

Municipal Advisor Registration Rules and Voluntary Disclosure

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Abstract: This study examines how the Municipal Advisor Registration Rules of 2013 affect voluntary disclosure decisions through the unsophisticated investor channel in municipal securities markets. While prior research explores regulatory oversight's general effects on disclosure quality, the specific impact of municipal advisor regulation on voluntary disclosure behavior, particularly through unsophisticated investors, remains unexplored. Using a difference-in-differences design, we analyze how enhanced oversight of municipal advisors influences firms' voluntary disclosure decisions when facing unsophisticated investors. Our empirical analysis reveals that firms initially increased voluntary disclosure following the regulation, with a positive treatment effect of 0.0313. However, after controlling for firm characteristics, firms ultimately reduced their voluntary disclosure by approximately 5.73% of the sample mean, with a treatment coefficient of -0.0573. This effect is particularly pronounced for firms with higher proportions of unsophisticated investors, suggesting the regulation's impact operates primarily through this channel. The results remain robust across various specifications and demonstrate strong explanatory power, with institutional ownership and firm size emerging as significant determinants. Our study contributes to the literature by providing novel evidence on how municipal advisor regulation affects firm behavior through the unsophisticated investor channel, offering valuable insights for regulators and policymakers considering similar interventions in markets with significant information asymmetry.

INTRODUCTION

The Municipal Advisor Registration Rules of 2013 represent a significant shift in the regulatory landscape of municipal securities markets, introducing mandatory registration requirements for municipal advisors and enhancing oversight of their activities. This regulation emerged in response to concerns about information asymmetry and investor protection in municipal markets, where unsophisticated investors often face challenges in evaluating complex financial instruments (Diamond and Verrecchia, 1991; Kim and Verrecchia, 1994). The presence of unsophisticated investors in municipal markets creates unique information environments that can affect firms' disclosure decisions and market outcomes (Miller, 2010).

Given the critical role of information intermediaries in municipal markets, understanding how the Municipal Advisor Registration Rules affect voluntary disclosure through the unsophisticated investor channel is particularly important. While prior research has examined the general effects of regulatory oversight on disclosure quality (Leuz and Verrecchia, 2000), the specific impact of municipal advisor regulation on voluntary disclosure behavior, especially through its effect on unsophisticated investors, remains unexplored. We address this gap by examining how enhanced oversight of municipal advisors influences firms' voluntary disclosure decisions when facing unsophisticated investors.

The theoretical link between municipal advisor regulation and voluntary disclosure operates through several channels, with unsophisticated investors playing a central role. Information intermediaries, such as municipal advisors, help bridge the knowledge gap between sophisticated and unsophisticated investors (Bushee et al., 2010). Enhanced regulatory oversight of these intermediaries can affect their behavior and, consequently, the information environment faced by unsophisticated investors. This relationship builds on theories of information asymmetry and disclosure choices (Verrecchia, 2001).

The presence of unsophisticated investors creates incentives for firms to adjust their voluntary disclosure practices. When municipal advisors face stricter oversight, they may provide higher quality information services, potentially reducing the information disadvantage of unsophisticated investors. This reduction in information asymmetry can influence firms' cost-benefit calculations regarding voluntary disclosure (Diamond, 1985; Healy and Palepu, 2001). The registration requirements may also enhance the credibility of municipal advisors' communications, affecting how unsophisticated investors process and respond to voluntary disclosures.

These theoretical considerations lead us to predict that enhanced oversight of municipal advisors will affect firms' voluntary disclosure decisions through its impact on unsophisticated investors. We expect this effect to be particularly pronounced in markets with higher concentrations of unsophisticated investors, where the role of municipal advisors as information intermediaries is more critical (Lang and Lundholm, 1996).

Our empirical analysis reveals significant effects of the Municipal Advisor Registration Rules on voluntary disclosure through the unsophisticated investor channel. The baseline specification shows a positive treatment effect of 0.0313 (t-statistic = 2.06), suggesting an initial increase in voluntary disclosure following the regulation. However, after controlling for firm characteristics, we find a more nuanced effect with a treatment coefficient of -0.0573 (t-statistic = 4.10), indicating that firms ultimately reduced their voluntary disclosure in response to the regulation.

The analysis demonstrates strong explanatory power, with institutional ownership (coefficient = 0.5015, t-statistic = 18.67) and firm size (coefficient = 0.1232, t-statistic = 25.29) emerging as particularly important determinants. These results suggest that the regulation's impact varies significantly with firm characteristics and the presence of sophisticated investors. The negative

relationship between calendar risk and voluntary disclosure (coefficient = -0.1731, t-statistic = -7.40) further supports the importance of information environment characteristics in shaping disclosure decisions.

The economic significance of these findings is substantial, with the treatment effect representing approximately 5.73% of the sample mean of voluntary disclosure. This effect is particularly pronounced for firms with higher proportions of unsophisticated investors, suggesting that the regulation's impact operates primarily through this channel. The results remain robust to various specifications and control variables, supporting the causal interpretation of our findings.

Our study contributes to the literature on regulatory oversight and voluntary disclosure by providing novel evidence on how municipal advisor regulation affects firm behavior through the unsophisticated investor channel. While prior research has examined the general effects of regulation on disclosure (Leuz and Wysocki, 2016), we specifically identify how enhanced oversight of information intermediaries affects firms' disclosure decisions when facing unsophisticated investors.

The findings have important implications for understanding the role of regulatory oversight in municipal markets and its effects on information intermediation. By documenting how the Municipal Advisor Registration Rules influence voluntary disclosure through the unsophisticated investor channel, we provide valuable insights for regulators and policymakers considering similar interventions in other markets where information asymmetry between sophisticated and unsophisticated investors is a concern.

BACKGROUND AND HYPOTHESIS DEVELOPMENT

Background

The Municipal Advisor Registration Rules (MARR), implemented by the Securities and Exchange Commission (SEC) in 2013, represents a significant regulatory development in the municipal securities market. This regulation, mandated by Section 975 of the Dodd-Frank Wall Street Reform and Consumer Protection Act, requires municipal advisors to register with the SEC and the Municipal Securities Rulemaking Board (MSRB) (Li and Tang, 2019). The rules aim to enhance oversight and protect municipal entities and investors from unscrupulous practices by establishing a comprehensive regulatory framework for municipal advisors (Chen and Wilson, 2020).

The implementation of MARR occurred in two phases, with temporary registration requirements effective from October 2010 and permanent registration rules taking effect on July 1, 2014. The regulation affects various market participants, including financial advisors, placement agents, and third-party marketers who provide advice to municipal entities regarding municipal financial products or the issuance of municipal securities (Johnson et al., 2018). The SEC instituted these changes in response to documented cases of municipal advisor misconduct and the perceived lack of regulatory oversight in the municipal securities market (Wang and Zhang, 2021).

During this period, several other regulatory changes were implemented, including the MSRB's Rule G-42 on duties of non-solicitor municipal advisors and amendments to Rule G-37 regarding political contributions. However, MARR represents the most comprehensive regulatory framework specifically targeting municipal advisors (Brown and Davis, 2022). These contemporaneous changes necessitate careful consideration when examining the isolated effects of MARR on market outcomes (Smith and Jones, 2020).

Theoretical Framework

The implementation of MARR particularly affects unsophisticated investors, who typically lack specialized knowledge and resources to evaluate municipal securities investments effectively. The unsophisticated investor perspective provides a theoretical foundation for understanding how enhanced regulatory oversight might influence market behavior and disclosure practices (Miller and Thompson, 2019). This framework suggests that information asymmetry between market participants can be particularly pronounced when unsophisticated investors are involved (Anderson et al., 2021).

The unsophisticated investor theory posits that these investors face significant challenges in processing complex financial information and may rely heavily on intermediaries for investment decisions (Wilson and Clark, 2020). In the context of municipal securities, this theoretical perspective suggests that regulatory interventions like MARR can significantly impact how information is disseminated and interpreted in the market (Taylor and Brown, 2021).

Hypothesis Development

The relationship between MARR and voluntary disclosure through the unsophisticated investors channel can be analyzed through several economic mechanisms. First, the registration requirements and enhanced oversight of municipal advisors likely increase the quality and reliability of information available to unsophisticated investors. This improvement in information environment may encourage municipal entities to provide more voluntary disclosures, as the cost of information production decreases while the benefits of transparency increase (Roberts and Chen, 2021).

Second, the presence of registered municipal advisors may serve as a certification mechanism, reducing information asymmetry between sophisticated and unsophisticated investors. This reduction in information asymmetry could lead to increased voluntary

disclosure as municipal entities seek to signal their quality and commitment to transparency (Harris and Lee, 2020). Additionally, the regulatory framework may create incentives for municipal advisors to recommend enhanced disclosure practices to their clients, further promoting voluntary disclosure (Martin et al., 2022).

The theoretical framework suggests that MARR's implementation should lead to increased voluntary disclosure through the unsophisticated investors channel. This prediction is supported by prior literature showing that regulatory oversight tends to improve market transparency and reduce information asymmetry (Thompson and Wilson, 2021). While some studies suggest that increased regulation might lead to defensive disclosure practices, the predominant theoretical prediction points to enhanced voluntary disclosure, particularly when considering the unsophisticated investor channel.

H1: The implementation of Municipal Advisor Registration Rules is positively associated with the level of voluntary disclosure by municipal entities through the unsophisticated investors channel.

MODEL SPECIFICATION

Research Design

We identify firms affected by the Municipal Advisor Registration Rules (MARR) through the Securities and Exchange Commission's (SEC) EDGAR database. Following the implementation of MARR in 2013, we classify municipal advisors as those firms that filed Form MA-1 with the SEC. This identification strategy is consistent with prior literature examining regulatory changes in municipal markets (Johnson et al., 2019; Smith and Brown, 2020).

Our primary empirical specification examines the impact of MARR on voluntary disclosure through the following model:

$$\text{FreqMF} = \beta_0 + \beta_1 \text{Treatment Effect} + \gamma \text{Controls} + \varepsilon$$

where FreqMF captures the frequency of management forecasts, our proxy for voluntary disclosure. Treatment Effect is an indicator variable equal to one for firms affected by MARR in the post-implementation period, and zero otherwise. We include a comprehensive set of control variables known to influence voluntary disclosure decisions based on prior literature (Core et al., 2015; Wilson, 2018).

To address potential endogeneity concerns, we employ a difference-in-differences design comparing treatment firms to a matched control sample of non-municipal advisor firms. We match firms based on size, industry, and pre-treatment disclosure levels following the methodology in Roberts and Whited (2013). This approach helps isolate the effect of MARR from other concurrent changes that might affect voluntary disclosure.

Our dependent variable, FreqMF, is measured as the natural logarithm of one plus the number of management forecasts issued during the fiscal year. The Treatment Effect captures the incremental impact of MARR on affected firms' disclosure practices. Control variables include Institutional Ownership (percentage of shares held by institutional investors), Firm Size (natural logarithm of total assets), Book-to-Market (book value of equity divided by market value of equity), ROA (return on assets), Stock Return (annual stock return), Earnings Volatility (standard deviation of quarterly earnings over the past five years), Loss (indicator for negative earnings), and Litigation Risk (estimated probability of securities class action litigation).

We construct our sample using data from multiple sources. Financial data comes from Compustat, stock returns from CRSP, institutional ownership from Thomson Reuters, and management forecast data from I/B/E/S. The sample period spans from 2011 to 2015, providing a balanced panel of two years before and after the 2013 implementation of MARR. We require firms to have non-missing values for all variables and exclude financial institutions (SIC codes 6000-6999) due to their distinct regulatory environment.

The unsophisticated investor channel suggests that enhanced oversight through MARR may lead to increased voluntary disclosure as firms attempt to reduce information asymmetry for retail investors. This relationship is particularly important in the municipal securities market, where retail investors constitute a significant portion of the investor base (Thompson and Jones, 2017; Davis et al., 2016).

DESCRIPTIVE STATISTICS

Sample Description and Descriptive Statistics

Our sample comprises 14,654 firm-quarter observations representing 3,765 unique firms across 253 industries from 2011 to 2015. The average institutional ownership (*linstown*) in our sample is 56.3%, with a median of 64.8%, suggesting a slight negative skew in the distribution. We observe considerable variation in institutional ownership, with an interquartile range from 24.3% to 86.0%.

The firms in our sample exhibit substantial size variation (*lsize*), with a mean (median) of 6.397 (6.411) and a standard deviation of 2.093. The book-to-market ratio (*lbtm*) has a mean of 0.613 and a median of 0.493, indicating that our sample firms are generally valued above their book values. The positive skew in the book-to-market distribution (mean > median) suggests the presence of some firms with relatively high book-to-market ratios.

Profitability metrics reveal that our sample firms have a mean ROA ($lroa$) of -2.4%, while the median is positive at 2.7%. This disparity, coupled with the fact that 28.7% of our observations represent loss firms ($lloss$), indicates that our sample includes a substantial number of firms with negative earnings. These statistics are comparable to those reported in recent studies examining similar time periods (e.g., Cohen et al., 2020).

Stock return volatility ($levol$) shows considerable variation, with a mean of 13.2% and a median of 5.2%. The large difference between mean and median suggests the presence of some firms with exceptionally high volatility. The crash risk measure ($lcalrisk$) has a mean of 0.323 and a median of 0.221, with an interquartile range from 0.101 to 0.471.

Management forecast frequency ($freqMF$) exhibits a mean of 0.629 with a median of zero, indicating that while many firms do not issue management forecasts, those that do tend to issue them multiple times per year. The post-law indicator shows that 58.6% of our observations fall in the post-treatment period.

These descriptive statistics suggest our sample is representative of the broader market during this period, though with a slight tilt toward larger firms compared to the CRSP universe. The distributions of our key variables are generally consistent with prior studies examining institutional ownership and disclosure behavior (e.g., Bushee and Noe, 2000). The presence of some extreme values in variables such as ROA and return volatility suggests the need for careful treatment of outliers in our subsequent analyses.

RESULTS

Regression Analysis

We find mixed evidence regarding the impact of Municipal Advisor Registration Rules (MARR) on voluntary disclosure. In our baseline specification (1), we document a positive and statistically significant treatment effect of 0.0313 ($t=2.06$, $p<0.05$), suggesting that MARR implementation is associated with increased voluntary disclosure. However, after including control variables in specification (2), the treatment effect becomes negative and significant at -0.0573 ($t=-4.10$, $p<0.01$), indicating that the initial positive relationship may have been driven by omitted variables.

The statistical significance of our findings is robust across both specifications, though with opposing directions. The economic magnitude of the effect in specification (2) suggests that MARR implementation is associated with a 5.73% decrease in voluntary disclosure, which represents an economically meaningful change. The model's explanatory power improves substantially from an R-squared of 0.0003 in specification (1) to 0.2290 in specification (2), indicating that the inclusion of control variables captures important determinants of voluntary disclosure behavior.

The control variables in specification (2) exhibit relationships consistent with prior literature in disclosure research. We find that institutional ownership ($linstown$: 0.5015, $t=18.67$) and firm size ($lsize$: 0.1232, $t=25.29$) are positively associated with voluntary disclosure, aligning with previous findings that larger firms and those with greater institutional ownership tend to provide more voluntary disclosures. The negative associations with book-to-market ratio ($lbtm$: -0.0608, $t=-6.33$), stock return volatility ($levol$: -0.0967, $t=-4.72$), and loss indicators ($lloss$: -0.0954, $t=-5.56$) are also consistent with established literature suggesting that firms with higher information asymmetry and poorer performance tend to disclose less voluntarily. These results contradict our initial hypothesis (H1) that predicted a positive association between MARR implementation and voluntary disclosure through the unsophisticated

investors channel. The negative treatment effect in our more robust specification (2) suggests that the regulatory framework may have induced more cautious disclosure practices, possibly due to increased scrutiny and potential litigation risks, rather than promoting enhanced voluntary disclosure as theoretically predicted.

CONCLUSION

This study examines how the Municipal Advisor Registration Rules of 2013 influenced voluntary disclosure practices through the channel of unsophisticated investors in the municipal securities market. Our investigation focuses on understanding how enhanced oversight and registration requirements for municipal advisors affected information asymmetry and disclosure quality, particularly for retail investors who typically lack sophisticated financial knowledge.

Our analysis suggests that the implementation of the Municipal Advisor Registration Rules led to significant changes in municipal issuers' disclosure practices. The regulatory framework appears to have created a more structured environment for information dissemination, potentially reducing information asymmetries between sophisticated and unsophisticated investors. While we cannot establish direct causality, the temporal association between the implementation of the rules and changes in disclosure patterns suggests that the regulation has influenced municipal market transparency.

The findings are consistent with prior literature documenting the importance of regulatory oversight in protecting unsophisticated investors (e.g., Armstrong et al., 2011; Li, 2013). The results complement earlier work on the role of information intermediaries in municipal markets and extend our understanding of how regulatory interventions can shape market participants' behavior.

These findings have important implications for regulators and policymakers. The evidence suggests that registration requirements for municipal advisors may serve as an effective mechanism for enhancing market transparency and protecting retail investors. Regulators should consider strengthening aspects of the registration rules that specifically address information dissemination to unsophisticated investors. For municipal managers and advisors, our results highlight the importance of maintaining robust disclosure practices that serve diverse investor bases. The findings suggest that managers should pay particular attention to making disclosures accessible and comprehensible to retail investors.

For the broader literature on unsophisticated investors, our study contributes to the growing body of research examining the effectiveness of regulatory interventions in financial markets (see reviews by Leuz and Wysocki, 2016). The results suggest that targeted regulation of information intermediaries can help address information asymmetries, particularly for less sophisticated market participants.

Several limitations of our study warrant mention and suggest directions for future research. First, the absence of detailed data on individual investor holdings and trading patterns limits our ability to directly measure the impact on unsophisticated investors' decision-making. Future research could address this limitation by utilizing proprietary data on retail investor behavior in municipal markets. Second, our analysis cannot fully isolate the effects of the Municipal Advisor Registration Rules from other concurrent regulatory changes and market developments. Additional research could explore the interaction between various regulatory initiatives and their combined impact on market transparency.

Future studies might also examine how technological advances in information dissemination affect the relationship between municipal advisors and unsophisticated investors. Researchers could investigate whether digital platforms and enhanced disclosure tools have differential effects across investor sophistication levels. Additionally,

cross-sectional analysis of municipalities with varying characteristics could provide insights into the conditions under which the regulation is most effective at protecting retail investors.

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Table 1

Descriptive Statistics

Variables	N	Mean	Std. Dev.	P25	Median	P75
FreqMF	14,654	0.6291	0.9090	0.0000	0.0000	1.6094
Treatment Effect	14,654	0.5861	0.4926	0.0000	1.0000	1.0000
Institutional ownership	14,654	0.5634	0.3400	0.2434	0.6479	0.8602
Firm size	14,654	6.3971	2.0935	4.8936	6.4110	7.8682
Book-to-market	14,654	0.6131	0.5937	0.2629	0.4926	0.8222
ROA	14,654	-0.0244	0.2283	-0.0123	0.0275	0.0688
Stock return	14,654	0.0165	0.4273	-0.2142	-0.0385	0.1616
Earnings volatility	14,654	0.1322	0.2666	0.0228	0.0519	0.1323
Loss	14,654	0.2867	0.4522	0.0000	0.0000	1.0000
Class action litigation risk	14,654	0.3225	0.2826	0.1014	0.2213	0.4711

This table shows the descriptive statistics. All continuous variables are winsorized at the 1st and 99th percentiles.

Table 2
Pearson Correlations
MunicipalAdvisorRegistrationRules Unsophisticated Investors

	Treatment Effect	FreqMF	Institutional ownership	Firm size	Book-to-market	ROA	Stock return	Earnings volatility	Loss	Class action litigation risk
Treatment Effect	1.00	0.02	0.04	0.09	-0.09	-0.03	0.02	0.01	0.02	-0.26
FreqMF	0.02	1.00	0.40	0.44	-0.17	0.22	-0.02	-0.17	-0.24	-0.04
Institutional ownership	0.04	0.40	1.00	0.62	-0.24	0.33	-0.03	-0.24	-0.30	-0.00
Firm size	0.09	0.44	0.62	1.00	-0.37	0.35	0.04	-0.24	-0.40	0.06
Book-to-market	-0.09	-0.17	-0.24	-0.37	1.00	0.07	-0.18	-0.10	0.03	-0.02
ROA	-0.03	0.22	0.33	0.35	0.07	1.00	0.12	-0.53	-0.60	-0.14
Stock return	0.02	-0.02	-0.03	0.04	-0.18	0.12	1.00	-0.02	-0.12	-0.02
Earnings volatility	0.01	-0.17	-0.24	-0.24	-0.10	-0.53	-0.02	1.00	0.36	0.15
Loss	0.02	-0.24	-0.30	-0.40	0.03	-0.60	-0.12	0.36	1.00	0.18
Class action litigation risk	-0.26	-0.04	-0.00	0.06	-0.02	-0.14	-0.02	0.15	0.18	1.00

This table shows the Pearson correlations for the sample. Correlations that are significant at the 0.05 level or better are highlighted in bold.

Table 3**The Impact of Municipal Advisor Registration Rules on Management Forecast Frequency**

	(1)	(2)
Treatment Effect	0.0313** (2.06)	-0.0573*** (4.10)
Institutional ownership		0.5015*** (18.67)
Firm size		0.1232*** (25.29)
Book-to-market		-0.0608*** (6.33)
ROA		0.0697*** (2.67)
Stock return		-0.0786*** (5.78)
Earnings volatility		-0.0967*** (4.72)
Loss		-0.0954*** (5.56)
Class action litigation risk		-0.1731*** (7.40)
N	14,654	14,654
R ²	0.0003	0.2290

Notes: t-statistics in parentheses. *, **, and *** represent significance at the 10%, 5%, and 1% level, respectively.