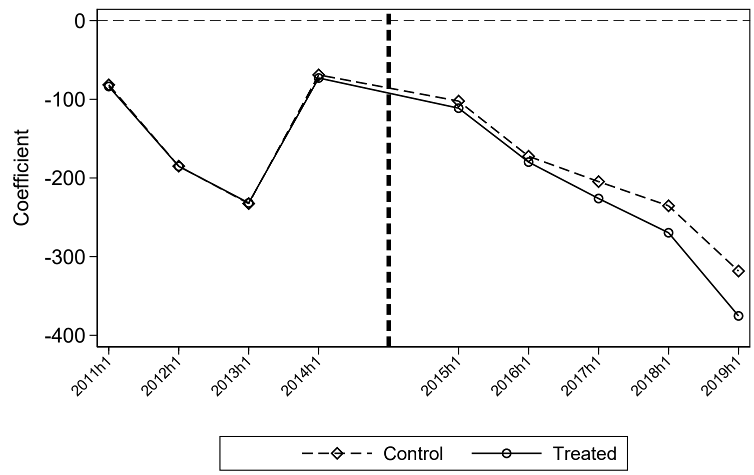
New Municipal Bond Issuance by Size of Issuers



(b)

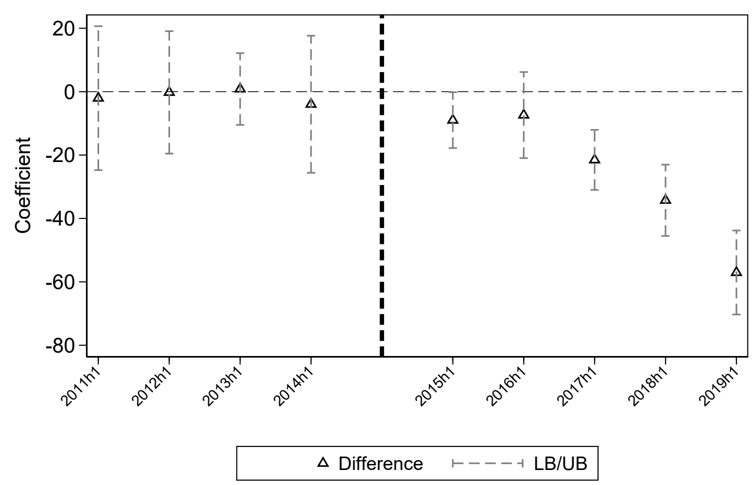
Figure 9: New Municipal Bond Issuance: In this figure, I plot the amount of municipal debt issued with advisors in treated versus control issuers. The benchmark period is during the twelve months before the SEC Municipal Advisor Rule. Panel (a) shows results for all issuers. Panel (b) depicts the sub-samples corresponding to small versus large issuers. Standard errors are clustered by state. The dashed lines show the upper and lower limits based on the standard errors of the mean values.

Yield Spreads (Refunding Bonds)



(a)

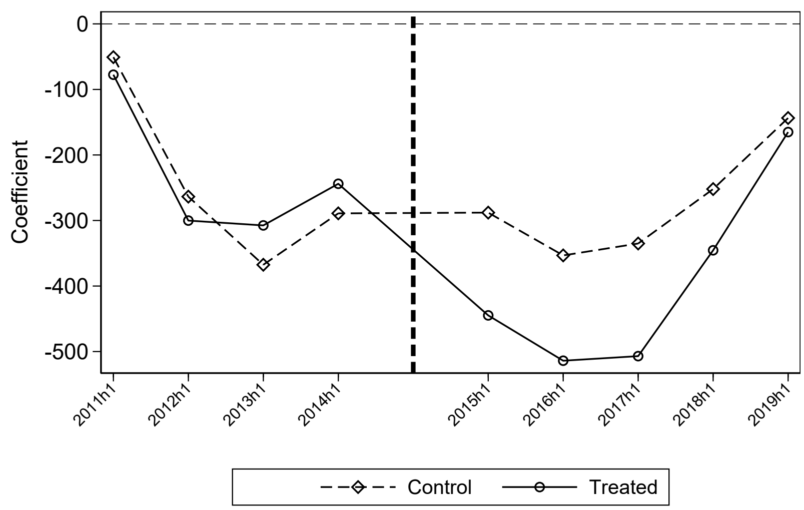
Difference in Yield Spreads (Refunding Bonds)



(b)

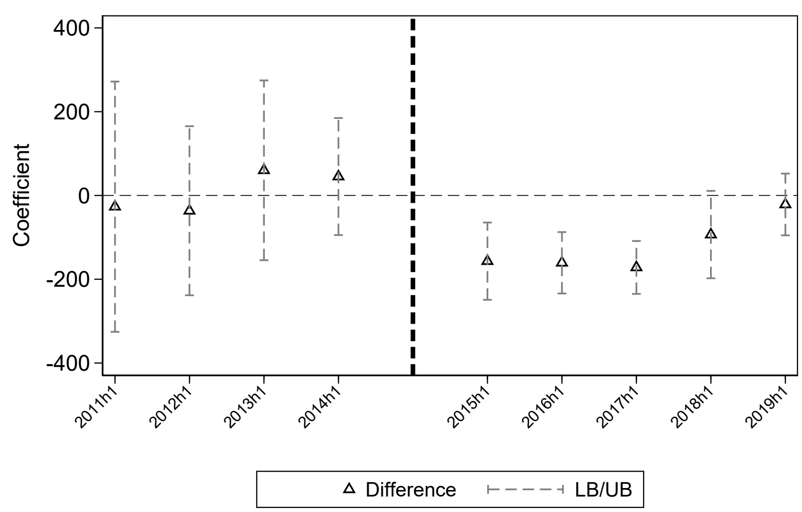
Figure 10: Refunding Bonds: In this figure, I plot the average yield spread for refunding municipal bonds issued based on Equation (3) in Panel (a). Panel (b) shows the differences between the spreads of treated and control bonds. See Table A1 for variables description. The coefficients are shown in basis points. Specifically, the coefficients are obtained from regressing the spreads on yearly interaction dummies for treated and control bonds using issuer fixed effects. These coefficients are depicted on a yearly scale on the x-axis, where the vertical line corresponds to the Municipal Advisor Rule. The omitted benchmark period is the twelve month period before the event window shown above. Standard errors are clustered by state. The dashed lines represent 95% confidence intervals.

Δ(Calling - Refunding) in days



(a)

Difference in Δ(Calling - Refunding) in days



(b)

Figure 11: Timing of Pre-Refunding Bonds: In this figure, I plot the average gap between calling and refunding dates (in days) for pre-refunding municipal bonds using Equation (3) in Panel (a). Panel (b) shows the differences between the gap for treated and control bonds. See Table A1 for variables description. The coefficients are shown in number of days. Specifically, I regress the gap between calling and refunding days on yearly interaction dummies for treated and control bonds using issuer fixed effects. I depict these coefficients on a yearly scale on the x-axis, where the thick vertical line corresponds to the effective date of the Municipal Advisor Rule. The omitted benchmark period is the twelve month period before the event window shown above. Standard errors are clustered by state. The dashed lines represent 95% confidence intervals.

Table 1: Summary Statistics: Municipal Advisors and Municipal Bonds

This table shows the summary statistics for municipal advisors (MA) and municipal bonds in the sample. Panel A reports the top 15 municipal advisors in the data during the sample period of 2010-2019, who advise on fixed rate, tax-exempt bonds sold by municipalities. The number of issues corresponds to the aggregate number of bond issuances advised by the MA. The number of states in which MA's advise is split by total states versus the number of states across which over 50% of the advisor's bond volume is spread. The share % indicates the relative percentage of the advisor's volume in the sample. Panel B provides the municipal bond level characteristics during 2010-2019 for the bonds in the sample. The summary statistics correspond to the new issuance of bonds in the primary market. The key variables are described in Table A1.

Panel A: Municipal Advisors

	Number of Issues	Average No. of Bonds Per Issue	Number of States		Total Volume (USD billion)	Share(%)
			Total	> 50%ile		
THE PFM GROUP	7,707	13	48	6	501.1	22.1
PRAG	1,058	16	27	2	286.2	12.6
FIRST SOUTHWEST	5,274	15	33	1	194.4	8.6
ACACIA FINANCIAL	787	14	13	3	56.0	2.5
MONTAGUE DEROSE	256	16	5	2	51.2	2.3
HILLTOP SECURITIES	1,056	16	25	2	50.0	2.2
LAMONT FINANCIAL	275	17	12	1	49.0	2.2
RBC CAPITAL MARKETS	1,484	14	12	1	47.3	2.1
KAUFMAN AND HALL	304	13	39	7	47.2	2.1
KNN PUBLIC FINANCE	522	15	1	1	42.4	1.9
PONDER & COMPANY	303	13	38	7	37.8	1.7
PIPER JAFFRAY & CO.	1,610	12	20	3	35.2	1.6
ESTRADA HINOJOSA	550	14	2	1	26.1	1.2
DAVENPORT & CO. LLC	573	17	10	2	23.8	1.0
FIELDMAN ROLAPP	630	17	4	1	22.0	1.0

Panel B: Municipal Bonds

	Count	Mean	Std. Dev.	P25	P50	P75
Amount (USD million)	834,924	2.70	10.89	0.3	0.6	1.8
Coupon(%)	834,924	3.52	1.13	2.9	3.4	4.8
Years to Maturity	834,924	9.87	6.15	5.0	8.9	13.9
Offering Price (USD)	834,923	106.62	7.67	100.0	103.9	111.7
Offering Yield(%)	834,924	2.33	1.01	1.6	2.3	3.0
Yield Spread(%)	834,924	1.29	1.20	0.5	1.2	2.1
Callable (Dummy)	834,924	0.47	0.50	0.0	0.0	1.0
General Obligation (Dummy)	834,924	0.60	0.49	0.0	1.0	1.0
Bank Qualified (Dummy)	834,924	0.40	0.49	0.0	0.0	1.0
Cred. Enh. (Dummy)	834,924	0.21	0.41	0.0	0.0	0.0
Insured (Dummy)	834,924	0.16	0.37	0.0	0.0	0.0

Table 2: Impact on Offering Yield Spreads of Local Governments

This table reports the baseline results for the sample using Equation (1) estimating the differential effect on municipal bond yield spreads of treated and control bonds after the Municipal Advisor Rule of 2014. The primary coefficient of interest, β_0, is captured by the interaction term of *Treated* × *Post*. I show the results using offering yield spread as the dependent variable. Specifically, Column (1) reports the results without any controls or fixed effects. In Column (2), I first introduce issuer fixed effects. Column (3) shows results by introducing state × year fixed effects. In Column (4), I add advisor fixed effect. Column (5) reports the results by additionally including bond level controls consisting of coupon (%); log(amount issued in $); dummies for callable bonds, bond insurance, general obligation bond, bank qualification, refunding and credit enhancement; credit rating; remaining years to maturity; and inverse years to maturity. I provide the description of key variables in Table A1. In Column (6), I control for the county-level economic conditions. I use the lagged values for log(labor force) and unemployment rate, and the percentage change in unemployment rate and labor force, respectively. Column (7) replaces advisor fixed effect with advisor × year fixed effect and does not include county-level controls. Finally, Column (8) shows results by also adding county-level controls. In Table IA3, I show our results using offering yields as the dependent variable. T-statistics are reported in brackets and standard errors are clustered at the state level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Dependent Variable:	Yield Spread (basis points)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treated × Post	-25.55***	-26.56***	-12.81***	-12.43***	-14.79***	-14.74***	-12.63***	-12.60***
	[-3.45]	[-5.03]	[-3.12]	[-3.24]	[-5.04]	[-5.02]	[-4.27]	[-4.26]
Treated	26.27***	-11.48	1.50	0.80	8.85***	8.89***	7.58**	7.62**
	[2.79]	[-1.12]	[0.29]	[0.16]	[2.77]	[2.80]	[2.09]	[2.11]
Post	-81.12***	-81.97***	-4.83**	-5.60***	-3.74*	-3.62*	-4.07**	-3.96**
	[-32.73]	[-26.93]	[-2.48]	[-2.69]	[-1.89]	[-1.83]	[-2.15]	[-2.10]
Issuer FE		✓	✓	✓	✓	✓	✓	✓
State-Year FE			✓	✓	✓	✓	✓	✓
Advisor FE				✓	✓	✓		
Bond Controls					✓	✓	✓	✓
County Controls						✓		✓
Advisor-Year FE							✓	✓
Adj.-R^2	0.135	0.345	0.635	0.638	0.847	0.847	0.855	0.855
Obs.	834,924	834,764	834,764	834,760	834,760	834,760	834,741	834,741

Table 3: Impact on Offering Price of New Bonds

This table reports the baseline results for the sample using Equation (1) estimating the differential effect on offering price of treated and control bonds after the Municipal Advisor Rule of 2014. The primary coefficient of interest, β_0, is captured by the interaction term of *Treated* $\times$ *Post*. I show our results using offering price as the dependent variable. Specifically, Column (1) reports the results without any controls or fixed effects. In Column (2), I first introduce issuer fixed effects. Column (3) shows results by introducing state $\times$ year fixed effects. In Column (4), I add advisor fixed effect. Column (5) reports the results by additionally including bond level controls consisting of coupon (%); log(amount issued in \$); dummies for callable bonds, bond insurance, general obligation bond, bank qualification, refunding and credit enhancement; credit rating; remaining years to maturity; and inverse years to maturity. I provide the description of key variables in Table A1. In Column (6), I control for the county-level economic conditions. I use the lagged values for log(labor force) and unemployment rate, and the percentage change in unemployment rate and labor force, respectively. Column (7) replaces advisor fixed effect with advisor $\times$ year fixed effect and does not include county-level controls. Finally, Column (8) shows results by also adding county-level controls. T-statistics are reported in brackets and standard errors are clustered at the state level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Dependent Variable:	Offering Price (per USD 100)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treated $\times$ Post	1.94***	1.81***	1.32***	1.30***	1.25***	1.25***	1.05***	1.05***
	[6.75]	[6.82]	[4.28]	[4.16]	[4.81]	[4.81]	[4.35]	[4.36]
Treated	1.62***	0.57**	0.63***	0.64**	-0.34	-0.34	-0.23	-0.23
	[3.84]	[2.03]	[2.84]	[2.57]	[-1.49]	[-1.49]	[-1.00]	[-1.00]
Post	2.12***	2.37***	0.78***	0.77***	0.59***	0.58***	0.66***	0.65***
	[9.22]	[17.13]	[4.29]	[4.55]	[3.84]	[3.82]	[4.54]	[4.51]
Issuer FE		✓	✓	✓	✓	✓	✓	✓
State-Year FE			✓	✓	✓	✓	✓	✓
Advisor FE				✓	✓	✓		
Bond Controls					✓	✓	✓	✓
County Controls						✓		✓
Advisor-Year FE							✓	✓
Adj.-R^2	0.066	0.361	0.383	0.388	0.768	0.768	0.774	0.774
Obs.	834,924	834,763	834,763	834,759	834,759	834,759	834,740	834,740

Table 4: Impact on Markup (Underpricing) of New Municipal Bonds

This table reports the baseline results for the sample using Equation (1) estimating the differential effect on underpricing of treated and control bonds after the Municipal Advisor Rule of 2014. The primary coefficient of interest, β_0, is captured by the interaction term of *Treated* $\times$ *Post*. In Columns (1)-(8), the dependent variable is the trade-weighted mark-up paid by customers over offering price, as a percentage of the offering price (in basis points). I consider initial trades from the MSRB database within the first 30 days of trading. Specifically, Column (1) reports the results without any controls or fixed effects. In Column (2), I first introduce issuer fixed effects. Column (3) shows results by introducing state $\times$ year fixed effects. In Column (4), I add advisor fixed effect. Column (5) reports the results by additionally including bond level controls consisting of coupon (%); log(amount issued in \$); dummies for callable bonds, bond insurance, general obligation bond, bank qualification, refunding and credit enhancement; credit rating; remaining years to maturity; and inverse years to maturity. I provide the description of key variables in Table A1. In Column (6), I control for the county-level economic conditions. I use the lagged values for log(labor force) and unemployment rate, and the percentage change in unemployment rate and labor force, respectively. Column (7) replaces advisor fixed effect with advisor $\times$ year fixed effect and does not include county-level controls. Finally, Column (8) shows results by also adding county-level controls. I replicate the results in Column (9) using the difference between the trade-weighted average price paid by customers and the offering price, scaled by the offering price. Column (10) shows the baseline results using the difference between the trade-weighted average price paid by customers and the trade-weighted interdealer price, scaled by the interdealer price. T-statistics are reported in brackets and standard errors are clustered at the state level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Dependent Variable:	Trade-weighted Markup (basis points)								$\bar{P}$-$\bar{O}$ (bps)	$\bar{P}$-$\bar{V}$ (bps)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Treated × Post	-5.35**	-7.56***	-7.57***	-6.90**	-6.89**	-6.83**	-6.22**	-6.16**	-5.56**	-10.35***
	[-2.28]	[-4.04]	[-2.70]	[-2.40]	[-2.24]	[-2.24]	[-2.32]	[-2.31]	[-2.45]	[-7.50]
Treated	16.29***	12.29***	12.60***	11.49***	14.49***	14.47***	14.38***	14.35***	13.10***	2.49
	[4.54]	[7.78]	[6.74]	[5.36]	[5.71]	[5.72]	[6.63]	[6.61]	[6.93]	[1.41]
Post	4.49***	3.74***	2.03	2.40	2.76	2.76	2.63	2.63	2.45*	1.72*
	[4.09]	[4.87]	[1.05]	[1.29]	[1.58]	[1.60]	[1.54]	[1.55]	[1.84]	[1.81]
Issuer FE		✓	✓	✓	✓	✓	✓	✓	✓	✓
State-Year FE			✓	✓	✓	✓	✓	✓	✓	✓
Advisor FE				✓	✓	✓	✓	✓	✓	✓
Bond Controls					✓	✓	✓	✓	✓	✓
County Controls						✓		✓	✓	✓
Advisor-Year FE							✓	✓	✓	✓
Adj.-R^2	0.007	0.110	0.117	0.126	0.185	0.186	0.190	0.190	0.223	0.244
Obs.	786,528	786,326	786,326	785,754	785,754	785,754	785,749	785,749	785,748	785,748

Table 5: Impact on Price Dispersion (Liquidity) of New Bonds

This table reports the baseline results for the sample using Equation (1) estimating the differential effect on price dispersion of treated and control bonds after the Municipal Advisor Rule of 2014. I use trades during the first month after issuance to construct this measure using Schwert (2017), based on Jankowitsch, Nashikkar, and Subrahmanyam (2011). The primary coefficient of interest, β_0, is captured by the interaction term of *Treated* × *Post*. Specifically, Column (1) reports the results without any controls or fixed effects. In Column (2), I first introduce issuer fixed effects. Column (3) shows results by introducing state × year fixed effects. In Column (4), I add advisor fixed effect. Column (5) reports the results by additionally including bond level controls consisting of coupon (%); log(amount issued in $); dummies for callable bonds, bond insurance, general obligation bond, bank qualification, refunding and credit enhancement; credit rating; remaining years to maturity; and inverse years to maturity. I provide the description of key variables in Table A1. In Column (6), I control for the county-level economic conditions. I use the lagged values for log(labor force) and unemployment rate, and the percentage change in unemployment rate and labor force, respectively. Column (7) replaces advisor fixed effect with advisor × year fixed effect and does not include county-level controls. Finally, Column (8) shows results by also adding county-level controls. In Table IA4, I show the results using the Amihud measure as an alternative way to capture liquidity. T-statistics are reported in brackets and standard errors are clustered at the state level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Dependent Variable:	Price Dispersion (per USD 100)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treated × Post	-0.05***	-0.04***	-0.03***	-0.03***	-0.03***	-0.03***	-0.03***	-0.03***
	[-8.68]	[-8.89]	[-6.47]	[-6.43]	[-6.80]	[-6.81]	[-7.02]	[-7.02]
Treated	0.00	-0.02***	-0.03***	-0.03***	-0.01*	-0.01*	-0.01*	-0.01*
	[0.21]	[-4.91]	[-4.54]	[-5.18]	[-1.78]	[-1.78]	[-1.85]	[-1.86]
Post	0.07***	0.06***	0.00	0.00	0.00	0.00	0.00	0.00
	[13.49]	[10.35]	[0.24]	[0.23]	[1.15]	[1.13]	[0.65]	[0.64]
Issuer FE		✓	✓	✓	✓	✓	✓	✓
State-Year FE			✓	✓	✓	✓	✓	✓
Advisor FE				✓	✓	✓		
Bond Controls					✓	✓	✓	✓
County Controls						✓		✓
Advisor-Year FE							✓	✓
Adj.-R^2	0.020	0.116	0.130	0.132	0.317	0.317	0.323	0.323
Obs.	786,528	786,326	786,326	786,322	786,322	786,322	786,303	786,303

Table 6: Impact Due to Advisor's Ex-ante Role in "Selecting" Underwriter

This table reports the results using Equation (1) to show the differential effect among issuers for whom advisors play a greater role in selecting underwriters. The dependent variable is offering yield spread. I use the average (Columns (1)-(3)) and weighted average (Columns (4)-(6)) of ex-ante likelihood of a new underwriter being introduced by an advisor for a given issuer, respectively. Specifically, I interact the equation with dummies corresponding to below and above median values for this measure among issuers. This analysis also includes group × year fixed effects. The baseline specification of Column (8) in Table 2 is shown in Columns (3) and (6). T-statistics are reported in brackets and standard errors are clustered at the state level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Dependent Variable:	Yield Spread (basis points)					
Based on Issuers':	Average			Weighted Average		
Treated × Post	(1)	(2)	(3)	(4)	(5)	(6)
Below Median	-9.56*	-5.16	-3.76	-9.58*	-5.19	-3.80
	[-1.70]	[-1.03]	[-0.86]	[-1.71]	[-1.04]	[-0.86]
Above Median	-19.93***	-18.56***	-16.26***	-19.91***	-18.53***	-16.23***
	[-7.86]	[-8.21]	[-7.35]	[-7.86]	[-8.19]	[-7.32]
Difference	10.37	13.40	12.50	10.33	13.35	12.43
p-value	0.05	0.01	0.01	0.05	0.01	0.01
Issuer FE	✓	✓	✓	✓	✓	✓
Controls	✓	✓	✓	✓	✓	✓
Advisor FE	✓	✓		✓	✓	
Group-Yr. FE	✓	✓	✓	✓	✓	✓
State-Yr. FE		✓	✓		✓	✓
Advisor-Yr. FE			✓			✓
Adj.-R^2	0.839	0.844	0.852	0.839	0.844	0.852
Obs.	776,304	776,304	776,286	776,304	776,304	776,286

Table 7: Robustness Tests

In this table I report results for various robustness tests on the baseline specification, i.e., Column (8) of Table 2. Columns (1)-(2) show the baseline effect by changing the dependent variable to after-tax yield and after-tax yield spread, respectively. In Columns (3)-(11), I report results based on alternative econometric specifications. I introduce additional fixed effects to account for unobserved factors that may be varying over time. Specifically, Column (3) reports baseline results by adding issuer-type $\times$ year fixed effects. Column (4) shows results by adding bond purpose fixed effects. I add bond purpose $\times$ year fixed effect in Column (5). Columns (6) and (7) show results by adding underwriter fixed effect and underwriter $\times$ year fixed effect, respectively. In Columns (8) and (9), I control for unobserved pairing between issuers and advisors, as well as issuers and underwriters, separately, by adding issuer-advisor pair fixed effect and issuer-underwriter pair fixed effect, respectively. These specifications include time unvarying advisor and underwriter fixed effects, respectively. Column (10) shows results with advisor $\times$ state fixed effects. In Column (11), I also add county $\times$ year fixed effects. I consider additional tax considerations in Columns (12)-(14). First, I relax the sample of bonds to include taxable bonds in Columns (12)-(13). In Column (13), I further omit bonds from five states (IL, IA, KS, OK, WI) that tax interest income on municipal bonds issued in-state or out-of-state (Gao et al., 2021). Column (14) shows results using bonds that are exempt from both state and federal income tax simultaneously. Columns (15)-(18) report results focusing on sub-samples of homogeneous bonds. Accordingly, in Column (15), I drop bonds in which the advisor and underwriter are same. Column (16) shows results by dropping callable bonds. I drop insured bonds in Column (17). Finally, I focus on only the new money bonds in Column (18). The results in Columns (19)-(21) focus on additional geographic considerations. I keep only local bonds (by dropping state level bonds) in Column (19). Conversely, I show results using only the state level bonds in Column (20). In Column (21), I report the baseline results by dropping issuances from the three largest municipal bond issuers, namely: California (CA), New York (NY) and Texas (TX). I consider alternative levels of clustering standard errors in Columns (22)-(32). In Columns (22)-(26), I cluster standard errors by advisor, underwriter, issuer, issuer(2), and bond issue, respectively. Issuer(2) in Column (25) refers to weakly identifying borrowers based on the first six-digits of the bond CUSIP (Gao et al., 2021). Columns (27)-(28) double cluster standard errors along two dimensions in the geography of issuers: state-advisor, and advisor-issuer, respectively. Finally, in Columns (29)-(32), I double cluster standard errors over time and across bonds using: state and year, advisor and year, state and year-month, and advisor and year-month, respectively. In Table IA7, I replicate these results using offering yield as the dependent variable. Additionally, I report robustness results for offering price as the dependent variable in Table IA8. T-statistics are reported in brackets and standard errors are clustered at the state level, unless otherwise specified. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Dependent Variable:	Yield Spread (basis points)										
	Other Dependent Variables		Alternative Specifications								
	After-tax Yield	After-tax Yield Spread	Add Issuer-Type Year FE	Add Purpose FE	Add Purpose Year FE	Add UW FE	Add UW-Yr. FE	Add Iss.-MA FE	Add Iss.-UW FE	Add MA-State FE	Add County-Yr. FE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Treated × Post	-18.13***	-19.69***	-12.02***	-12.63***	-12.19***	-12.92***	-11.07***	-14.13***	-14.20**	-11.88***	-10.65***
	[-4.23]	[-4.33]	[-4.05]	[-4.19]	[-3.86]	[-4.45]	[-3.49]	[-4.25]	[-2.60]	[-3.86]	[-3.01]
Adj.-R^2	0.867	0.853	0.855	0.855	0.855	0.856	0.860	0.857	0.891	0.856	0.871
Obs.	833,343	833,343	833,667	833,348	833,348	834,730	834,707	834,670	834,297	834,731	834,629

Dependent Variable:	Yield Spread (basis points)									
	Tax Considerations			Bond Considerations				Geographic Considerations		
	Include Taxable		Exempt	Drop same	Drop	Drop	Only	Keep	Keep	Drop
		(-Taxable States)	(Fed.+State)	Adv.-UW. bonds	Callable	Insured	New money	Local	State	CA,NY,TX
	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
Treated × Post	-11.93***	-11.08***	-11.94***	-12.64***	-11.44***	-14.88***	-22.90***	-10.81***	-17.15**	-15.94***
	[-4.39]	[-4.23]	[-4.07]	[-4.32]	[-5.53]	[-5.92]	[-4.96]	[-3.50]	[-2.59]	[-5.77]
Adj.-R^2	0.836	0.834	0.854	0.854	0.876	0.856	0.880	0.861	0.836	0.859
Obs.	905,084	794,062	770,446	830,458	443,572	698,776	415,926	751,278	83,456	519,544

Dependent Variable:	Yield Spread (basis points)										
	Alternative Clustering										
	Advisor	Underwriter	Issuer	Issuer(2)	Issue	State, Advisor	Advisor, Issuer	State, Year	Advisor, Year	State, YM	Advisor, YM
	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)
Treated × Post	-12.60***	-12.60***	-12.60***	-12.60***	-12.60***	-12.60***	-12.60***	-12.60***	-12.60***	-12.60***	-12.60***
	[-4.85]	[-6.42]	[-6.40]	[-8.40]	[-9.92]	[-3.99]	[-4.47]	[-3.49]	[-3.43]	[-4.12]	[-4.59]
Adj.-R^2	0.855	0.855	0.855	0.855	0.855	0.855	0.855	0.855	0.855	0.855	0.855
Obs.	834,741	834,741	834,741	834,741	834,741	834,741	834,741	834,741	834,741	834,741	834,741

Table 8: Heterogeneity by Size of Issuers

This table reports the results using Equation (1) to show the differential effect among issuers based on their ex-ante size. I use the average (Columns (1)-(3)) and median (Columns (4)-(6)) size of ex-ante issuances, respectively. Specifically, I interact the equation with dummies corresponding to small and large values for this measure among issuers. This analysis also includes group × year fixed effects. The baseline specification of Column (8) in Table 2 is shown in Columns (3) and (6). Panel A shows results using the offering yield spread at the time of issuance as the dependent variable. In Panel B, the dependent variable is the offering price at the time of issuance. Finally, Panel C corresponds to underpricing with trade-weighted mark-up being the dependent variable. T-statistics are reported in brackets and standard errors are clustered at the state level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Panel A: Evidence from Yield Spreads

Dependent Variable:	Yield Spread (basis points)					
Based on Issuers':	Average size, ex-ante			Median size, ex-ante		
Treated × Post	(1)	(2)	(3)	(4)	(5)	(6)
× Small	-5.62	-1.08	-1.66	-4.45	-0.47	-1.13
	[-0.71]	[-0.15]	[-0.24]	[-0.55]	[-0.06]	[-0.16]
× Large	-18.75***	-16.75***	-14.34***	-19.50***	-17.56***	-15.08***
	[-7.02]	[-7.85]	[-6.32]	[-7.23]	[-8.05]	[-6.72]
Difference	13.13	15.67	12.67	15.05	17.09	13.95
p-value	0.08	0.02	0.06	0.07	0.02	0.06
Issuer FE	✓	✓	✓	✓	✓	✓
Controls	✓	✓	✓	✓	✓	✓
Advisor FE	✓	✓		✓	✓	
Group-Yr. FE	✓	✓	✓	✓	✓	✓
State-Yr. FE		✓	✓		✓	✓
Advisor-Yr. FE			✓			✓
Adj.-R^2	0.843	0.847	0.855	0.843	0.847	0.855
Obs.	834,760	834,760	834,741	834,760	834,760	834,741

Panel B: Evidence from Offering Price

Dependent Variable:	Offering Price (per USD 100)					
Based on Issuers':	Average size, ex-ante			Median size, ex-ante		
Treated × Post	(1)	(2)	(3)	(4)	(5)	(6)
× Small	0.55	0.15	0.13	0.53	0.18	0.17
	[1.14]	[0.33]	[0.29]	[1.09]	[0.40]	[0.38]
× Large	1.57***	1.38***	1.18***	1.59***	1.41***	1.21***
	[6.79]	[7.81]	[7.18]	[7.41]	[8.53]	[7.88]
Difference	1.03	1.24	1.05	1.06	1.23	1.04
p-value	0.00	0.00	0.01	0.00	0.00	0.01
Issuer FE	✓	✓	✓	✓	✓	✓
Controls	✓	✓	✓	✓	✓	✓
Advisor FE	✓	✓		✓	✓	
Group-Yr. FE	✓	✓	✓	✓	✓	✓
State-Yr. FE		✓	✓		✓	✓
Advisor-Yr. FE			✓			✓
Adj.-R^2	0.765	0.769	0.774	0.765	0.769	0.774
Obs.	834,759	834,759	834,740	834,759	834,759	834,740

Panel C: Evidence from Underpricing

Dependent Variable:	Trade-weighted Mark-up (basis points)					
Based on Issuers':	Average size, ex-ante			Median size, ex-ante		
Treated × Post	(1)	(2)	(3)	(4)	(5)	(6)
× Small	-2.97	-2.80	-4.56	-2.44	-2.15	-3.95
	[-1.01]	[-0.91]	[-1.50]	[-0.57]	[-0.47]	[-0.90]
× Large	-7.64***	-7.70**	-7.46***	-7.63***	-7.88***	-7.60***
	[-3.12]	[-2.64]	[-2.81]	[-3.43]	[-3.11]	[-3.32]
Difference	4.67	4.90	2.90	5.19	5.73	3.65
p-value	0.03	0.02	0.23	0.08	0.04	0.22
Issuer FE	✓	✓	✓	✓	✓	✓
Controls	✓	✓	✓	✓	✓	✓
Advisor FE	✓	✓		✓	✓	
Group-Yr. FE	✓	✓	✓	✓	✓	✓
State-Yr. FE		✓	✓		✓	✓
Advisor-Yr. FE			✓			✓
Adj.-R^2	0.177	0.180	0.190	0.177	0.180	0.190
Obs.	786,322	786,322	786,303	786,322	786,322	786,303

Table 9: Heterogeneity by Sophistication of Issuers

This table reports the results using Equation (1) to show the differential effect among issuers based on their ex-ante size. The dependent variable is offering yield spread. I use the average (Columns (1)-(3)) and median (Columns (4)-(6)) size of ex-ante issuances, respectively. Specifically, I interact the equation with dummies corresponding to small and large values for this measure among issuers. This analysis also includes group × year fixed effects. The baseline specification of Column (8) in Table 2 is shown in Columns (3) and (6). T-statistics are reported in brackets and standard errors are clustered at the state level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Dependent Variable:	Yield Spread (basis points)				
Based on Issuers':	Complexity of Bonds (ex-ante)		Credit	Average Wages	Fraction
	All	Advised	Enhancement	of Finance Staff	advised
Treated × Post	(1)	(2)	(3)	(4)	(5)
Below Median	-4.22	-7.71***	-8.73**	-5.97*	
	[-1.40]	[-3.33]	[-2.04]	[-1.87]	
Above Median	-18.89***	-14.71***	-15.76***	-12.63***	
	[-5.81]	[-3.33]	[-5.86]	[-4.84]	
High					-9.85**
					[-2.62]
Low					-17.02***
					[-6.18]
Difference	14.68	6.99	7.02	6.66	7.18
p-value	0.00	0.08	0.07	0.02	0.09
Issuer FE	✓	✓	✓	✓	✓
Advisor-Year FE	✓	✓	✓	✓	✓
State-Year FE	✓	✓	✓	✓	✓
Group-Year FE	✓	✓	✓	✓	✓
Adj.-R^2	0.853	0.851	0.853	0.854	0.853
Obs.	712,422	685,294	709,792	610,873	709,785

Table 10: Evidence from Newly Advised Issuers

This table reports the results using Equation (1) estimating the differential effect on yield spreads of treated and control bonds after the Municipal Advisor Rule of 2014 for newly advised issuers. In Columns (1)-(3), I show our results using yield spreads as the dependent variable. I restrict the sample to issuers who did not use advisors before the SEC Rule but always recruited them afterward in Columns (1)-(2). In Column (3), I also include some issuers who engage advisors for only some of their bonds after the Rule. The primary coefficient of interest, β_0, is captured by the interaction term of *Treated* $\times$ *Post*. Specifically, Column (1) reports the results without any controls. Thereafter, I introduce bond and county level controls, consisting of coupon (%); log(amount issued in \$); dummies for callable bonds, bond insurance, general obligation bond, refunding, bank qualification, refunding, and credit enhancement; credit rating; remaining years to maturity; and inverse years to maturity; lagged values for log(labor force) and unemployment rate, and the percentage change in unemployment rate and labor force, respectively. I provide the description of key variables in Table A1. I follow a similar scheme for Columns (4)-(6) with offering yield as the dependent variable. T-statistics are reported in brackets and standard errors are clustered at the state level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Dependent Variable:	Yield Spread (basis points)			Offering Yield (basis points)		
Extent of Transition:	Complete		Partial	Complete		Partial
	(1)	(2)	(3)	(4)	(5)	(6)
Treated $\times$ Post	5.01	2.75	5.58	-2.46	-1.34	4.35
	[0.82]	[0.48]	[1.00]	[-0.30]	[-0.26]	[1.10]
Issuer FE	✓	✓	✓	✓	✓	✓
State-Yr. FE	✓	✓	✓	✓	✓	✓
Bond Controls		✓	✓		✓	✓
County Controls		✓	✓		✓	✓
Adj.-R^2	0.725	0.913	0.885	0.293	0.900	0.864
Obs.	24,242	24,242	34,078	24,242	24,242	34,078

Table 11: Evidence from the Exit of Municipal Advisors (MA)

This table reports the results using Equation (1) with interactions to show the differential effect among issuers based on the exit of municipal advisors (MA). This analysis also includes group × year fixed effects. Column (1) shows results among all issuers with interactions corresponding to whether the issuer primarily depended on an exiting advisor or not. I define issuers linked to advisors when more than 50% of their municipal debt issuance in the pre-period is advised by the exiting advisor. Alternatively, results are robust to using a lower threshold of 25% of municipal debt issuance by the exiting advisor, as shown in Table IA11. I focus on the exit of regular advisors. These represent municipal advisors with at lease one issuance in each calendar year before the SEC Municipal Advisor Rule in the sample. Columns (2) and (3) show results for issuers that depend on exiting advisors. For these issuers, I show the heterogeneity between small and large issuers based on the median size of ex-ante issuances. Results are robust to using the average size of ex-ante issuances (Table IA12). Column (2) shows results for advised bonds only. Column (3) also includes bonds issued without any advisors, and the analysis does not include advisor × year fixed effects. T-statistics are reported in brackets and standard errors are clustered at the state level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Dependent Variable:	Yield Spread (basis points)		
Sample of Issuers:	All	Depending on Exiting MA	
Treated × Post	(1)	(2)	(3)
× Other	-16.61***		
	[-5.60]		
× Depended on Exiting MA	-0.73		
	[-0.22]		
× Small		15.89***	14.08*
		[4.18]	[1.94]
× Large		-8.59**	-8.20***
		[-2.43]	[-2.68]
Difference	-15.87	24.47	22.28
p-value	0.00	0.00	0.01
Issuer FE	✓	✓	✓
State-Yr. FE	✓	✓	✓
Controls	✓	✓	✓
Group-Yr. FE	✓	✓	✓
Advisor-Yr. FE	✓	✓	
Adj.-R^2	0.855	0.861	0.854
Obs.	834,741	234,679	275,381

Table 12: Evidence from Refunding Bonds

This table reports the baseline results for the sample of refunding bonds using Equation (1) estimating the differential effect on yield spreads of treated and control bonds after the Municipal Advisor Rule of 2014. The primary coefficient of interest, β_0, is captured by the interaction term of *Treated* × *Post*. I include the full set of controls and fixed effects in each Column corresponding to the baseline specification in Column (8) of Table 2, showing results for different dependent variables. Specifically, Column (1) reports the results using offering yields as the outcome. I use the after-tax yields as the dependent variable in Column (2). For Column (3), I use the preferred dependent variable in the form of yield spread. Finally, Column (4) shows the effect on after-tax yield spreads. I provide the description of key variables in Table A1. T-statistics are reported in brackets and standard errors are clustered at the state level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Dependent Variable:	Offering Yield (bps) (1)	After-tax Yield (bps) (2)	Yield Spread (bps) (3)	After-tax Yield Spread (bps) (4)
Treated × Post	-7.93***	-11.93***	-7.54***	-11.75***
	[-2.95]	[-2.82]	[-3.07]	[-2.97]
Treated	7.10**	11.13**	6.39***	10.37***
	[2.59]	[2.52]	[2.77]	[2.69]
Post	-8.19***	-14.90***	-6.14***	-12.78***
	[-5.62]	[-5.76]	[-2.92]	[-4.09]
Issuer FE	✓	✓	✓	✓
Bond Controls	✓	✓	✓	✓
County Controls	✓	✓	✓	✓
State-Yr. FE	✓	✓	✓	✓
Advisor-Yr. FE	✓	✓	✓	✓
Adj.-R^2	0.880	0.880	0.864	0.865
Obs.	418,989	418,318	418,623	417,952

Table 13: Evidence from Timing of pre-refundings

This table reports the baseline results for the sample using Equation (1) estimating the differential effect on the timing of pre-refunding bonds for the treated and control bonds after the Municipal Advisor Rule of 2014. I restrict the sample to bonds that are pre-refunded and are callable. In Columns (1)-(6), I focus on all bonds with call option unlocking during the sample period. The primary coefficient of interest, β_0, is captured by the interaction term of *Treated* $\times$ *Post*. Our dependent variable is the gap between calling and refunding dates (in days) for bonds in Columns (1)-(5). I use the logged transformation of gap days in Columns (6) as the dependent variable. Specifically, Column (1) reports the results with issuer fixed effects. Column (2) shows results by additionally including state $\times$ year fixed effects. In Column (3), I include advisor fixed effects. Column (4) shows results with bond level controls consisting of coupon (%); log(amount issued in \$); dummies for callable bonds, bond insurance, general obligation bond, bank qualification, refunding, and credit enhancement; remaining years to maturity; and inverse years to maturity. I provide the description of key variables in Table A1. In Column (5), I control for the county-level economic conditions. I use the lagged values for log(labor force) and unemployment rate, and the percentage change in unemployment rate and labor force, respectively. Column (6) shows the results with logged value of gap days as the dependent variable. T-statistics are reported in brackets and standard errors are clustered at the state level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Dependent Variable:	Δ(Calling - Refunding) in days					Log(Δ)
	(1)	(2)	(3)	(4)	(5)	(6)
Treated × Post	-147.39**	-144.21**	-139.16**	-143.48**	-143.39**	-0.23*
	[-2.07]	[-2.26]	[-2.14]	[-2.13]	[-2.17]	[-1.70]
Treated	42.60	51.16	44.44	21.20	16.83	-0.14*
	[0.78]	[0.99]	[0.88]	[0.47]	[0.38]	[-1.72]
Post	-6.63	68.57	71.66*	78.22*	77.27*	0.02
	[-0.30]	[1.61]	[1.75]	[1.77]	[1.71]	[0.21]
Issuer FE	✓	✓	✓	✓	✓	✓
State-Yr. FE		✓	✓	✓	✓	✓
Advisor FE			✓	✓	✓	✓
Bond Controls				✓	✓	✓
County Controls					✓	✓
Adj.-R^2	0.491	0.561	0.583	0.611	0.612	0.654
Obs.	131,841	131,840	131,838	131,838	131,838	130,572

For Online Publication–Internet Appendix

IA1 SEC Municipal Advisor Rule

As shown in Figure 1a, municipalities issue over USD 400 billion of municipal bonds each year to finance various infrastructure and public utility projects. However, these municipalities may often lack the financial sophistication to navigate the issuance process (Garrett, 2021). Under the Congressional mandate of June 1975, the MSRB has been charged with protecting investors to prevent fraud and financial irregularities in the municpial bond market[14]. Following the financial crisis of 2007-09, Congress passed the Dodd-Frank Wall Street Reform and Consumer Protection Act in 2010. This Act introduced major changes to the regulatory framework and operations of the financial service industry. It also included several provisions concerning SEC rulemaking.

Under this framework, the SEC drew up the Municipal Advisor Rule which became effective on July 1, 2014. Specifically, it became unlawful for a municipal advisor (MA) to provide advice to or on behalf of a municipal entity or obligated person with respect to municipal financial products or the issuance of municipal securities unless the MA is registered with the SEC. Prior to this reform, only broker-dealers and banks were subject to federal regulatory requirements. The SEC sought to mitigate some of the problems observed in the conduct of municipal advisors in the municipal bond market. This included the municipal advisor's failure to place the duty of loyalty to their clients ahead of their own interests (White, 2014). Additionally, the SEC Commissioner noted in a statement in 2013[15]:

> Our dedicated public servants were relying on municipal advisors whose advisory activities generally did not require them to register with the Commission, or any other federal, state, or self-regulatory entity. And a lack of meaningful regulation over these advisors created confusion, and in some instances, horrific abuses. Sadly, the shortcomings of this hands-off regulatory regime became glaringly apparent during the last several years as we learned about numerous examples of bad behavior, including self-dealing and excessive fees.

Importantly, advisors owe fiduciary responsibility to municipal clients under the MA Rule and cannot act in ways that my be unfavorable to their clients. This would encompass the twin re-

[14] https://www.msrb.org/About-MSRB/About-the-MSRB/Creation-of-the-MSRB.aspx

[15] https://www.sec.gov/news/statement/2013-09-18-open-meeting-statement-kms

quirements of duty of care, and duty of loyalty. According to the former, advisors must exert effort on behalf of the issuer in order to make a recommendation. The duty of loyalty requires advisors to uphold the interests of the issuer superior to their own. Failing to adhere to their fiduciary responsibility, advisors may be held liable for adverse outcomes to issuers during municipal bond issuance. The SEC MA Rule also clarified what constitutes municipal advice and therefore under what circumstances the registration requirements would be applicable. Broadly, the SEC documented “advice” as any recommendation particularized to specific needs, objectives, and circumstances of a municipal entity. Overall, the SEC Municipal Advisor Rule introduced a new set of standards applicable to municipal advisors, with an aim to help municipal issuers.

IA2 Advisor Names

There is substantial variation in the names used by FTSE Russell municipal bond database to record municipal advisors involved in the issuance of bonds. Often these variations are due to spellings like “BACKSTORM MCCARLEY BERRY & COMPANY LLC” vs “BACKSTROM MCCARLEY BERRY & COMPANY”. I investigate the bond offer statement associated with the CUSIP to verify the corresponding entity and update the standardized name. Besides the jumbled spelling errors, I also come across typos and mistakes due to omitted letters. For example, “BERKSHIRE BANK” and “BERSHIRE BANK” correspond to the same municipal advisor. Further, I also account for alternative company name extensions, such as, “LLC”, “INC”, “Co.” or “CO.”. These extensions are recorded differently over time for the same company. Occasionally, the names would omit portions of the names altogether: “SUDSINA & ASSOCIATES” was also reported as “SUDSINA”. To verify against mismatching firm names, I rely on logos printed on the bond’s offering statement in addition to the official address provided.

Other instances of spelling differences involve special characters like “.” or “,” and “&”. Clearly, these are easy to handle and to resolve. I also need to update names for subsidiaries and affiliated company names. These would also often involve mergers and acquisitions. Following Cestau (2020), I retroactively replace the names of the merged entities with the name of the new company. To an extent, this assumes that client relationships prevailed even after the M&A activity. Indeed I do find evidence where both sets of names are found in the offering statements. This could also be due to delay in sale of bonds, especially via negotiation. Thus, offer statements may reflect contractual engagements before or after the merger activity. As a result, I identify these entities under a common name: for example, "MERRILL LYNCH & COMPANY" and "BANC OF AMERICA SECURITIES" as "BANC OF AMERICA SECURITIES". I also find limited anecdotal evidence suggesting that acquisitions involve retention of officials in the new company.

Still other challenges include names where firms operate using different brand names. For example, "SUSAN D. MUSSELMAN INC", "SDM ADVISORS INC" and "DASHENMUSSELMAN INC" are captured differently. However, I represent them as "A DASHEN & ASSOCIATES" by checking the names of principals and office locations recorded under each company. I believe that it is very difficult to identify abbreviated names corresponding to the same umbrella company without verifying each name separately. In some cases, I need to ascertain the office locations from internet search versus that reported in the bond offering statement. But I also come across simpler associations where alternative trading names used by companies are seemingly related, such as, "RV NORENE & ASSOCIATE INC" and "CROWE NORENE".

Quantile-quantile plot of bond characteristics

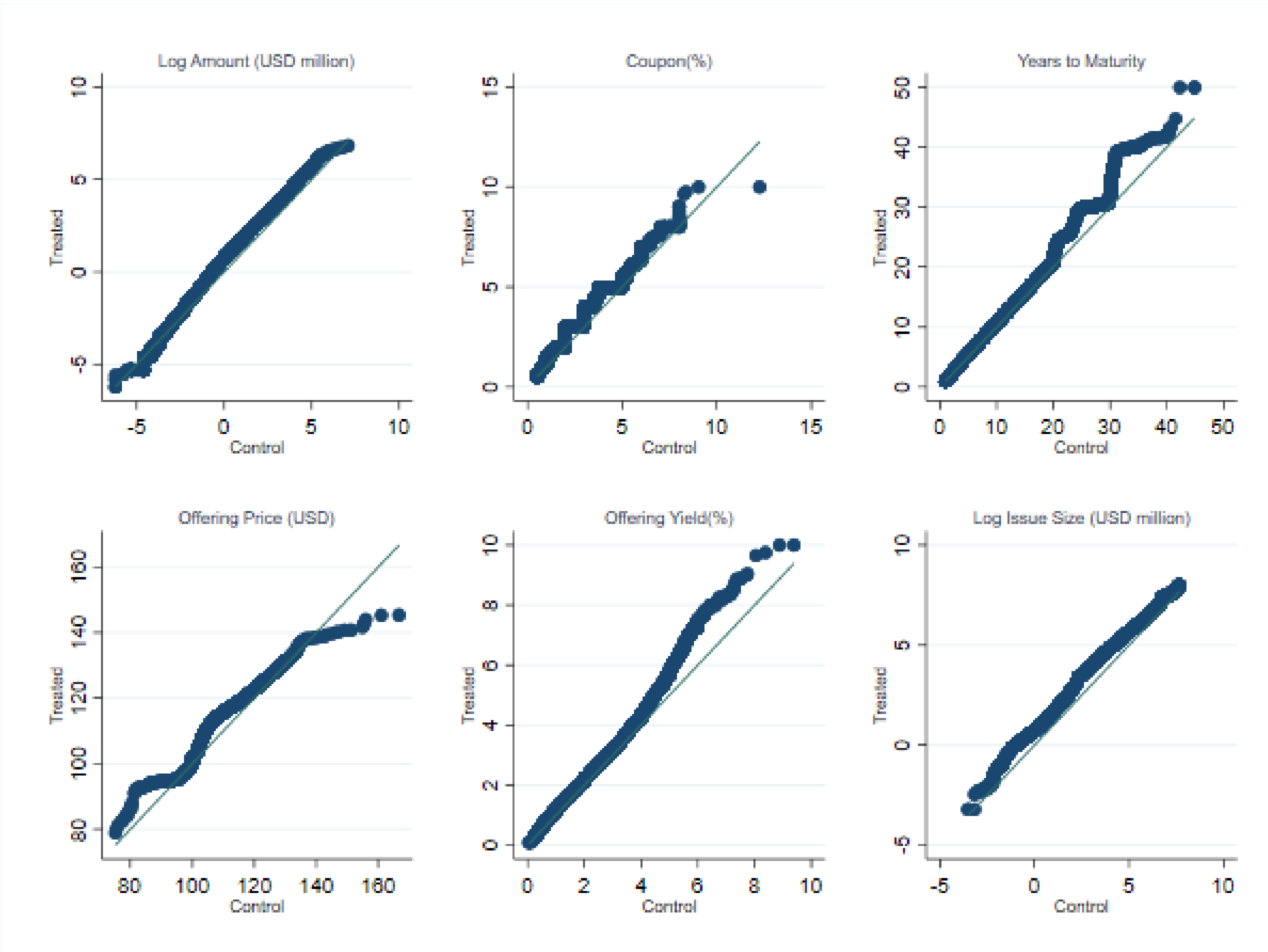


Figure IA1: The figure shows the primary market characteristics of bonds with advisors at the time of issuance, using a quantile-quantile plot. In my setting, bonds sold via negotiation consist of the "treated" group, whereas competitively auctioned bonds comprise the "control" group. I focus on fixed rate, tax-exempt bonds issued during 2010-2019.

Total Issuance: Negotiated vs Competitive

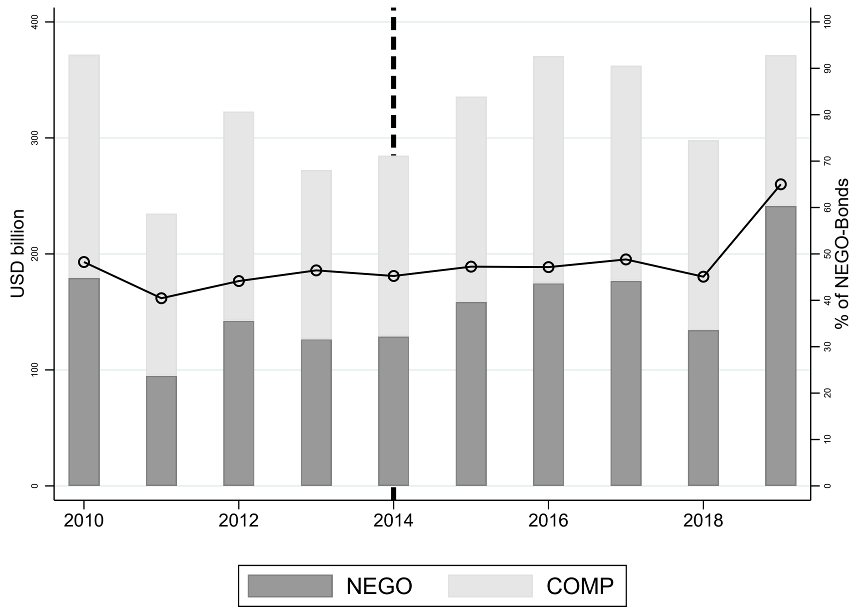


Figure IA2: This figure shows the annual amount of advised bonds sold via negotiation. The left hand axis corresponds to the vertical bars denoting the amounts in USD billion. The line graph represents the percentage of dollar value sold via negotiation, shown on the right axis.

Likelihood of Negotiated Sale

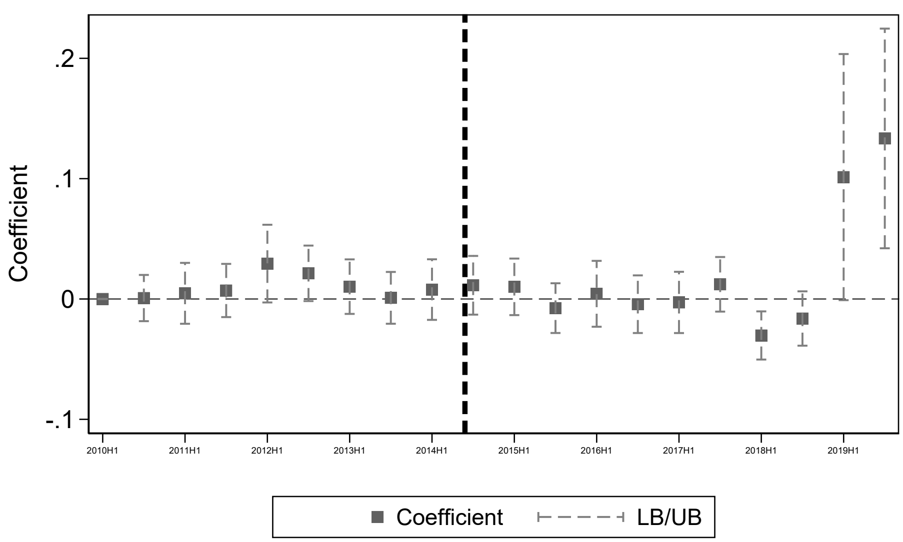


Figure IA3: This figure reports the likelihood of issuing a bond via negotiation, *within* issuer. The coefficients are shown relative to a benchmark period of half year period at the start of the event window. Standard errors are clustered at the state level.

Raw Binscatter of Offering Yields

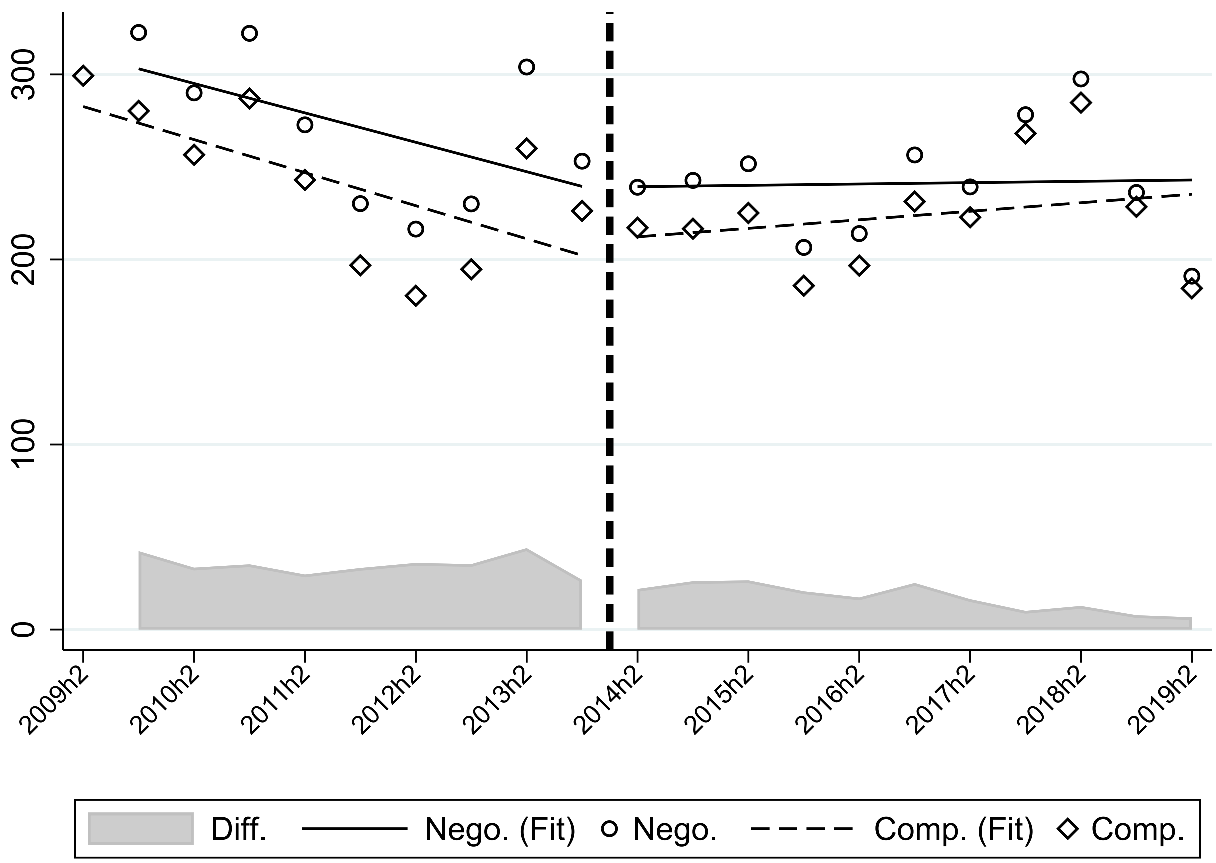
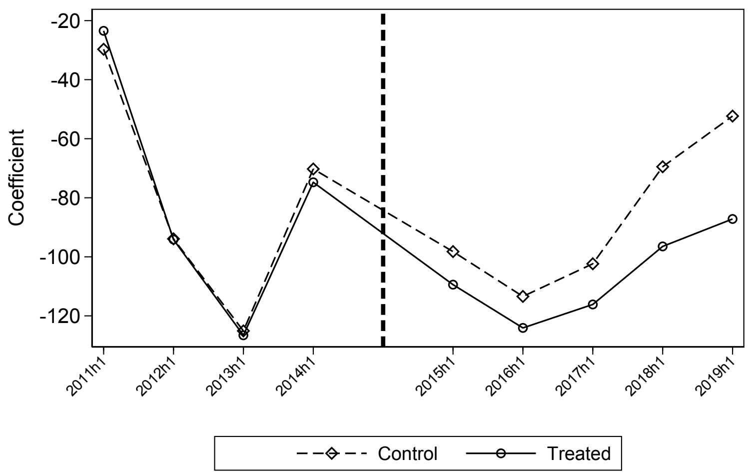


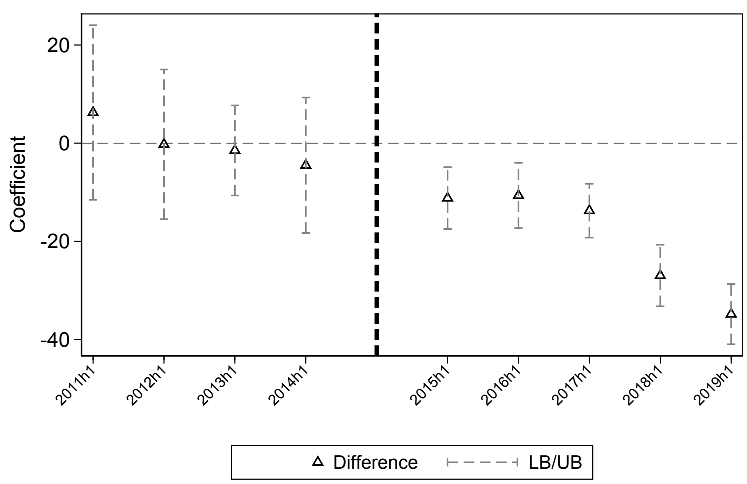
Figure IA4: This figure reports the binscatter of offering yields in basis points on the y-axis. Each dot is the average of the offering yields calculated on every 5^{th} percentile of the sample for treated and control bonds, separately. The figure also shows the corresponding fitted lines for the negotiated and competitively bid bonds. The difference between the two groups is represented in the shaded portion. The observed pattern suggests a convergence of yields between the treated and control bonds after the SEC Municipal Advisor Rule. This analysis should be interpreted in a non-causal way, as no fixed effect and controls are included.

Offering Yields



(a)

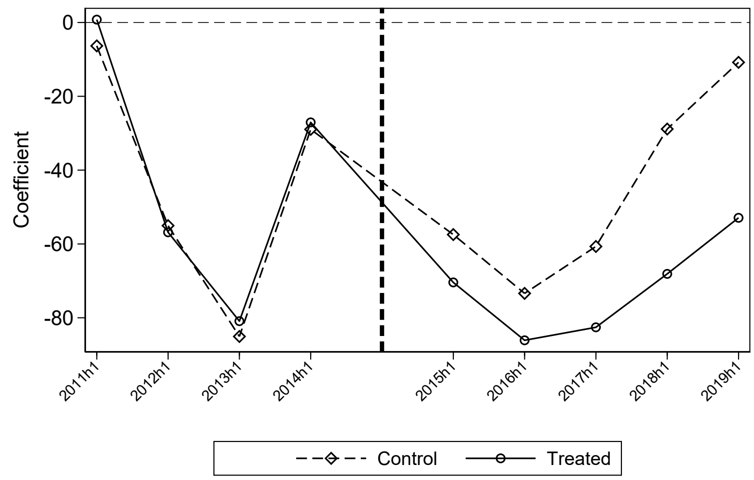
Difference in Offering Yields



(b)

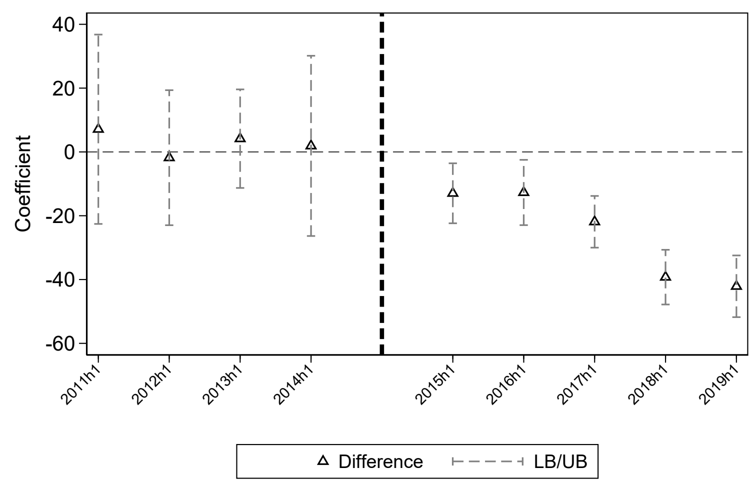
Figure IA5: Baseline Result: In this figure, I plot the offering yield for new municipal bonds using Equation (3) in Panel (a). Panel (b) shows the differences between the yields of treated and control bonds. See Table A1 for variables description. The coefficients are shown in basis points. Specifically, I regress the offering yields on yearly interaction dummies for treated and control bonds using issuer fixed effects. These coefficients are depicted on a yearly scale on the x-axis, where the vertical line corresponds to the Municipal Advisor Rule. The omitted benchmark period is the twelve month period before the event window shown above. Standard errors are clustered by state. The dashed lines represent 95% confidence intervals.

Issue Yields



(a)

Difference in Issue Yields



(b)

Figure IA6: Baseline Result: In this figure, I plot the average offering yield for new municipal bond issues using Equation (3) in Panel (a). Panel (b) shows the differences between the yields of treated and control bonds. See Table A1 for variables description. The coefficients are shown in basis points. Specifically, I regress the average issue yields on yearly interaction dummies for treated and control bonds using issuer fixed effects. These coefficients are depicted on a yearly scale on the x-axis, where the vertical line corresponds to the Municipal Advisor Rule. The omitted benchmark period is the twelve month period before the event window shown above. Standard errors are clustered by state. The dashed lines represent 95% confidence intervals.

Table IA1: Probability of Choosing Negotiated Sale Conditional on Ex-ante Observables

This table shows the estimates from a linear probability regression of choice of negotiated sale on issue characteristics. See Section 2.1 for details. T-statistics are reported in brackets and standard errors are clustered at the state level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Dependent Variable:	Likelihood of Negotiation					
	(1)	(2)	(3)	(4)	(5)	(6)
ln(Issue Size)	-0.07	-0.06	-0.14	-0.13	0.02	0.01
	[-0.55]	[-0.50]	[-1.00]	[-0.97]	[0.19]	[0.17]
ln(avg. bond size)	0.13	0.12	0.17	0.17	0.01	0.02
	[0.92]	[0.84]	[1.18]	[1.13]	[0.16]	[0.18]
Coupon	0.05**	0.04**	0.03**	0.03**	0.01	0.01
	[2.34]	[2.34]	[2.04]	[2.03]	[1.11]	[1.11]
Maturity	0.03	0.03	0.02	0.02	-0.02	-0.02
	[1.44]	[1.29]	[1.24]	[1.10]	[-1.18]	[-1.17]
Callable	-0.06*	-0.06**	-0.02	-0.02	-0.02	-0.02
	[-1.98]	[-2.01]	[-0.71]	[-0.76]	[-0.86]	[-0.87]
Credit Enh.	-0.14*	-0.14*	-0.04	-0.04	-0.00	-0.00
	[-1.71]	[-1.68]	[-0.76]	[-0.75]	[-0.02]	[-0.01]
Insured	0.10***	0.12***	0.07**	0.08**	0.04	0.04
	[2.88]	[3.26]	[2.35]	[2.62]	[0.88]	[0.89]
Bank Qualified	-0.10***	-0.09***	-0.05**	-0.04*	0.01	0.01
	[-3.42]	[-3.19]	[-2.10]	[-1.80]	[0.92]	[1.03]
Num. of Bonds	0.02	0.01	0.05	0.05	-0.00	-0.00
	[0.19]	[0.17]	[0.62]	[0.60]	[-0.03]	[-0.00]
GO bond		-0.08**		-0.08**		-0.03
		[-2.31]		[-2.29]		[-0.97]
Num. of Txns.	-0.04***	-0.04***	-0.03**	-0.03**		
	[-3.09]	[-2.78]	[-2.39]	[-2.25]		
City(Issuer)	0.01	0.01	0.04	0.04		
	[0.17]	[0.16]	[0.95]	[0.83]		
County(Issuer)	0.05	0.05	0.08**	0.09**		
	[1.09]	[1.14]	[2.08]	[2.25]		
State(Issuer)	0.20***	0.18***	0.18***	0.16***		
	[4.26]	[3.57]	[4.58]	[3.90]		
Year FE	✓	✓	✓	✓	✓	✓
Purpose FE	✓	✓	✓	✓	✓	✓
Rating FE	✓	✓	✓	✓	✓	✓
State FE			✓	✓		
Issuer FE					✓	✓
Adj.-R^2	0.174	0.178	0.307	0.311	0.686	0.686
Obs.	15,578	15,578	15,578	15,578	15,578	15,578

Table IA2: Summary Statistics: Municipal Bonds

This table summarizes the municipal bond level characteristics during 2010-2019 for the bonds in the sample. The two panels correspond to the treated (negotiated sale) versus control (competitively bid) bonds. The key variables are described in Table A1.

	Count	Mean	Std. Dev.	P25	P50	P75
Treated - Negotiated Sale						
Amount (USD million)	270,504	4.08	14.83	0.4	1.0	2.8
Coupon(%)	270,504	3.90	1.10	3.0	4.0	5.0
Years to Maturity	270,504	10.34	6.50	5.2	9.2	14.4
Offering Price (USD)	270,504	108.62	8.30	101.1	107.4	115.1
Offering Yield(%)	270,504	2.47	1.04	1.7	2.4	3.2
Yield Spread(%)	270,504	1.32	1.31	0.4	1.3	2.2
Callable (Dummy)	270,504	0.47	0.50	0.0	0.0	1.0
General Obligation (Dummy)	270,504	0.42	0.49	0.0	0.0	1.0
Bank Qualified (Dummy)	270,504	0.23	0.42	0.0	0.0	0.0
Cred. Enh. (Dummy)	270,504	0.13	0.34	0.0	0.0	0.0
Insured (Dummy)	270,504	0.19	0.40	0.0	0.0	0.0
Control - Competitively Bid						
Amount (USD million)	564,420	2.04	8.29	0.2	0.5	1.3
Coupon(%)	564,420	3.33	1.10	2.5	3.0	4.0
Years to Maturity	564,420	9.65	5.96	4.9	8.7	13.7
Offering Price (USD)	564,419	105.65	7.16	100.0	103.1	109.2
Offering Yield(%)	564,420	2.27	0.99	1.5	2.3	3.0
Yield Spread(%)	564,420	1.27	1.14	0.5	1.2	2.0
Callable (Dummy)	564,420	0.47	0.50	0.0	0.0	1.0
General Obligation (Dummy)	564,420	0.68	0.47	0.0	1.0	1.0
Bank Qualified (Dummy)	564,420	0.48	0.50	0.0	0.0	1.0
Cred. Enh. (Dummy)	564,420	0.24	0.43	0.0	0.0	0.0
Insured (Dummy)	564,420	0.15	0.35	0.0	0.0	0.0

Table IA3: Impact on Offering Yields of Local Governments: Evidence from Municipal Bonds Primary Market

This table reports the baseline results for my sample using Equation (1) estimating the differential effect on municipal bond yields of treated and control bonds after the Municipal Advisor Rule of 2014. The primary coefficient of interest, β_0, is captured by the interaction term of *Treated* $\times$ *Post*. I show the results using offering yields as the dependent variable. Specifically, Column (1) reports the results without any controls or fixed effects. In Column (2), I first introduce issuer fixed effects. Column (3) shows results by introducing state $\times$ year fixed effects. In Column (4), I add advisor fixed effect. Column (5) reports the results by additionally including bond level controls consisting of coupon (%); log(amount issued in \$); dummies for callable bonds, bond insurance, general obligation bond, bank qualification, refunding and credit enhancement; credit rating; remaining years to maturity; and inverse years to maturity. I provide the description of key variables in Table A1. In Column (6), I control for the county-level economic conditions. I use the lagged values for log(labor force) and unemployment rate, and the percentage change in unemployment rate and labor force, respectively. Column (7) replaces advisor fixed effect with advisor $\times$ year fixed effect and does not include county-level controls. Finally, Column (8) shows results by also adding county-level controls. T-statistics are reported in brackets and standard errors are clustered at the state level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Dependent Variable:	Offering Yield (basis points)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treated $\times$ Post	-17.62***	-20.84***	-11.10***	-10.60***	-13.96***	-13.92***	-11.10***	-11.08***
	[-2.78]	[-2.72]	[-2.75]	[-2.75]	[-4.79]	[-4.78]	[-4.14]	[-4.14]
Treated	31.55***	-2.18	-1.93	-2.80	8.98***	8.98***	7.44**	7.45**
	[2.91]	[-0.23]	[-0.32]	[-0.46]	[2.70]	[2.71]	[2.11]	[2.11]
Post	-11.60***	-14.28***	-10.23***	-11.05***	-8.40***	-8.34***	-9.19***	-9.14***
	[-3.64]	[-2.93]	[-4.78]	[-5.20]	[-4.92]	[-4.88]	[-5.55]	[-5.50]
Issuer FE		✓	✓	✓	✓	✓	✓	✓
State-Year FE			✓	✓	✓	✓	✓	✓
Advisor FE				✓	✓	✓		
Bond Controls					✓	✓	✓	✓
County Controls						✓		✓
Advisor-Year FE							✓	✓
Adj.-R^2	0.017	0.197	0.263	0.267	0.862	0.862	0.868	0.868
Obs.	834,925	834,764	834,764	834,760	834,760	834,760	834,741	834,741

Table IA4: Impact on Amihud Measure (Liquidity) of New Bonds

This table reports the baseline results for the sample using Equation (1) estimating the differential effect on Amihud measure of liquidity between treated and control bonds after the Municipal Advisor Rule of 2014. I use trades during the first month after issuance to construct this measure using Schwert (2017), based on Amihud (2002). The primary coefficient of interest, β_0, is captured by the interaction term of *Treated* × *Post*. Specifically, Column (1) reports the results without any controls or fixed effects. In Column (2), I first introduce issuer fixed effects. Column (3) shows results by introducing state × year fixed effects. In Column (4), I add advisor fixed effect. Column (5) reports the results by additionally including bond level controls consisting of coupon (%); log(amount issued in \$); dummies for callable bonds, bond insurance, general obligation bond, bank qualification, refunding and credit enhancement; credit rating; remaining years to maturity; and inverse years to maturity. I provide the description of key variables in Table A1. In Column (6), I control for the county-level economic conditions. I use the lagged values for log(labor force) and unemployment rate, and the percentage change in unemployment rate and labor force, respectively. Column (7) replaces advisor fixed effect with advisor × year fixed effect and does not include county-level controls. Finally, Column (8) shows results by also adding county-level controls. T-statistics are reported in brackets and standard errors are clustered at the state level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Dependent Variable:	Amihud measure							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treated × Post	-2.53***	-2.19***	-1.67***	-1.58***	-1.67***	-1.66***	-1.47***	-1.46***
	[-5.68]	[-6.37]	[-4.82]	[-4.67]	[-8.37]	[-8.30]	[-7.65]	[-7.62]
Treated	-1.87***	-2.93***	-3.21***	-3.30***	-1.29***	-1.29***	-1.40***	-1.40***
	[-4.69]	[-8.83]	[-9.23]	[-9.34]	[-7.18]	[-7.20]	[-8.04]	[-8.07]
Post	2.41***	1.86***	0.47	0.43	0.72***	0.72***	0.56**	0.56**
	[8.21]	[5.72]	[1.54]	[1.44]	[2.75]	[2.76]	[2.03]	[2.02]
Issuer FE		✓	✓	✓	✓	✓	✓	✓
State-Year FE			✓	✓	✓	✓	✓	✓
Advisor FE				✓	✓	✓		
Bond Controls					✓	✓	✓	✓
County Controls						✓		✓
Advisor-Year FE							✓	✓
Adj.-R^2	0.014	0.107	0.112	0.113	0.277	0.277	0.281	0.281
Obs.	526,910	526,285	526,285	526,278	526,278	526,278	526,245	526,245

Table IA5: Impact on Offering Yields of Local Governments using Issue Yields

This table reports the baseline results for the sample using Equation (1) estimating the differential effect on municipal issue yields of treated and control bonds at the issue level, after the Municipal Advisor Rule of 2014. The primary coefficient of interest, β_0, is captured by the interaction term of *Treated* × *Post*. Specifically, Column (1) reports the results without any controls or fixed effects. In Column (2), I first introduce issuer fixed effects. Column (3) shows results by introducing state × year fixed effects. In Column (4), I add advisor fixed effect. Column (5) reports the results by additionally including bond level controls consisting of coupon (%); log(amount issued in \$); dummies for callable bonds, bond insurance, general obligation bond, bank qualification, refunding and credit enhancement; credit rating; remaining years to maturity; and inverse years to maturity. I provide the description of key variables in Table A1. In Column (6), I control for the county-level economic conditions. I use the lagged values for log(labor force) and unemployment rate, and the percentage change in unemployment rate and labor force, respectively. Column (7) replaces advisor fixed effect with advisor × year fixed effect and does not include county-level controls. Finally, Column (8) shows results by also adding county-level controls. T-statistics are reported in brackets and standard errors are clustered at the state level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Dependent Variable:	Issue Level Offering Yield (basis points)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treated × Post	-27.38***	-29.74***	-15.67**	-14.50**	-17.60***	-17.55***	-14.10***	-14.08***
	[-3.30]	[-2.92]	[-2.28]	[-2.20]	[-4.34]	[-4.34]	[-3.78]	[-3.78]
Treated	53.90***	1.97	-0.54	-2.28	8.29**	8.28**	6.63*	6.64*
	[3.86]	[0.16]	[-0.06]	[-0.24]	[2.55]	[2.56]	[1.94]	[1.95]
Post	-7.61**	-10.96*	-8.45**	-9.38***	-8.80***	-8.74***	-9.92***	-9.88***
	[-2.10]	[-1.77]	[-2.62]	[-2.79]	[-3.43]	[-3.39]	[-3.89]	[-3.86]
Issuer FE		✓	✓	✓	✓	✓	✓	✓
State-Year FE			✓	✓	✓	✓	✓	✓
Advisor FE				✓	✓	✓	✓	✓
Bond Controls					✓	✓	✓	✓
County Controls						✓		✓
Advisor-Year FE							✓	✓
Adj.-R^2	0.052	0.337	0.454	0.461	0.856	0.857	0.863	0.863
Obs.	56,793	51,321	51,321	51,220	51,220	51,220	50,668	50,668

Table IA6: Impact on Offering Yield Spreads of Local Governments using Issue Yield Spreads

This table reports the baseline results for my sample using Equation (1) estimating the differential effect on municipal issue yield spreads of treated and control bonds at the issue level, after the Municipal Advisor Rule of 2014. The primary coefficient of interest, β_0, is captured by the interaction term of *Treated* × *Post*. Specifically, Column (1) reports the results without any controls or fixed effects. In Column (2), I first introduce issuer fixed effects. Column (3) shows results by introducing state × year fixed effects. In Column (4), I add advisor fixed effect. Column (5) reports the results by additionally including bond level controls consisting of coupon (%); log(amount issued in $); dummies for callable bonds, bond insurance, general obligation bond, bank qualification, refunding and credit enhancement; credit rating; remaining years to maturity; and inverse years to maturity. I provide the description of key variables in Table A1. In Column (6), I control for the county-level economic conditions. I use the lagged values for log(labor force) and unemployment rate, and the percentage change in unemployment rate and labor force, respectively. Column (7) replaces advisor fixed effect with advisor × year fixed effect and does not include county-level controls. Finally, Column (8) shows results by also adding county-level controls. T-statistics are reported in brackets and standard errors are clustered at the state level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Dependent Variable:	Issue Level Yield Spread (basis points)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treated × Post	-34.30***	-33.57***	-14.00***	-12.90**	-14.81***	-14.74***	-14.16***	-14.13***
	[-4.21]	[-4.52]	[-2.70]	[-2.68]	[-4.95]	[-4.92]	[-4.71]	[-4.71]
Treated	40.00***	-7.23	2.35	1.03	6.74***	6.74***	6.49**	6.51**
	[4.08]	[-0.66]	[0.39]	[0.17]	[3.05]	[3.08]	[2.49]	[2.52]
Post	-72.93***	-74.34***	-4.50	-5.20	-5.16*	-5.05*	-4.92*	-4.81*
	[-26.09]	[-20.66]	[-1.46]	[-1.59]	[-1.87]	[-1.83]	[-1.78]	[-1.74]
Issuer FE		✓	✓	✓	✓	✓	✓	✓
State-Year FE			✓	✓	✓	✓	✓	✓
Advisor FE				✓	✓	✓	✓	✓
Bond Controls					✓	✓	✓	✓
County Controls						✓		✓
Advisor-Year FE							✓	✓
Adj.-R^2	0.145	0.251	0.699	0.702	0.816	0.816	0.824	0.824
Obs.	56,793	51,321	51,321	51,220	51,220	51,220	50,668	50,668

Table IA7: Robustness Tests using Offering Yields

In this table I report results for various robustness tests on the baseline specification, i.e., Column (8) of Table 2 with offering yield as the dependent variable. Columns (1)-(2) show the baseline effect by changing the dependent variable to after-tax yield and after-tax yield spread, respectively. In Columns (3)-(11), I report results based on alternative econometric specifications. I introduce additional fixed effects to account for unobserved factors that may be varying over time. Specifically, Column (3) reports baseline results by adding issuer-type × year fixed effects. Column (4) shows results by adding bond purpose fixed effects. I add bond purpose × year fixed effect in Column (5). Columns (6) and (7) show results by adding underwriter fixed effect and underwriter × year fixed effect, respectively. In Columns (8) and (9), I control for unobserved pairing between issuers and advisors, as well as issuers and underwriters, separately, by adding issuer-advisor pair fixed effect and issuer-underwriter pair fixed effect, respectively. These specifications include time unvarying advisor and underwriter fixed effects, respectively. Column (10) shows results with advisor × state fixed effects. In Column (11), I also add county × year fixed effects. I consider additional tax considerations in Columns (12)-(14). First, I relax the sample of bonds to include taxable bonds in Columns (12)-(13). In Column (13), I further omit bonds from five states (IL, IA, KS, OK, WI) that tax interest income on municipal bonds issued in-state or out-of-state (Gao et al., 2021). Column (14) shows results using bonds that are exempt from both state and federal income tax simultaneously. Columns (15)-(18) report results focusing on sub-samples of homogeneous bonds. Accordingly, in Column (15), I drop bonds in which the advisor and underwriter are same. Column (16) shows results by dropping callable bonds. I drop insured bonds in Column (17). Finally, I focus on only the new money bonds in Column (18). The results in Columns (19)-(21) focus on additional geographic considerations. I keep only local bonds (by dropping state level bonds) in Column (19). Conversely, I show results using only the state level bonds in Column (20). In Column (21), I report the baseline results by dropping issuances from the three largest municipal bond issuers, namely: California (CA), New York (NY) and Texas (TX). I consider alternative levels of clustering standard errors in Columns (22)-(32). In Columns (22)-(26), I cluster standard errors by advisor, underwriter, issuer, issuer(2), and bond issue, respectively. Issuer(2) in Column (25) refers to weakly identifying borrowers based on the first six-digits of the bond CUSIP (Gao et al., 2021). Columns (27)-(28) double cluster standard errors along two dimensions in the geography of issuers: state-advisor, and advisor-issuer, respectively. Finally, in Columns (29)-(32), I double cluster standard errors over time and across bonds using: state and year, advisor and year, state and year-month, and advisor and year-month, respectively. T-statistics are reported in brackets and standard errors are clustered at the state level, unless otherwise specified. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Dependent Variable:	Offering Yield (basis points)										
	Other Dependent Variables		Alternative Specifications								
	After-tax Yield (1)	After-tax Yield Spread (2)	Add Issuer-Type Year FE (3)	Add Purpose FE (4)	Add Purpose Year FE (5)	Add UW FE (6)	Add UW-Yr. FE (7)	Add Iss.-MA FE (8)	Add Iss.-UW FE (9)	Add MA-State FE (10)	Add County-Yr. FE (11)
Treated × Post	-18.13***	-19.69***	-10.51***	-11.08***	-10.61***	-11.00***	-9.29***	-12.61***	-11.43**	-10.25***	-8.57***
	[-4.23]	[-4.33]	[-4.02]	[-4.06]	[-3.89]	[-4.18]	[-3.14]	[-4.28]	[-2.44]	[-3.81]	[-2.87]
Adj.-R^2	0.867	0.853	0.868	0.868	0.868	0.869	0.873	0.870	0.893	0.869	0.878
Obs.	833,343	833,343	833,667	833,348	833,348	834,730	834,707	834,670	834,297	834,731	834,629

Dependent Variable:	Offering Yield (basis points)									
	Tax Considerations			Bond Considerations				Geographic Considerations		
	Include Taxable		Exempt	Drop same	Drop	Drop	Only	Keep	Keep	Drop
		(-Taxable States)	(Fed.+State)	Adv.-UW. bonds	Callable	Insured	New money	Local	State	CA,NY,TX
	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
Treated × Post	-11.08***	-9.83***	-10.83***	-11.17***	-10.75***	-13.16***	-20.92***	-9.42***	-12.66**	-15.35***
	[-4.14]	[-3.88]	[-3.95]	[-4.26]	[-6.21]	[-6.33]	[-6.21]	[-3.42]	[-2.39]	[-7.58]
Adj.-R^2	0.868	0.865	0.866	0.867	0.828	0.870	0.879	0.875	0.838	0.871
Obs.	834,741	737,424	770,446	830,458	443,572	698,776	415,926	751,278	83,456	519,544

Dependent Variable:	Offering Yield (basis points)										
	Alternative Clustering										
	Advisor (22)	Underwriter (23)	Issuer (24)	Issuer(2) (25)	Issue (26)	State, Advisor (27)	Advisor, Issuer (28)	State, Year (29)	Advisor, Year (30)	State, YM (31)	Advisor, YM (32)
Treated × Post	-11.08***	-11.08***	-11.08***	-11.08***	-11.08***	-11.08***	-11.08***	-11.08***	-11.08***	-11.08***	-11.08***
	[-5.11]	[-7.25]	[-7.24]	[-9.91]	[-12.47]	[-3.92]	[-4.75]	[-3.96]	[-4.09]	[-4.13]	[-5.02]
Adj.-R^2	0.868	0.868	0.868	0.868	0.868	0.868	0.868	0.868	0.868	0.868	0.868
Obs.	834,741	834,741	834,741	834,741	834,741	834,741	834,741	834,741	834,741	834,741	834,741

Table IA8: Robustness Tests using Offering Price

In this table I report results for various robustness tests on the baseline specification, i.e., Column (8) of Table 3 with offering price as the dependent variable. In Columns (1)-(9), I report results based on alternative econometric specifications. I introduce additional fixed effects to account for unobserved factors that may be varying over time. Specifically, Column (1) reports baseline results by adding issuer-type × year fixed effects. Column (2) shows results by adding bond purpose fixed effects. I add bond purpose × year fixed effect in Column (3). Columns (4) and (5) show results by adding underwriter fixed effect and underwriter × year fixed effect, respectively. In Columns (6) and (7), I control for unobserved pairing between issuers and advisors, as well as issuers and underwriters, separately, by adding issuer-advisor pair fixed effect and issuer-underwriter pair fixed effect, respectively. These specifications include time unvarying advisor and underwriter fixed effects, respectively. Column (8) shows results with advisor × state fixed effects. In Column (9), I also add county × year fixed effects. I consider additional tax considerations in Columns (10)-(12). First, I relax the sample of bonds to include taxable bonds in Columns (10)-(11). In Column (11), I further omit bonds from five states (IL, IA, KS, OK, WI) that tax interest income on municipal bonds issued in-state or out-of-state (Gao et al., 2021). Column (12) shows results using bonds that are exempt from both state and federal income tax simultaneously. Columns (13)-(16) report results focusing on sub-samples of homogeneous bonds. Accordingly, in Column (13), I drop bonds in which the advisor and underwriter are same. Column (14) shows results by dropping callable bonds. I drop insured bonds in Column (15). Finally, I focus on only the new money bonds in Column (16). The results in Columns (17)-(19) focus on additional geographic considerations. I keep only local bonds (by dropping state level bonds) in Column (17). Conversely, I show results using only the state level bonds in Column (18). In Column (19), I report the baseline results by dropping issuances from the three largest municipal bond issuers, namely: California (CA), New York (NY) and Texas (TX). I consider alternative levels of clustering standard errors in Columns (20)-(30). In Columns (20)-(24), I cluster standard errors by advisor, underwriter, issuer, issuer(2), and bond issue, respectively. Issuer(2) in Column (23) refers to weakly identifying borrowers based on the first six-digits of the bond CUSIP (Gao et al., 2021). Columns (25)-(26) double cluster standard errors along two dimensions in the geography of issuers: state-advisor, and advisor-issuer, respectively. Finally, in Columns (27)-(30), I double cluster standard errors over time and across bonds using: state and year, advisor and year, state and year-month, and advisor and year-month, respectively. T-statistics are reported in brackets and standard errors are clustered at the state level, unless otherwise specified. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Dependent Variable:	Offering Price (per USD 100)								
	Alternative Specifications								
	Add Issuer-Type Year FE	Add Purpose FE	Add Purpose Year FE	Add UW FE	Add UW-Yr. FE	Add Iss.-MA FE	Add Iss.-UW FE	Add MA-State FE	Add County-Yr. FE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treated × Post	1.00***	1.05***	1.02***	1.03***	0.92***	1.11***	0.92**	0.97***	0.84***
	[4.42]	[4.31]	[4.33]	[4.22]	[3.82]	[4.44]	[2.28]	[4.11]	[3.51]
Adj.-R^2	0.774	0.774	0.774	0.775	0.777	0.776	0.796	0.775	0.783
Obs.	833,666	833,347	833,347	834,729	834,706	834,669	834,296	834,730	834,628

Dependent Variable:	Offering Price (per USD 100)									
	Tax Considerations			Bond Considerations				Geographic Considerations		
	Include Taxable		Exempt	Drop same	Drop	Drop	Only	Keep	Keep	Drop
		(-Taxable States)	(Fed.+State)	Adv.-UW. bonds	Callable	Insured	New money	Local	State	CA,NY,TX
	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
Treated × Post	1.05***	0.94***	1.01***	1.05***	0.72***	1.24***	1.62***	0.90***	1.02**	1.45***
	[4.36]	[3.99]	[4.15]	[4.43]	[4.81]	[6.82]	[6.99]	[3.79]	[2.54]	[9.28]
Adj.-R^2	0.774	0.774	0.774	0.774	0.806	0.773	0.776	0.776	0.755	0.777
Obs.	834,740	737,423	770,445	830,457	443,571	698,775	415,926	751,277	83,456	519,544

Dependent Variable:	Offering Price (per USD 100)										
	Alternative Clustering										
	Advisor	Underwriter	Issuer	Issuer(2)	Issue	State, Advisor	Advisor, Issuer	State, Year	Advisor, Year	State, YM	Advisor, YM
	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
Treated × Post	1.05***	1.05***	1.05***	1.05***	1.05***	1.05***	1.05***	1.05***	1.05***	1.05***	1.05***
	[5.14]	[7.64]	[8.71]	[12.49]	[15.68]	[3.89]	[4.89]	[3.90]	[4.11]	[4.26]	[4.96]
Adj.-R^2	0.774	0.774	0.774	0.774	0.774	0.774	0.774	0.774	0.774	0.774	0.774
Obs.	834,740	834,740	834,740	834,740	834,740	834,740	834,740	834,740	834,740	834,740	834,740

Table IA9: Impact Due to Advisor's Ex-ante Role in "Selecting" Underwriter

This table reports the results using Equation (1) to show the differential effect among issuers for whom advisors play a greater role in selecting underwriters. The dependent variable is offering yield spread. I use the average (Columns (1)-(3)) and weighted average (Columns (4)-(6)) of ex-ante likelihood of a new underwriter being introduced by an advisor for a given issuer, respectively. Specifically, I interact the equation with dummies corresponding to below and above median values for this measure among issuers. This analysis also includes group × year fixed effects. The baseline specification of Column (8) in Table 2 is shown in Columns (3) and (6). T-statistics are reported in brackets and standard errors are clustered at the state level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Panel A: Evidence from Offering Yields

Dependent Variable:	Offering Yield (basis points)					
Based on Issuers':	Average			Weighted Average		
Treated × Post	(1)	(2)	(3)	(4)	(5)	(6)
Below Median	-12.60***	-6.82*	-4.88	-12.61***	-6.84*	-4.90
	[-2.76]	[-1.80]	[-1.34]	[-2.77]	[-1.80]	[-1.34]
Above Median	-16.97***	-15.21***	-12.45***	-16.95***	-15.19***	-12.43***
	[-5.69]	[-7.16]	[-6.66]	[-5.69]	[-7.15]	[-6.65]
Difference	4.37	8.39	7.57	4.34	8.36	7.52
p-value	0.19	0.02	0.02	0.19	0.02	0.02
Issuer FE	✓	✓	✓	✓	✓	✓
Controls	✓	✓	✓	✓	✓	✓
Advisor FE	✓	✓		✓	✓	
Group-Yr. FE	✓	✓	✓	✓	✓	✓
State-Yr. FE		✓	✓		✓	✓
Advisor-Yr. FE			✓			✓
Adj.-R^2	0.858	0.863	0.868	0.858	0.863	0.868
Obs.	776,304	776,304	776,286	776,304	776,304	776,286

Panel B: Evidence from Offering Price

Dependent Variable:	Offering Price (per USD 100)					
Issuers' reliance:	Average			Wtd. average		
Treated × Post	(1)	(2)	(3)	(4)	(5)	(6)
Below Median	0.98**	0.52	0.40	0.98**	0.52	0.40
	[2.43]	[1.50]	[1.26]	[2.43]	[1.50]	[1.26]
Above Median	1.47***	1.36***	1.20***	1.47***	1.36***	1.20***
	[5.66]	[7.27]	[6.76]	[5.66]	[7.27]	[6.77]
Difference	-0.50	-0.84	-0.81	-0.49	-0.84	-0.80
p-value	0.06	0.00	0.00	0.06	0.00	0.00
Issuer FE	✓	✓	✓	✓	✓	✓
Controls	✓	✓	✓	✓	✓	✓
Advisor FE	✓	✓		✓	✓	
Group-Yr. FE	✓	✓	✓	✓	✓	✓
State-Yr. FE		✓	✓		✓	✓
Advisor-Yr. FE			✓			✓
Adj.-R^2	0.762	0.766	0.772	0.762	0.766	0.772
Obs.	776,303	776,303	776,285	776,303	776,303	776,285

Table IA10: Heterogeneity by Size of Issuers

This table reports the results using Equation (1) to show the differential effect among issuers based on their ex-ante size. The dependent variable is offering yields. I use the average (Columns (1)-(3)) and median (Columns (4)-(6)) size of ex-ante issuances, respectively. Specifically, I interact the equation with dummies corresponding to small and large values for this measure among issuers. This analysis also includes group × year fixed effects. The baseline specification of Column (8) in Table 2 is shown in Columns (3) and (6). T-statistics are reported in brackets and standard errors are clustered at the state level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Dependent Variable:	Offering Yields (basis points)					
Based on Issuers':	Average Size			Median Size		
Treated × Post	(1)	(2)	(3)	(4)	(5)	(6)
× Small	-9.29	-3.34	-2.49	-8.14	-2.84	-2.05
	[-1.41]	[-0.55]	[-0.40]	[-1.26]	[-0.47]	[-0.34]
× Large	-17.84***	-15.17***	-12.19***	-18.23***	-15.72***	-12.68***
	[-6.32]	[-7.68]	[-6.67]	[-6.80]	[-8.33]	[-7.42]
Difference	8.55	11.83	9.70	10.09	12.88	10.63
p-value	0.11	0.02	0.08	0.07	0.02	0.07
Issuer FE	✓	✓	✓	✓	✓	✓
Controls	✓	✓	✓	✓	✓	✓
Advisor FE	✓	✓	✓	✓	✓	✓
Group-Yr. FE	✓	✓	✓	✓	✓	✓
State-Yr. FE		✓	✓		✓	✓
Advisor-Yr. FE			✓			✓
Adj.-R^2	0.858	0.863	0.868	0.858	0.863	0.868
Obs.	834,760	834,760	834,741	834,760	834,760	834,741

Table IA11: Evidence from the Exit of Municipal Advisors (MA) - lower dependence

This table reports the results using Equation (1) with interactions to show the differential effect among issuers based on the exit of municipal advisors (MA). This analysis also includes group × year fixed effects. Column (1) shows results among all issuers with interactions corresponding to whether the issuer primarily depended on an exiting advisor or not. I define issuers linked to advisors when more than 25% of their municipal debt issuance in the pre-period is advised by the exiting advisor. I focus on the exit of regular advisors. These represent municipal advisors with at lease one issuance in each calendar year before the SEC Municipal Advisor Rule in the sample. Columns (2) and (3) show results for issuers that depend on exiting advisors. For these issuers, I show the heterogeneity between small and large issuers based on the median size of ex-ante issuances. Column (2) shows results for advised bonds only. Column (3) also includes bonds issued without any advisors, and the analysis does not include advisor × year fixed effects. T-statistics are reported in brackets and standard errors are clustered at the state level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Dependent Variable:	Yield Spread (basis points)		
Sample of Issuers:	All	Depending on Exiting MA	
Treated × Post	(1)	(2)	(3)
× Other	-16.93***		
	[-5.58]		
× Depend on Exiting MA	-1.80		
	[-0.49]		
× Small		14.69***	12.46
		[3.74]	[1.56]
× Large		-8.85***	-8.53***
		[-2.70]	[-2.85]
Difference	-15.13	23.54	20.98
p-value	0.00	0.00	0.02
Issuer FE	✓	✓	✓
State-Yr. FE	✓	✓	✓
Controls	✓	✓	✓
Group-Yr. FE	✓	✓	✓
Advisor-Yr. FE	✓	✓	
Adj.-R^2	0.855	0.860	0.850
Obs.	834,741	250,538	294,592

Table IA12: Evidence from the Exit of Municipal Advisors (MA) - by size of average issuance

This table reports the results using Equation (1) with interactions to show the differential effect among issuers based on the exit of municipal advisors (MA). This analysis also includes group × year fixed effects. Column (1) shows results among all issuers with interactions corresponding to whether the issuer primarily depended on an exiting advisor or not. I define issuers linked to advisors when more than 25% of their municipal debt issuance in the pre-period is advised by the exiting advisor. I focus on the exit of regular advisors. These represent municipal advisors with at lease one issuance in each calendar year before the SEC Municipal Advisor Rule in the sample. Columns (2) and (3) show results for issuers that depend on exiting advisors. For these issuers, I show the heterogeneity between small and large issuers based on the average size of ex-ante issuances. Column (2) shows results for advised bonds only. Column (3) also includes bonds issued without any advisors, and the analysis does not include advisor × year fixed effects. T-statistics are reported in brackets and standard errors are clustered at the state level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Dependent Variable:	Yield Spread (basis points)		
Sample of Issuers:	All	Depending on Exiting MA	
Treated × Post	(1)	(2)	(3)
× Other	-16.61***		
	[-5.60]		
× Depend on Exiting MA	-0.73		
	[-0.22]		
× Small		15.30***	14.96**
		[5.66]	[2.52]
× Large		-5.62	-6.17*
		[-1.49]	[-1.94]
Difference	-15.87	20.92	21.13
p-value	0.00	0.00	0.00
Issuer FE	✓	✓	✓
State-Yr. FE	✓	✓	✓
Controls	✓	✓	✓
Group-Yr. FE	✓	✓	✓
Advisor-Yr. FE	✓	✓	
Adj.-R^2	0.855	0.861	0.854
Obs.	834,741	234,679	275,381