Municipal Bond Smithereening: Institutional-to-Retail Distribution and Markups *

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Abstract

We study *smithereening*, the rapid pass-through of newly issued municipal bonds from initial allocations into retail hands through tightly linked interdealer and dealer–customer trades. Using transaction-level municipal bond data, we identify smithereening trades by exact matches on CUSIP, timestamp, and par between an interdealer purchase and a customer sale, and classify a bond as smithereened if it exhibits such activity in the issuance window. Smithereening is common and retail oriented, and smithereened bonds exhibit substantially higher markups relative to the offer in the early aftermarket. In regressions with rich controls and fixed effects, bond-level exposure predicts 23–26 bps higher markups concentrated in small tickets. After Rule G-15 mark-up disclosure in 2018, the excess markups compress, consistent with transparency limiting intermediary rents.

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1. Introduction

The U.S. municipal bond market is a large, retail-intensive segment of fixed income in which household demand is important but access to new issues is mediated by underwriters and dealer networks. Retail willingness to pay can benefit issuers when it is incorporated into offering prices; when bonds are instead first placed with institutional investors and then redistributed to customers at higher prices, part of that willingness to pay is captured by intermediaries. Whether this compensation reflects necessary intermediation services or rents depends on the frictions borne by dealers, including inventory risk, search, and distribution costs. In practice, the path from issuer to final investor remains opaque. Existing work shows that dealers earn sizeable rents in municipal trading, including around new issues and in retail-sized trades, but we know much less about the specific execution practices through which newly issued bonds move from institutional allocations into retail customer accounts. This structure creates a basic question for municipal finance: when retail demand is present at issuance, is that demand reflected in lower borrowing costs for issuers, or is some of the surplus captured later by intermediaries as bonds are redistributed to final customers?

Existing work shows that this question is economically important. Municipal bonds trade with substantial customer markups, price dispersion, and interdealer chains, especially around new issues (e.g. Green et al., 2007a,b; Schultz, 2012). More recent research identifies specific sources of intermediary rents, including endogenous search frictions shaped by product design, strategic retail pricing, dealer networks, and mark-up disclosure rules (Brancaccio and Kang, 2025; Griffin et al., 2023; Dougal et al., 2024; He, 2024). Yet the execution practices that connect institutional primary allocations to retail customer trades remain hard to measure directly. The relevant transactions can occur quickly, across dealer legs, and after the issuer has already sold the bonds.

This paper studies one such practice: *smithereening*, the rapid pass-through of newly issued municipal bonds from initial allocations to retail customers through tightly linked interdealer and dealer–customer trades. Under a when-issued convention, an investor can receive an allocation at the offering price and then sell part of that position almost immediately. A customer-facing dealer buys the same par in the interdealer market and contemporaneously resells it to customers at a higher price and lower yield. The trade sequence is economically simple but important: retail demand is monetized through secondary-market intermediation rather than incorporated into primary-market pricing. The surplus is therefore captured by intermediaries instead of being reflected in the issuer's offering terms.

We identify smithereening using transaction-level municipal bond data. A *Smith Trade* is a dealer sale to a customer that matches an interdealer trade in the same CUSIP at the same timestamp and for the same par amount, where the customer-facing dealer is the buyer in the interdealer transaction. These matched pairs capture pass-through transactions in which a dealer turns over inventory essentially immediately. We then classify a bond as a *Smith Bond* if it experiences at least one such institutional-to-retail handoff during the 30-day period prior to the issuance date. The trade-level measure is deliberately conservative: exact timestamp and par matching misses many economically similar redistribution events. The bond-level measure captures exposure to the broader distribution channel revealed by those matched events.

The first fact is that smithereening is common. Over the first 60 days after issuance, about 10% of customer trades in newly issued bonds satisfy our Smith Trade definition, and roughly 35% of traded new issues experience at least one Smith Trade. The activity is most intense within the first month after issuance, peaking in the 20–30 day window at about 12% of customer trades and nearly 14% of customer-side par volume. It is also strongly retail-oriented. Incidence is highest in small tickets and declines monotonically with trade size; it is disproportionately observed in discount bonds, long-dated bonds, and trades executed on alternative trading systems. In aggregate, approximately $46 billion of customer trading volume in the issuance window is associated with bonds exposed to smithereening.

The second fact is that smithereening is associated with substantially higher customer costs. In univariate comparisons, Smith Bonds carry markups relative to the offer that are roughly 70–90 basis points higher than those of non-Smith Bonds in the early aftermarket, depending on the event-time window. The gap remains positive well beyond the first weeks of trading and is visible out to one year after issuance. Regression estimates confirm that the pattern is not simply a composition effect. After controlling for trade size, bond characteristics, dealer controls, and rich fixed effects, Smith Bonds continue to trade at materially worse terms for customers. In our most saturated bond-level specifications, exposure to smithereening is associated with about 23 basis points of additional markup relative to the offer. By contrast, the Smith Trade coefficient becomes small in the most demanding within-bond specifications, consistent with exact matched prints capturing only a conservative subset of a broader initial-allocation-to-retail distribution process.

The third fact is that the costs are concentrated where a retail distribution mechanism should matter most. Baseline markups are already 74–91 basis points higher for trades below $25,000 than for trades above $1 million. Smithereening adds a further premium across retail-sized tickets, including about 23–39 basis points for trades between $250,000 and $1,000,000. For institutionally sized trades, there is little evidence of an incremental premium, and in some specifications the estimate is slightly negative. Heterogeneity across bonds, dealers, and platforms points in the same direction. The Smith Bond premium is larger in premium bonds, large issues, negotiated offerings, and ATS trades, and it is attenuated among dealers in the top quintile of market share. The evidence therefore does not describe a generic size effect. It describes a retail-facing pricing wedge associated with a specific distribution channel.

These magnitudes imply economically meaningful transfers from customers to intermediaries. Using the roughly $46 billion of customer trading volume associated with smithereening activity in the issuance window, the 23–26 basis point incremental markup from our more saturated specifications implies approximately $105–$120 million in additional dollars paid by customers. The unconditional gaps are larger: applying the 70–90 basis point early-aftermarket spread between Smith Bonds and non-Smith Bonds implies a $300–$400 million upper bound. The latter figures are not causal estimates and should be interpreted as upper bounds because they include composition effects, but they illustrate the scale of the price wedges associated with this distribution channel.

Finally, we study the 2018 amendment to MSRB Rule G-15, which became effective on May 14, 2018. The amendment required dealers, for specified same-day principal transactions with non-institutional customers, to disclose on customer confirmations the dealer's mark-up or mark-down relative to the prevailing market price. If smithereening rents depend on limited customer awareness of embedded dealer compensation, disclosure should compress the wedge. That is what we find. At the transaction level, identified Smith Trades become cheaper relative to other trades in the same bond on the same day; in the most demanding specification, the relative decline is about 4.5 basis points. At the bond level, the compression is larger. The Smith Bond interaction is negative across specifications and remains economically meaningful even with issuance fixed effects. Monthly event-time estimates indicate some adjustment around the effective date and continued compression afterward. The evidence suggests that transparency limits the monetization of interdealer-to-customer pass-throughs. Taken together, the results speak to whether the captured surplus reflects compensation for costly intermediation or rents. The matched trades involve little time for inventory risk, the incremental markups are concentrated in retail-oriented segments rather than large institutional trades, and the wedge compresses after a disclosure rule aimed at customer awareness of dealer compensation.

The paper contributes to three literatures. First, it provides a new empirical measure of a dealer-level distribution practice in municipal bond markets. Prior work documents interdealer chains and retail markups around new issues; we isolate a tighter execution footprint using exact timestamp, par, CUSIP, and dealer-role matching. This makes it possible to distinguish directly observed pass-through trades from bond-level exposure to the pass-through channel.

Second, the paper adds to evidence on retail trading costs and municipal market segmentation. Smithereening is concentrated in retail-oriented trades and bonds, and Smith Bonds trade at worse customer terms even after controlling for standard determinants of markups. The results show that the early aftermarket can serve as a continuation of the primary allocation process, with retail demand reaching final holders through dealer intermediation rather than through the initial book.

Third, the paper contributes to the literature on transparency and intermediary rents. Rule G-15 reduces the excess markups associated with smithereening, indicating that disclosure affects not only average retail trading costs but also the profitability of particular distribution strategies. Even in a market with post-trade reporting, the way newly issued bonds are routed from institutional allocations to retail customers can sustain meaningful wedges between offering terms and retail execution prices.

1.1. Related literature

Our paper builds on a large literature documenting substantial intermediary rents in municipal bonds. Cestau et al. (2019) provide a broad overview of this market, emphasizing its decentralized over-the-counter structure, investor segmentation, trading costs, and the role of increasingly granular post-trade data in studying municipal intermediation. Foundational evidence on customer markups is provided by Green et al. (2007b), who show that dealers earn sizeable profits in an opaque market where search frictions and inventory considerations generate dispersion in transaction prices. Focusing on new issues, Green et al. (2007a) document persistent gaps between placement prices and the prices ultimately paid by investors as bonds pass through intermediation chains. Consistent with the importance of trade size, Harris and Piwowar (2006) show that transaction costs are higher for smaller trades and increase with credit risk, instrument complexity, time to maturity, and time since issuance. Downing and Zhang (2004) show that municipal bond price volatility increases with the number of trades and decreases with average trade size, consistent with meaningful differences in trading conditions across small and large transactions.

A central theme in subsequent work is how transparency reforms reshape these rents. Using the start of real-time transaction reporting, Schultz (2012) shows that within-bond price dispersion falls sharply, while average markups change little for most trades, and he emphasizes that new issues often move through interdealer chains in which trade sizes shrink, prices rise, and customer markups increase with chain length. Chalmers et al. (2021) study a later reduction in reporting lags and find declines in trading costs and increases in activity, with benefits concentrated among retail investors. Together, these papers show that post-trade transparency compresses some dimensions of dispersion but leaves economically meaningful intermediation rents in place.

Cornaggia et al. (2022) provide related evidence that information frictions remain important even when relevant information is available in more transparent markets. Studying municipal bonds insured by distressed monoline insurers, they show that municipal investors react slowly to early signals from equity and CDS markets, with institutional investors responding faster than retail investors. Hund et al. (2026) provide a closely related market-level perspective on these rents. Using new-issue data from 2005–2024, they estimate a structural model that classifies investors by informedness and show that both the probability of uninformed trading and the markups charged to uninformed investors have declined over time. They also show that the conventional $100,000 trade-size cutoff performs poorly as a proxy for investor informedness, especially after the 2018 markup disclosure rule. Our analysis complements theirs by identifying a specific execution channel through which retail-facing rents are generated: rapid interdealer-to-customer pass-through trades that redistribute new-issue allocations into smaller customer trades at elevated markups.

A complementary strand emphasizes the roles of market structure and pricing conventions. Brancaccio and Kang (2025) formalize how endogenous search frictions interact with bond design and market structure to shape trading outcomes, while Li and Schürhoff (2019) document a core–periphery dealer network in which central dealers intermediate a large share of volume. Griffin et al. (2023) show that customer markups remain highly dispersed across dealers and even across trades of the same bond and size, and they document price clustering on salient grid points, consistent with strategic pricing toward retail investors. Related work highlights how risk and disclosure affect dealer behavior in primary and retail trading. Bergstresser and Herb (2021) show that new-issue markups embed compensation for underwriting price risk, while He (2024) finds that the 2018 confirmation rule requiring disclosure of markups on many retail riskless-principal trades modestly reduces trading costs for small investors. Beyond municipals, Eisfeldt et al. (2024) show that interdealer price dispersion in corporate bonds is priced and related to credit spreads.

Recent work also examines how institutional access and relationships shape primary-market outcomes. Cao et al. (2024) show that municipal bond mutual funds rely heavily on primary allocations and that stronger fund–underwriter connections predict larger allocations of more underpriced issues. Adelino et al. (2023) provide causal evidence that mutual fund inflows increase issuance and lower yields, with effects concentrated among issuers connected to funds through underwriters. Dougal et al. (2024) study dealer quid pro quo in the municipal bond market, emphasizing how relationship-based exchange can shape allocation and dealers' subsequent incentives.

Within this broader literature, our closest point of comparison is Schultz (2012). Like Schultz, we focus on new issues and on how bonds migrate from initial allocations to retail investors through dealer intermediation, with prices increasing as par moves through the chain. Our contribution is to isolate a tighter, event-level margin using EMMA transaction data that include second-level timestamps and anonymized dealer identifiers. Rather than inferring splitting from sequences of trades over longer horizons, we define a smithereening trade as a dealer sale to a customer that matches an interdealer trade in the same CUSIP on the exact timestamp and par amount, where the customer-facing dealer is the interdealer buyer. This conservative matching approach identifies rapid interdealer-to-customer pass-throughs that involve essentially no inventory risk. The trade-level measure supports within-bond tests of exact matched prints, while the bond-level exposure measure supports cross-sectional and within-issuance tests of whether issues exhibiting this footprint trade at worse customer terms. We show that exposure to smithereening is associated with materially higher retail markups even after conditioning on trade size, bond characteristics, and dealer controls, with incremental costs concentrated in small tickets. We also connect transparency to distribution practices by showing that smithereening-related markups decline after the 2018 implementation of markup disclosure requirements, consistent with disclosure limiting the monetization of rapid pass-throughs.

2. Data and Methodology

2.1. Sample construction

Our analysis is based on the universe of municipal bond transactions recorded in the Municipal Securities Rulemaking Board's (MSRB) Electronic Municipal Market Access (EMMA) system from 2014–2018. EMMA reports, for every trade, the bond CUSIP, the state and locality of the issuer, the offering and maturity dates, and detailed trade attributes including whether the transaction is a dealer sale to a customer, a dealer purchase from a customer, or an interdealer trade; the trade price and par amount; and anonymized dealer identifiers for the buying and selling dealers.

Following standard practice in the municipal bond literature, we focus on the secondary market trades and apply conventional filters to clean the transaction records (e.g. Green et al., 2007b; Schultz, 2012; Griffin et al., 2023). We exclude cancelled trades, corrected trades, and trades with missing prices or par amounts, as well as trades with par values below $5,000. We consolidate multiple dealer identifiers that correspond to the same dealer entity and drop a small number of extremely large or obviously erroneous trades. Because our primary interest is in how newly issued bonds migrate from institutional to retail hands, we restrict our sample to 365 days before and after issuance, resulting in 5.79 million dealer sales to customers. We further restrict the primary regression sample to trades occurring within the first 60 calendar days after a bond's offering date. This horizon captures the period in which primary-market allocations are being actively intermediated through the secondary market and includes the window over which we measure the pricing consequences of smithereening. The resulting regression sample contains 1.77 million dealer sales to customers in new issues, with roughly 796 thousand of those sales having at least one preceding interdealer transaction.

2.2. *Identifying smithereening trades*

Smithereening describes the rapid pass-through of newly issued municipal bonds from initial allocations to retail investors through tightly linked interdealer trades and dealer sales to customers. It resembles the sequences emphasized by Schultz (2012), in which par moves through multiple dealers as prices ratchet upward. Our goal, however, is not to reconstruct entire chains. In the EMMA data, fully tracking chains quickly becomes noisy because institutional-to-retail redistribution can occur through many small prints, across multiple intermediaries, with occasional reporting lags, partial fills, and brief inventory holds. Those features make it difficult to distinguish true pass-through events from ordinary inventory-based market making or unrelated interdealer activity. Instead, we target the cleanest footprint of smithereening: instances where a dealer acquires bonds in the interdealer market and contemporaneously sells the same par amount to customers in the same CUSIP. This back-to-back signature isolates the zero-inventory, prearranged handoffs that market participants describe as the core of the practice, while minimizing the risk of misclassification.

Table 1 provides an out-of-sample illustration of the mechanism and motivates our measurement approach using a single new issue, the Peace River Water Supply bond (CUSIP 704612HP8). The bond has a 5% coupon, matures on October 1, 2055, and was issued in a principal amount of \$16.22 million. It was reoffered on July 23, 2025 at a price of 97.71 (yield 5.15%) to two institutional accounts. All trades in the table occur on a when-issued basis prior to the bond's dated date (August 12, 2025). On the following day (July 24, 2025), a dealer rapidly redistributes a portion of the institutional position through a sequence of tightly linked trades. In each episode, an interdealer trade at 99.00 (yield 5.065%) is matched at the identical timestamp and par amount with a dealer sale to a customer at a higher price, generating an immediate increase in price and a corresponding decline in yield for the retail buyer. The table makes the implied rent extraction transparent by reporting markups relative to the reoffering terms: the interdealer leg occurs at a higher price than the offer, and the customer leg occurs at an even higher price, consistent with a rapid interdealer-to-retail handoff with essentially no time for inventory risk or intervening market moves to explain the price difference. The example therefore provides a concrete illustration of how retail demand can be monetized in the aftermarket rather than incorporated into primary pricing.[1]

Guided by this trading pattern, our baseline definition classifies a customer trade as a *smithereening trade* if it is a dealer sale to a customer that matches an interdealer trade in the same CUSIP on the identical timestamp and for the identical par amount, where the customer-facing dealer is the buyer in the interdealer transaction. By construction, these matched pairs identify rapid pass-throughs in which a dealer turns over its position within a single timestamp. Because the purchase and sale occur simultaneously, there is little scope for intervening price movements to explain the price difference, and the dealer bears essentially no inventory risk over the interval. The exact-matching requirement is therefore a deliberately conservative choice. It excludes many economically related episodes in which redistribution occurs with small timing offsets, rounded ticket sizes, partial fills, or brief inventory holds. But the events that remain are straightforward to interpret as prearranged interdealer-to-customer pass-throughs and provide a high-precision measure of smithereening activity.

We use this matching algorithm to construct two central measures of smithereening. The first, *Smith Trade*, is a trade-level indicator equal to one for dealer-to-customer sales that satisfy the matched timestamp-and-par criterion and zero otherwise. *Smith Trade* is useful for describing the micro-level footprint of the practice and for comparing identified pass-

[1]We are especially grateful to Mark Conner of Second Chair LLC for pointing us to the Peace River example, which helped motivate our bond-level measure of smithereening.

through tickets to other contemporaneous trades. The second, and our primary exposure measure in most analyses, is *Smith Bond*, a bond-level indicator equal to one if a bond experiences at least one smithereening trade within the relevant issuance window (under our when-issued convention, during the 30-day period preceding the issuance date), and zero otherwise. We emphasize *Smith Bond* because our trade-level definition is intentionally conservative. In practice, once a bond exhibits a clear, zero-inventory pass-through event, it often also features closely related trading patterns that reflect the same distribution strategy but fail the exact matching rule (for example, small timing offsets, rounded ticket sizes, partial fills, or brief inventory holds). As a result, *Smith Trade* should be viewed as a high-precision tag for a subset of smithereening events, while *Smith Bond* captures a broader bond-level exposure to anomalous trading in the issuance window consistent with this strategy.

This distinction is important and is reflected in our pricing results. The trade-level indicator *Smith Trade* is designed to identify a narrow class of back-to-back pass-through events with high precision, not to provide an exhaustive tag for all trades affected by smithereening within a given issue. Once an issue exhibits such an event, many other customer trades in the same bond can reflect the same distribution strategy and pricing environment but fail the exact timestamp-and-par matching rule (for example, due to small timing offsets, rounded sizes, partial fills, or intermediate inventory holds). As a result, when bond fixed effects are included, *Smith Trade* is effectively compared to other trades within the same smithereened bond that may also carry elevated markups. In these saturated within-bond specifications, the incremental difference between flagged and unflagged trades is therefore expected to be small, and the *Smith Trade* coefficient naturally attenuates. By contrast, the bond-level indicator *Smith Bond* is intended to capture exposure to the broader, bond-level distribution regime associated with smithereening, and it remains a stable and economically meaningful predictor of retail markups in our preferred specifications.

Finally, to quantify the economic magnitude of smithereening in a way that is comparable across trades and bonds, we study markups relative to the offer and residual markups.

Specifically, we estimate expected markups relative to the offer using linear regressions that include bond, dealer, and trade controls and a rich set of fixed effects, and then compute residual markups as the difference between realized and expected markups. We implement this approach using both *Smith Trade* and *Smith Bond* specifications. This allows us to separate the incremental costs associated with smithereening exposure from mechanical trade-size effects and other observable determinants of markups.

2.3. Descriptive statistics and smithereening incidence

Table A1 reports descriptive statistics for our regression sample at both the bond and trade level. Issue sizes are right-skewed: the mean par amount is \$5.40 million, while the median is \$1.00 million; the 25th and 75th percentiles are \$0.39 million and \$3.20 million. Bonds have an average maturity of 11.1 years (median 10 years) and an average coupon of 3.64% (median 3.56%). Fifty-eight percent are callable, most issues trade at a premium (67% premium versus 24% discount), issuance is predominantly tax-exempt (only 5% taxable) and competitively sold (65%), and 85% of issues use a financial advisor.

At the trade level, the sample is strongly retail-oriented. The median customer trade size is \$30,000; the 25th and 75th percentiles are \$20,000 and \$75,000. Trades are frequently executed on alternative trading systems (ATS): 57% of trades are ATS-executed, and the median trade occurs on ATS. Markups relative to the offer are economically meaningful, with a median markup of 1.44% of par relative to the offering yield (and 1.29% relative to the preceding dealer yield).

Table 2 documents how smithereening is distributed over time, trade size, and bond characteristics. Panel A shows that smithereening is concentrated in the issuance window and is not limited to the offering day. In the first 10 days after issuance, about 9% of customer trades meet the exact Smith Trade criterion, and in days 10–30 the share rises to roughly 12% of customer trades. Over the same windows, approximately 36–37% of traded new issues exhibit at least one smithereening event. Panel B shows that exposure to smithereening is tightly linked to retail ticket sizes. Over the first 60 days after issuance, about two thirds of trades below $25,000 occur in Smith Bonds, and nearly half of trades between $25,000 and $100,000 do so, with exposure falling sharply for larger trades. Panel C shows that smithereening is disproportionately observed in bonds that are plausibly retail-oriented. Discount and long-dated bonds exhibit substantially higher incidence than premium or short-dated issues, and ATS-traded bonds show notably higher incidence than bonds that trade off-ATS. Smithereening is also more common among callable bonds and is present in both competitive and negotiated offerings.

3. Main Results

3.1. Univariate and multivariate evidence on smithereening markups

To gauge the economic magnitude of smithereening, we report univariate and multivariate analyses of our *Smith Trade* and *Smith Bond* indicators on dealer markups and markups relative to the offer. In Table 3 we compare explicitly identified smithereening tickets (*Smith Trade*) to other customer trades. Panel A shows that markups relative to the offer on smithereening trades are higher than on non-smithereening trades in the issuance window and early aftermarket. For example, in the 0–10 and 10–20 day windows after issuance, the markup relative to the offer is about 0.29 percentage points higher for smithereening trades, and the gap rises to roughly 0.40–0.43 percentage points in the 20–50 day range, with differences declining starting around day 60. Panel B shows that the trade-level gap varies with ticket size. Differences are modest for the smallest trades (<$25,000) and most pronounced for mid-sized retail tickets: for trades between $100,000 and $1,000,000, smithereening trades carry markups relative to the offer roughly 0.46 percentage points higher than non-smithereening trades. Figure 1, Panel A, reinforces these patterns in event time. Smithereening trades have higher average markups than non-smithereening trades around issuance, but the gap is not constant and attenuates as one moves farther from the offering date.

Table 4 makes the central point of the paper: the economically large and persistent differences in retail execution costs are primarily a *bond-level* phenomenon. Panel A shows that, relative to offering terms, trades in smithereened bonds (*Smith Bond* issues) carry substantially higher markups than trades in otherwise comparable non-smithereened bonds throughout the first months of trading. In the first 10 days after issuance, the gap relative to the offer is about 0.67 percentage points; it rises to roughly 0.87–0.97 percentage points in the 20–90 day range and remains economically large even at longer horizons. Panel B shows that these differences are concentrated where retail participation is greatest. Over the first 60 days, for trades below $25,000 the mean markup relative to the offer is 1.77% of par in smithereened bonds versus 1.13% in non-smithereened bonds, a difference of 0.64 percentage points; for trades between $25,000 and $100,000, the difference is also 0.64 percentage points (1.79% versus 1.14%). The gap remains sizable for mid-sized retail trades and becomes much smaller for institutionally sized tickets, consistent with smithereening reflecting a distribution regime rather than a mechanical trade-size effect. Figure 1, Panel B, shows the same fact visually: the markup spread between smithereened and non-smithereened bonds is large around issuance and remains elevated across event time.

Indeed, a striking feature of the bond-level results is their persistence. In Figure 1, Panel B, *Smith Bond* issues exhibit substantially higher average markups than non-*Smith Bond* issues around issuance, and the gap remains positive for essentially the full event-time window out to one year. Table 4 shows that the premium builds over the first month and then remains roughly flat and economically meaningful at longer horizons, indicating that smithereening is not merely an opening-period artifact. A natural interpretation is that smithereened bonds are routed into a more retail-oriented trading environment through particular intermediaries, platforms, and pricing conventions, and that this environment sustains higher markups well beyond the initial distribution period.

Finally, these univariate differences are economically meaningful. In the early aftermarket, the markup spread between *Smith Bond* and non-*Smith Bond* issues is on the order of 70–90 basis points. On an individual trade, a 0.64 percentage point gap corresponds to about $160 on a $25,000 trade and about $640 on a $100,000 trade. We do not convert the unconditional 70–90 basis point spread into an aggregate dollar estimate because the spread is trade-weighted while customer trading volume is highly skewed toward large trades. These univariate magnitudes should be interpreted as descriptive evidence because they reflect differences in the composition of bonds, dealers, and trading environments correlated with smithereening exposure, but they underscore that the retail price consequences associated with smithereened issues are economically substantial.

Tables 5 and 6 move from these comparisons to regressions of markups relative to the offer. Table 5 asks whether the exact matched trades themselves are priced differently from other customer trades. The answer is yes in specifications that compare across bonds and trading environments, but the estimate shrinks as the comparison becomes more local. With only trade-date fixed effects, *Smith Trade* is associated with a 14.9 basis point higher markup. Adding trade-size controls, dealer controls, and bond characteristics reduces the coefficient to 5.0 basis points, and the estimate falls to 2.5–2.9 basis points once issuer or issuance fixed effects absorb more of the cross-sectional variation. In the most saturated specifications the effect is small: it is statistically insignificant with issuance-date or bond fixed effects, and negative with bond-date fixed effects.

This pattern is consistent with how the variable is constructed. *Smith Trade* is a high-precision tag for a narrow type of pass-through event, not a complete label for every trade affected by the same distribution strategy. Once the model compares trades within the same bond, or within the same bond on the same day, the omitted comparison group can include trades that are economically part of the same redistribution process but fail the exact timestamp-and-par match. The trade-level coefficient therefore answers a narrow within-bond question, and it naturally attenuates in the most demanding specifications.

Table 6 uses the broader exposure measure. Here the result is much more stable. The

Smith Bond coefficient is 60.7 basis points with trade-date and rating fixed effects, 54.7 basis points after adding trade-size and dealer controls, and 25.1 basis points after adding bond characteristics. It remains between 23.0 and 25.8 basis points in specifications with issuer, issuance, or issuance-date fixed effects. Thus the main regression evidence is not that each mechanically identified print carries a large incremental markup relative to other prints in the same issue. Rather, bonds that exhibit this pass-through behavior trade at systematically worse terms for retail customers throughout the issuance window. Economically, a 23–26 basis point bond-level premium amounts to roughly $230–$260 on a $100,000 customer purchase, even after comparing within narrow issuance or issuer environments. The contrast between Tables 5 and 6 therefore points to smithereening as a distribution channel that changes the retail pricing environment of the bond, not only the markup on the matched pass-through prints we can observe directly.

Figure 2 complements the regressions by plotting residual markups, defined as the difference between realized markups and the markups predicted by baseline models that use the same controls and fixed effects as the corresponding fully controlled specifications, but exclude the Smith Trade and Smith Bond treatment indicators. The event-time profiles mirror the main conclusion: residual spreads are modest and noisier when comparing *Smith Trade* to other trades, but they are economically larger and more persistent when comparing *Smith Bond* issues to non-smithereened issues. Together, the univariate tables, regression evidence, and event-time figures show that smithereening is associated with a bond-level shift in retail execution costs that is concentrated in the ticket sizes most relevant for households.

Table 7 then asks where the bond-level premium comes from. The baseline trade-size coefficients first confirm the familiar level effect: relative to trades above $1 million, trades below $25,000 carry 74–91 basis points higher markups, and trades of $25,000–$99,999 carry 83–99 basis points higher markups. The size gradient is still present for larger retail-sized tickets, but it is smaller: the baseline premium is 56–78 basis points for $100,000–$249,999 trades and 18–46 basis points for $250,000–$999,999 trades.

The interaction terms show that smithereening adds to this already steep retail gradient. For trades below \$25,000, the *Smith Bond* interaction adds 37–49 basis points. For \$25,000–\$99,999 and \$100,000–\$249,999 trades, the incremental premium is similar, roughly 33–42 and 33–48 basis points, respectively. Even in the \$250,000–\$999,999 bucket, the interaction remains positive and economically meaningful, at about 23–39 basis points. The standalone *Smith Bond* coefficient, which corresponds to trades above \$1 million, is small and becomes negative in the richer specifications.

The implication is that the bond-level effect in Table 6 is not a generic markup increase on all trades in smithereened issues. It is concentrated in the ticket sizes where retail participation is most important. Large trades in smithereened bonds do not appear to pay a higher premium once the model conditions on controls and fixed effects; if anything, their markups are slightly lower in the more saturated columns. The economic effect is therefore retail-facing: a bond exposed to smithereening is associated with meaningfully higher markups on the smaller trades through which the redistributed allocation reaches customer accounts. We interpret these trade-size bins as retail-oriented trading segments rather than direct measures of investor informedness; this distinction is important because Hund et al. (2026) show that the standard \$100,000 cutoff has become a noisy proxy for uninformed trading in the modern municipal market.

These findings also fit naturally into the magnitudes documented in the municipal microstructure literature. Green et al. (2007b) show that retail customer markups in municipals are economically large and decline sharply with trade size, while Green et al. (2007a) document sizeable gaps between reoffering terms and retail execution prices for new issues. In their new-issue setting, they estimate an expected markup of about 70 basis points for a \$10,000 day-one retail purchase over the reoffering price, and substantially larger markups for retail investors who do not transact at the reoffering price. Schultz (2012) similarly emphasizes that new issues often migrate to households through interdealer sequences in which trade sizes shrink and prices ratchet upward, with the largest costs borne in small retail tickets.

Our contribution is to connect these well-established facts to a concrete execution footprint that can be measured systematically in modern EMMA data. Rather than treating trade splitting as a diffuse chain phenomenon, we isolate high-precision pass-through events using second-level timestamps and exact par matching, and we use these events to construct a bond-level exposure measure that captures whether an issue is routed through this distribution channel at all. This lets us separate two objects that are hard to disentangle in earlier data: the general level of retail markups in municipals and the incremental markup premium associated with a specific initial-allocation-to-retail redistribution strategy. In particular, the trade-size interactions in Table 7 show that this premium is concentrated in retail-sized transactions and largely absent for institutionally sized trades, consistent with smithereening operating as a distribution mechanism targeted at household demand rather than a generic size effect.

3.2. Smithereening and pricing conventions

Table 8 examines whether smithereening is associated with systematic differences in how dealers choose prices and yields on customer trades. Following Griffin et al. (2023), we classify transaction prices and yields into coarse and fine grids. The motivation is that retail bond pricing often clusters on salient, easy-to-quote ticks, and Griffin et al. (2023) argue that trades executed on these coarse grids carry higher markups, consistent with dealers using rounding and pricing conventions strategically when selling to less sophisticated or higher-search-cost customers. Coarse prices and yields are quarter-point and odd-eighth ticks, while fine prices (yields) are non-quarter exact-penny (basis-point) values. We then regress four indicator variables: coarse price, fine price, coarse yield, and fine yield, on the *Smith Bond* dummy, controlling for the same trade-, dealer-, and bond-level covariates as in Table 6.

Table 8 shows that smithereening is most strongly associated with pricing on salient *coarse price* grid points. The coefficient on *Smith Bond* in the coarse-price specification is 0.044 ($t = 8.43$), implying that trades in smithereened bonds are about 4.4 percentage points more likely to occur at quarter-point or odd-eighth prices, conditional on the full set of controls. The corresponding effect on *fine prices* is also positive but notably smaller at 0.018 ($t = 6.29$). By contrast, the yield-rounding results are weaker. The coefficient on *coarse yield* is small and statistically insignificant (0.003, $t = 0.71$), while *fine yield* is slightly lower for smithereened bonds (-0.007, $t = -1.77$).

Taken together, these estimates indicate that the main rounding footprint of smithereening operates through the *price* at which retail customers transact, rather than through a parallel shift toward coarse yield ticks. The pattern is consistent with dealers repackaging redistributed inventory at focal, easy-to-quote price points when selling to retail clients, and it suggests that smithereening is associated with greater use of salient price grids rather than merely more granular quoting.

3.3. Heterogeneity in Smithereening Markups

Table 9 explores how the markup differences associated with smithereening vary across economically relevant segments of the market. Each column starts from the baseline *Smith Bond* specification and adds a single interaction between *Smith Bond* and a characteristic that proxies for retail orientation or dealer market power. The specifications interact *Smith Bond* with (i) a premium-bond indicator (premium versus discount), (ii) issue size (top versus bottom quintile), (iii) offering method (negotiated versus competitive), (iv) dealer market share (top versus bottom quintile), and (v) ATS execution. All regressions include the same controls and fixed effects as Table 6. The main effect of *Smith Bond* therefore captures the incremental markup in the omitted category for each split, and the interaction term shows how that effect differs in the complementary category.

Across all five columns, the *Smith Bond* main effect is positive and statistically significant in the omitted category, so the interaction estimates should be read as changes relative to an already positive smithereening premium. The premium is 11.4 basis points for discount bonds, and the premium-bond interaction adds 8.2 basis points. The implied effect for premium bonds is therefore 19.6 basis points, about 70% larger than the discount-bond effect. This is consistent with the idea that pricing discretion is especially valuable in the segment of the market that is more naturally sold to retail investors.

The same logic applies to issue size and offering method. In the bottom issue-size quintile, the smithereening premium is 14.1 basis points; for top-quintile issues, the interaction adds 13.7 basis points, bringing the implied effect to 27.8 basis points. Competitive offerings have a 21.3 basis point premium, while negotiated offerings add another 4.7 basis points, for an implied effect of 26.0 basis points. The negotiated interaction is smaller than the premium and issue-size interactions, but it points in the expected direction: where underwriters and dealers have more discretion over allocation and distribution, the markup premium associated with smithereening is larger.

Dealer and platform heterogeneity sharpen the interpretation. Among bottom-quintile dealers by market share, the *Smith Bond* premium is 27.5 basis points. The top-quintile interaction is -7.2 basis points, so the implied premium for the largest dealers is still positive, at 20.3 basis points, but materially smaller. This is consistent with smaller dealers facing less competitive pressure, weaker reputational constraints, or more segmented retail clienteles. For ATS trades, the baseline off-ATS premium is 18.0 basis points and the ATS interaction adds 7.4 basis points, implying a 25.4 basis point premium for ATS-executed trades. The ATS main effect indicates that ATS trades are also modestly more expensive at baseline, but the economically larger result is that the smithereening premium is larger when the trade is routed through ATS, consistent with electronic venues being part of the retail distribution channel rather than eliminating the underlying pricing wedge.

Taken together, Table 9 shows that the *Smith Bond* premium is not uniform. It is larger in premium bonds, large issues, negotiated offerings, low-market-share dealer trades, and ATS-executed trades. Those are precisely the settings where retail distribution, dealer discretion, or segmented access are likely to matter most.

3.4. *Smithereening, Inventory Risk, and Liquidity Provision*

A natural concern is that the markups we attribute to smithereening might simply reflect compensation for liquidity provision or inventory risk. In standard models of dealer intermediation, dealers earn higher gross spreads when they absorb order imbalances, bear price risk, or stand ready to trade in thin markets. Our identification strategy and the zero-inventory nature of smithereening events, however, make such explanations less compelling in this setting.

By construction, our baseline *Smith Trade* definition restricts attention to customer trades that are matched one-for-one with interdealer trades at the same timestamp and in the same par amount. In these events, the dealer that intermediates between the institutional seller and the retail buyer effectively turns over its inventory instantaneously: the interdealer purchase and the customer sale share a timestamp, so there is no intervening period during which the dealer is exposed to market-wide or idiosyncratic price risk. The dealer profits instead from the predictable price step-up between the interdealer and customer legs. Table 1 illustrates a typical case in which the dealer repeatedly buys at 99 and sells at 100, capturing a one-point capital gain on each slice of the institutional allocation without bearing meaningful inventory or funding risk.

The cross-sectional patterns are also difficult to reconcile with a pure risk-based story. If higher markups were primarily compensation for bearing inventory risk, we would expect them to be more pronounced in large, lumpy trades and to affect institutional tickets at least as much as retail ones. Instead, our estimates show that the incremental markups associated with *Smith Bond* are concentrated in the smallest trade-size buckets and are minimal or even negative for trades above $1,000,000. Combined with the evidence that smithereened bonds are disproportionately priced at coarse grid points in Table 8, this suggests that the additional markups are better interpreted as dealers using their control over distribution and pricing conventions to extract surplus from retail investors, rather than as compensation for absorbing difficult order flow. In this sense, the smithereening channel complements, rather than duplicates, standard accounts of liquidity provision in dealer markets.

3.5. Difference-in-differences evidence from Rule G-15 amendment

We complement our cross-sectional evidence with a difference-in-differences design that exploits the implementation of the MSRB's Rule G-15 mark-up disclosure requirement, which became effective on May 14, 2018. The underlying idea is that disclosure should reduce dealers' ability to charge high markups on retail trades that are effectively riskless-principal pass-throughs, and therefore should compress the excess markups we associate with smithereening.

We implement two related difference-in-differences tests, reported in Table 10. In both panels, the treated group is defined by our smithereening measures and the control group is the complementary set of non-smithereening observations. The post period is all dates past May 14, 2018, and the regression sample spans November 14, 2017 through November 14, 2018 to balance the pre and post periods. All specifications include the same bond, trade, and dealer controls as in the main markup regressions. The key coefficient of interest is the interaction between treatment status and the post indicator, which captures the change in markups for treated observations relative to controls around the introduction of disclosure.

Panel A treats *Smith Trade* customer transactions as the treated group. Before the interaction is introduced, identified smithereening trades carry higher markups: the *Smith Trade* coefficient is 26.5–27.4 basis points in the first two columns. The interaction with *Post G-15* is then negative and statistically significant. The estimated decline is 11.3 basis points in the baseline specification and 11.1 basis points after adding trade-date fixed effects. Column 3 adds bond-date fixed effects, so the comparison is between smithereening and non-smithereening customer trades in the same bond on the same day. Even in that within-bond-day comparison, the interaction remains negative at -4.5 basis points ($t = -2.41$).

Panel B shifts the treatment definition to the bond level by treating trades in *Smith Bond* issues as the treated group. The pre-disclosure premium is again large: the *Smith Bond* coefficient is 53.3 basis points in column 1, 41.2 basis points with trade-date fixed effects in column 2, and 34.7 basis points with issuance fixed effects in column 3. The interaction *Smith Bond* $\times$ *Post G-15* is negative in all three specifications. The estimated compression is 33.2 basis points in column 1, 22.9 basis points in column 2, and 8.5 basis points in the within-issuance specification. The last estimate is smaller, as expected once common issue-level determinants are absorbed, but it remains statistically significant. The table therefore shows both a level result and a regulatory result: smithereened bonds carry higher markups before disclosure, and the excess premium falls after the Rule G-15 amendment.

To examine the timing of the adjustment more closely, we supplement the baseline design with a monthly difference-in-differences specification that replaces the single post indicator with month indicators interacted with the treatment variable. This approach allows the treatment effect to vary flexibly over time and provides a check that the decline in smithereening-related markups lines up with the implementation of Rule G-15, rather than reflecting unrelated seasonality or slow-moving trends.

Figure 3 reports the resulting event-time coefficients for both treatment definitions. Panel A plots month-by-month effects for *Smith Trade* transactions relative to the omitted pre-period category in the event-study specification. The pre-period coefficients are generally small and centered near zero several months before the effective date, which is consistent with the absence of strong differential pre-trends between smithereening and non-smithereening trades. The estimates move lower around the effective date, suggesting that some adjustment may have begun as dealers prepared for the rule and continued after formal implementation.

Panel B plots the corresponding event-time coefficients when treatment is defined at the bond level using *Smith Bond*. The bond-level effects are economically larger and more persistent. While the pre-period coefficients show modest movement, the post-period estimates turn sharply negative and remain negative for several months following the effective date, indicating a sustained compression of the excess markups associated with smithereened issues. The largest declines occur a few months after implementation, which is consistent with gradual pass-through as disclosure changes dealer behavior and the composition of retail trading in smithereened bonds.

Taken together, the event-time profiles in Panels A and B are consistent with a combination of anticipatory adjustment and gradual implementation. Dealers appear to begin reducing smithereening-related markups in advance of the disclosure requirement, and the full effect of Rule G-15 on the pricing of smithereening trades and smithereened bonds unfolds over subsequent months.

4. Conclusion

This paper highlights a simple but underappreciated feature of municipal primary markets: even after an issue is sold in the primary market, a meaningful share of the surplus associated with retail demand can be determined after the offering through dealer intermediation rather than through the bookbuilding process itself. We study a market practice that participants refer to as *smithereening*, in which institutional allocations are rapidly redistributed into retail hands through tightly linked interdealer and dealer–customer transactions. The evidence shows that this channel is economically important and that it leaves a distinct footprint in transaction data.

The central takeaway is that municipal issuance and secondary-market trading cannot be cleanly separated. When retail demand is not incorporated into primary allocations, it can reappear in the aftermarket as a persistent retail markup premium in the very segment of the market where household participation is most concentrated. In our data, bonds exposed to smithereening exhibit substantially higher retail execution costs, and the incremental costs are concentrated in small tickets while being muted for institutional-sized trades. This pattern is difficult to reconcile with standard risk-based accounts of dealer compensation and instead points to distribution frictions and market power in retail intermediation. A related implication is that the allocation process matters for issuer outcomes. To the extent that the same investor demand that ultimately clears a deal is expressed only after issuance through intermediation chains, part of the potential surplus is captured as secondary-market markups rather than reflected in lower borrowing costs.

A second takeaway is that transparency can discipline, but not eliminate, these rents. The introduction of Rule G-15 is associated with a meaningful compression of smithereening-related markups, and the dynamic responses suggest both anticipatory adjustment and gradual pass-through. More broadly, the results show that even targeted disclosure rules can change how dealer networks monetize retail order flow. At the same time, the persistence of the markup premium and its concentration in particular segments of the market underscore that post-trade reporting alone does not guarantee competitive retail execution.

Looking forward, the findings point to several avenues for market design and future research. First, an important open question is how primary allocation practices and retail order aggregation could be improved to better incorporate household demand at issuance rather than in the aftermarket, and whether doing so would measurably reduce both retail trading costs and issuers' effective borrowing costs. Second, the fact that the strongest patterns appear in pricing conventions and in segments where dealer discretion is likely to be greatest suggests that institutional details of distribution, not only information frictions, should be a core part of how researchers model and regulate municipal trading. Finally, the mechanism we document is unlikely to be unique to munis. Similar institutional-to-retail pass-through strategies may arise in other opaque over-the-counter markets where dealers control access to primary allocations and retail investors face limited direct participation. Identifying when these mechanisms are most likely to operate, and which forms of disclosure or market structure meaningfully curb them, remains a promising direction for future work.

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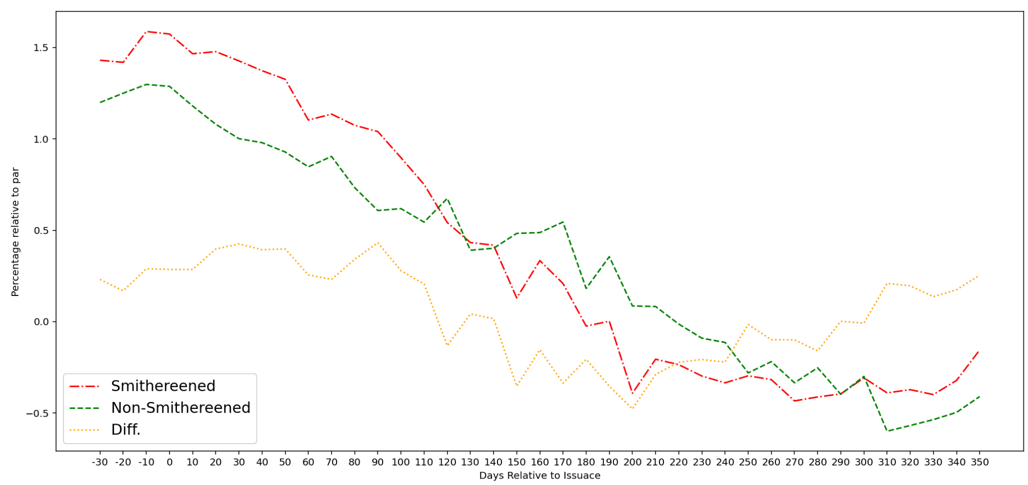
Fig. 1. **Average Transaction Mark-ups on Smith. Trades and Bonds.**
This figure depicts the average transaction mark-ups on smithereening trades (Panel A) and smithereened bonds (Panel B) compared to the non-smithereening trades and non-smithereened bonds, respectively. Within each panel, the red dash-dot line represents the smith. trades or bonds, the green dashed line represents non-smith. trades or bonds, and the yellow dotted line represents the differences between the smith. and non-smith. trades or bonds. The vertical axis shows the total mark-up in percent, while the horizontal line shows the number of days relative to the offering date of the bond.

Panel A. Smithereening vs Non-Smithereening Trades



Panel B. Smithereened vs Non-Smithereened Bonds

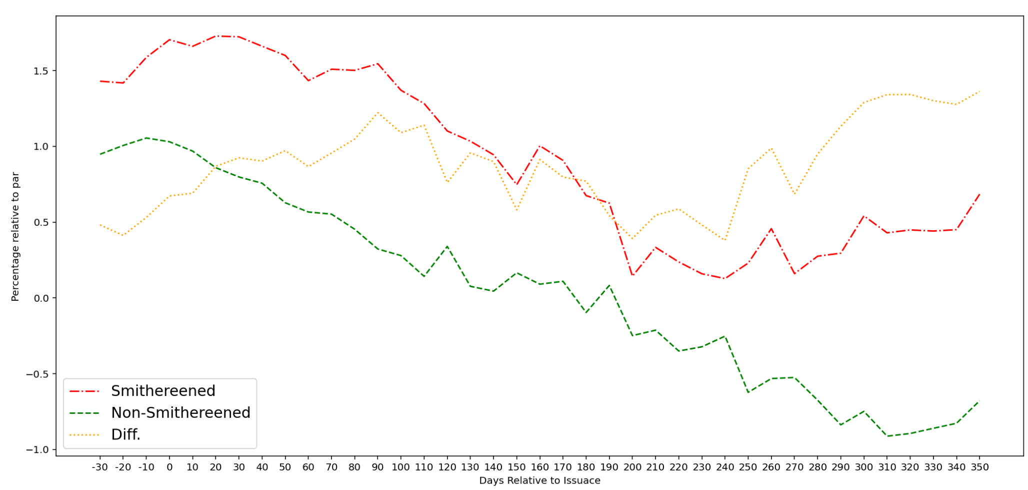
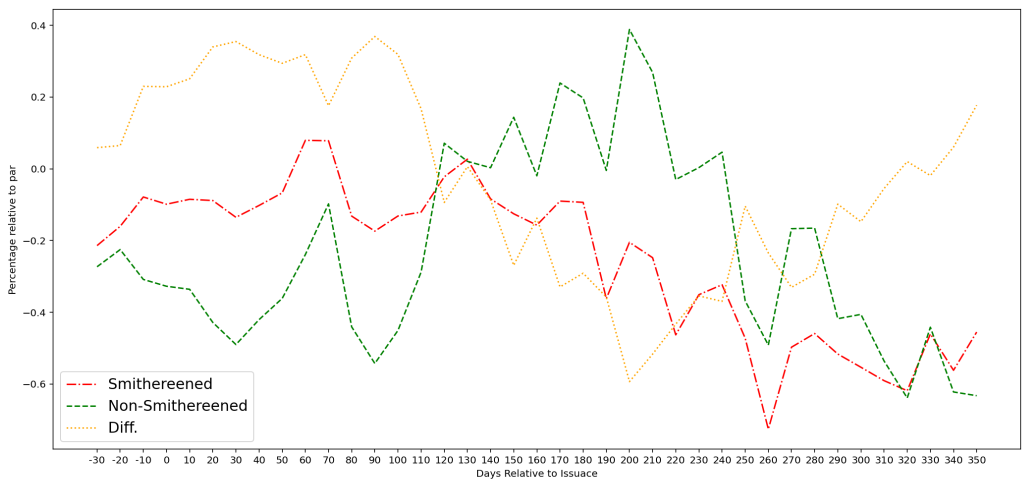


Fig. 2. **Average Abnormal Transaction Mark-ups on Smith. Trades and Bonds.** This figure depicts the average abnormal transaction mark-ups on smithereening trades (Panel A) and smithereened bonds (Panel B) compared to the non-smithereening trades and non-smithereened bonds, respectively. The abnormal mark-ups are defined as the difference between the actual transaction and bond mark-ups and the expected transaction and bond mark-ups, calculated based on the regression models in the rightmost columns of tables 5 and 6, respectively. Within each panel, the red dash-dot line represents the smith. trades or bonds, the green dashed line represents non-smith. trades or bonds, and the yellow dotted line represents the differences between the smith. and non-smith. trades or bonds. The vertical axis shows the total mark-up in percent, while the horizontal line shows the number of days relative to the offering date of the bond.

Panel A. Smithereening vs Non-Smithereening Trades



Panel B. Smithereened vs Non-Smithereened Bonds

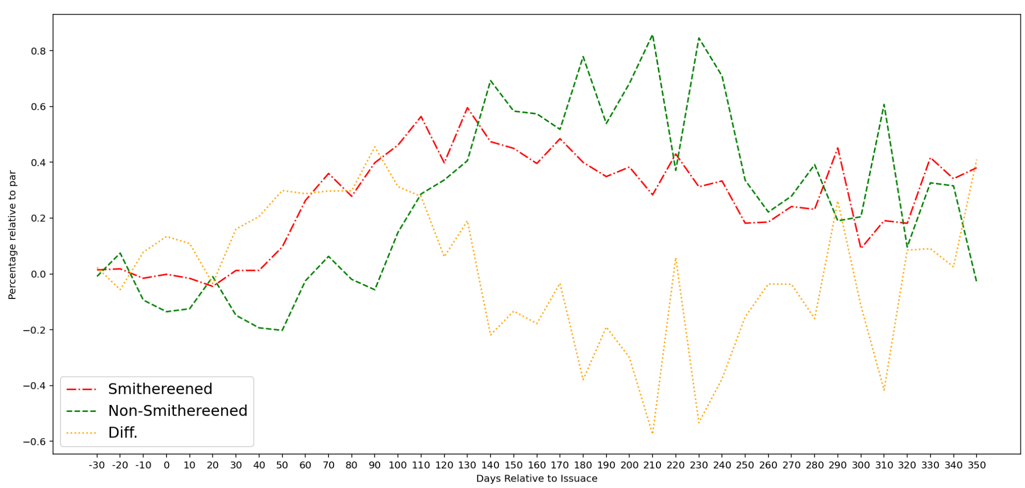
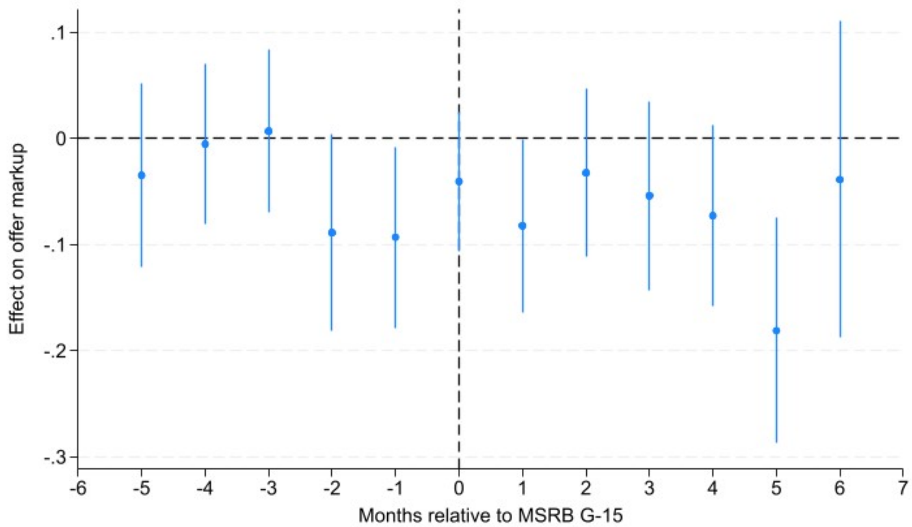


Fig. 3. **Average Effect of the MSRB Rule G-15 Amendment on the Markups of Smith. Trades and Bonds**
This figure depicts the average effect of the enactment of the MSRB rule G-15, requiring the dealers to disclose the prevailing market price starting May 14, 2018, on the markups relative to the offering yield of the smithereening trades (Panel A) and smithereened bonds (Panel B). The Y axis records the aggregate average treatment effect of Rule G-15 for all smithereening trades and smithereened bonds in a given month, and the X axis shows the number of months relative to the enactment of Rule G-15, starting with November 14, 2017, and ending with November 14, 2018. All difference-in-difference tests were implemented with the bond-date fixed effects, while the bond tests used issue-date fixed effects. Both tests also use bond, trade, and dealer controls.

Panel A. Smithereening Trades



Panel B. Smithereened Bonds

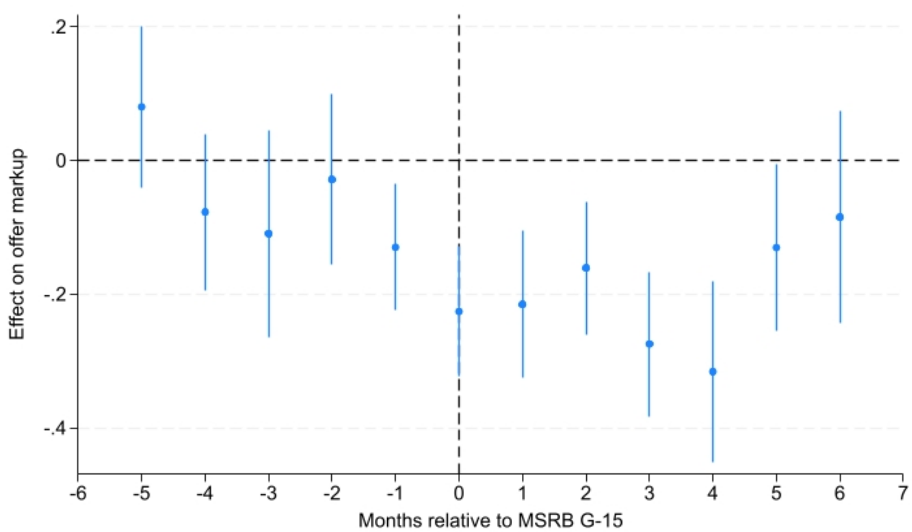


Table 1: Example of smithereening in a new municipal bond issue.
The table reports two original institutional purchases executed on July 23, 2025 and 18 subsequent trades in nine matched pairs on July 24, 2025 for the Peace River Water Supply bond (CUSIP 704612HP8). All trades occurred on a when-issued basis prior to the bond's dated date (August 12, 2025). The bond has a 5% coupon, matures on October 1, 2055, and was issued in a principal amount of $16.22 million. It was reoffered on July 23, 2025 at a price of 97.71 (yield 5.15%) to two institutional accounts ($1.0 million and $15.22 million). On July 24, 2025, the dealer distributed $1.58 million of this position through interdealer purchases at 99 (yield 5.065%) that were immediately matched, at the same timestamp and par amount, to customer sales at 100 (yield 4.999%) in trades of $30,000–$250,000.

Time (hh:mm)	Price (% of par)	Yield (%)	Par amount ($)	Trade type	Markup vs. reoffering (price pts, yield bp)
Original institutional investors (July 23, 2025)					
12:00	97.71	5.15	1,000,000	Customer bought	0.00, 0.0
12:00	97.71	5.15	15,220,000	Customer bought	0.00, 0.0
Smithereening trades (July 24, 2025)					
15:08	99.00	5.065	30,000	Inter-dealer trade	+1.29, − 8.5
15:08	100.00	4.999	30,000	Customer bought	+2.29, − 15.1
15:09	99.00	5.065	50,000	Inter-dealer trade	+1.29, − 8.5
15:09	100.00	4.999	50,000	Customer bought	+2.29, − 15.1
15:10	99.00	5.065	250,000	Inter-dealer trade	+1.29, − 8.5
15:10	100.00	4.999	250,000	Customer bought	+2.29, − 15.1
15:11	99.00	5.065	250,000	Inter-dealer trade	+1.29, − 8.5
15:11	100.00	4.999	250,000	Customer bought	+2.29, − 15.1
15:11	99.00	5.065	250,000	Inter-dealer trade	+1.29, − 8.5
15:11	100.00	4.999	250,000	Customer bought	+2.29, − 15.1
15:11	99.00	5.065	250,000	Inter-dealer trade	+1.29, − 8.5
15:11	100.00	4.999	250,000	Customer bought	+2.29, − 15.1
15:12	99.00	5.065	250,000	Inter-dealer trade	+1.29, − 8.5
15:12	100.00	4.999	250,000	Customer bought	+2.29, − 15.1
15:19	99.00	5.065	50,000	Inter-dealer trade	+1.29, − 8.5
15:19	100.00	4.999	50,000	Customer bought	+2.29, − 15.1
15:44	99.00	5.065	200,000	Inter-dealer trade	+1.29, − 8.5
15:44	100.00	4.999	200,000	Customer bought	+2.29, − 15.1

Table 2: Incidence and Timing of Smithereening
This table presents univariate sample statistics outlining the total number of trades, the incidence of exact smithereening trades, the total par traded, the share of par associated with smithereened bonds, the total number of bonds traded, and the share of traded bonds that have smithereening trades. Panel A shows the univariate results based on the number of days relative to the date of bond issuance, Panel B shows exposure to smithereened bonds by trade-size bucket over the first 60 trading days since issuance, and Panel C shows the univariate results based on bond characteristics over the first 60 trading days since issuance. Among the characteristics, 'Long-dated' denotes original maturity $\geq$ 15 years. 'ATS' indicates trades executed on Alternative Trading Systems. The sample used consists of all dealer sale trades to customers from 2014 to 2018.

Panel A: By Days Relative to Issuance

	Trades		*Par*		*Bonds*	
Days	# (M)	% Smithereened	$ (M)	% Smithereened	# (k)	% Smithereened
-30–20	0.44	6.65	41,384.58	6.73	100.47	16.85
-20–10	0.91	6.79	88,711.19	6.70	194.64	19.25
-10-0	1.10	7.60	93,631.01	6.72	178.60	28.40
0-10	0.65	8.97	55,219.84	8.87	124.54	35.99
10-20	0.42	11.56	29,998.81	12.94	90.92	36.51
20-30	0.32	12.11	25,593.57	13.68	72.55	37.17
30-40	0.20	11.33	16,650.14	12.26	51.58	33.97
40-50	0.19	10.99	16,884.66	12.90	47.03	33.81
50-60	0.12	10.48	12,134.69	12.35	35.83	32.13
60-90	0.28	10.17	22,069.14	12.94	62.86	33.14
90-180	0.55	10.44	30,962.01	14.07	107.74	33.52
180-360	0.92	10.80	38,036.83	15.43	164.13	36.08

Panel B: By Trade Par Size Bucket (First 60 Days After Issuance)

	Trades		*Par*		*Bonds*	
Par Bucket ($k)	# (M)	% in Smith Bonds	$ (M)	% in Smith Bonds	# (k)	% Smithereened
<25	0.53	66.23	633.04	54.24	44.40	53.98
25-100	0.83	47.56	3,408.41	50.91	78.50	53.10
100-250	0.25	26.54	5,507.62	28.24	37.81	31.18
250-1,000	0.11	10.78	14,243.18	10.60	31.67	11.44
>1,000	0.05	6.12	65,941.22	8.59	15.65	9.80

Panel C: By Bond Characteristics (First 60 Days After Issuance)

	Trades		*Par*		*Bonds*	
Characteristic	# (M)	% Smithereened	$ (M)	% Smithereened	# (k)	% Smithereened
Discount	0.87	30.92	5,248.68	33.97	49.55	60.27
Premium	0.76	9.04	67,844.60	12.02	138.57	33.36
Long-Dated	0.99	15.72	21,748.09	17.66	53.35	56.33
Short-dated	0.03	3.49	20,222.39	3.41	10.92	15.76
ATS Trades	1.01	13.95	24,132.11	20.34	85.28	57.90

Continued on next page

Table 2 (continued)

	Trades		*Par*		*Bonds*	
Days / Category	# (M)	% Smithereened	$ (M)	% Smithereened	# (k)	% Smithereened
Non-ATS Trades	0.75	8.71	65,601.37	9.00	122.75	27.06
Large Issuer	1.01	10.73	55,267.53	12.63	55.48	45.93
Small Issuer	0.07	4.75	11,186.66	3.96	31.52	30.15
Callable	1.46	14.31	42,786.92	16.21	119.66	48.41
Not Callable	0.30	6.64	46,946.56	8.25	88.38	27.92
Bank Qualified	0.14	9.47	10,022.12	8.40	50.87	26.03
Not Bank Qualified	1.63	11.40	79,711.36	12.51	157.17	44.13
Competitive Issuance	1.08	10.79	55,880.27	11.64	135.06	39.25
Negotiated Issuance	0.68	12.57	30,465.44	14.07	71.96	40.98
Taxable	0.07	10.25	10,210.59	11.88	12.02	30.65
Not Taxable	1.72	11.28	81,793.82	12.00	198.23	40.24
Uses Advisor	1.48	11.68	70,858.82	13.64	176.05	40.59
No Advisor	0.28	9.11	18,874.66	6.08	31.98	34.83

Table 3: Smith Trade Mark-ups

This table presents transaction mark-ups for smithereening and non-smithereening trades. The average mark-ups are calculated relative to the previous transaction (dealer yield) and relative to the offering yield. Panel A shows the univariate results based on the number of days relative to the date of bond issuance, panel B shows the results based on the trade size bucket over the first 60 trading days since the issuance. Mark-ups (MU) are reported as percent of par value, so differences are in percentage points.

Panel A: By Days Relative to Issuance

	Relative to Dealer Yield			*Relative to Offer Yield*		
Days	Mean MU_{Smith}	Mean MU_{Non}	Diff.	Mean MU_{Smith}	Mean MU_{Non}	Diff.
-30–20	1.07	1.13	-0.05	1.43	1.20	0.23
-20–10	1.09	1.23	-0.14	1.42	1.25	0.17
-10-0	1.18	1.21	-0.04	1.59	1.30	0.29
0-10	1.19	1.18	0.01	1.57	1.29	0.29
10-20	1.20	1.16	0.04	1.47	1.18	0.29
20-30	1.22	1.15	0.08	1.48	1.08	0.40
30-40	1.22	1.09	0.13	1.43	1.00	0.43
40-50	1.21	1.08	0.13	1.37	0.98	0.39
50-60	1.19	1.08	0.11	1.33	0.93	0.40
60-90	1.16	1.07	0.09	1.09	0.84	0.25
90-180	1.08	0.97	0.11	0.57	0.54	0.03
180-360	0.97	0.93	0.04	-0.28	-0.22	-0.06

Panel B: By Trade Par Size Bucket (First 60 Days After Issuance)

	Relative to Dealer Yield			*Relative to Offer Yield*		
Par Bucket ($ k)	Mean MU_{Smith}	Mean MU_{Non}	Diff.	Mean MU_{Smith}	Mean MU_{Non}	Diff.
<25	1.25	1.53	-0.28	1.49	1.42	0.07
25-100	1.25	1.38	-0.13	1.55	1.39	0.16
100-250	1.08	0.96	0.12	1.36	0.90	0.46
250-1,000	0.80	0.64	0.16	1.08	0.63	0.46
>1,000	0.15	0.24	-0.09	0.73	0.60	0.13

Table 4: Smith Bond Mark-ups

This table presents the two-sample comparison for the transaction mark-ups for bonds that have smithereening trades and bonds that do not have smithereening trades. The average mark-ups are calculated relative to the previous transaction (dealer yield) and relative to the offering yield. Panel A shows the univariate results based on the number of days relative to the date of bond issuance, panel B shows the results based on the trade size bucket over the first 60 trading days since the issuance. Mark-ups (MU) are reported as percent of par value, so differences are in percentage points.

Panel A: By Days Relative to Issuance

	Relative to Dealer Yield			*Relative to Offer Yield*		
Days	Mean MU_{Smith}	Mean MU_{Non}	Diff.	Mean MU_{Smith}	Mean MU_{Non}	Diff.
-30–20	1.15	0.95	0.20	1.43	0.95	0.48
-20–10	1.18	1.06	0.12	1.42	1.01	0.41
-10-0	1.25	1.07	0.18	1.59	1.06	0.53
0-10	1.30	1.04	0.26	1.70	1.03	0.67
10-20	1.34	1.05	0.28	1.66	0.97	0.69
20-30	1.35	1.03	0.32	1.73	0.86	0.87
30-40	1.34	0.99	0.36	1.72	0.80	0.92
40-50	1.33	0.97	0.36	1.66	0.76	0.90
50-60	1.32	0.95	0.37	1.60	0.63	0.97
60-90	1.32	0.95	0.37	1.46	0.53	0.93
90-180	1.26	0.85	0.41	1.14	0.18	0.96
180-360	1.19	0.83	0.36	0.38	-0.54	0.92

Panel B: By Trade Par Size Bucket (First 60 Days After Issuance)

	Relative to Dealer Yield			*Relative to Offer Yield*		
Par Bucket ($ k)	Mean MU_{Smith}	Mean MU_{Non}	Diff.	Mean MU_{Smith}	Mean MU_{Non}	Diff.
<25	1.41	1.45	-0.04	1.77	1.13	0.64
25-100	1.38	1.28	0.10	1.79	1.14	0.64
100-250	1.17	0.86	0.31	1.54	0.69	0.84
250-1,000	0.82	0.64	0.18	1.12	0.58	0.54
>1,000	0.28	0.25	0.03	0.68	0.56	0.13

Table 5: Offering Markup on Smith Trade Regressions

This table reports regressions of bond trade markups relative to the offering price on *Smith Trade*, a dummy equal to one when the trade is a smithereening trade. The sample is the first 60 days of trading after a bond's offering date. t-statistics are reported in parentheses and are calculated using standard errors clustered by trade date. Statistical significance is indicated as follows: * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

	(1) Offer Markup	(2) Offer Markup	(3) Offer Markup	(4) Offer Markup	(5) Offer Markup	(6) Offer Markup	(7) Offer Markup	(8) Offer Markup
Smith Trade	0.149***	0.092***	0.050***	0.029***	0.025***	0.006	-0.004	-0.029***
	(17.86)	(6.53)	(5.73)	(4.06)	(3.98)	(1.07)	(-0.47)	(-5.52)
1[Par $0–24,999]		1.310***	1.171***	1.084***	1.054***	1.123***	1.090***	0.972***
		(19.21)	(56.93)	(60.14)	(67.99)	(57.98)	(18.76)	(43.73)
1[Par $25k–99,999]		1.246***	1.187***	1.076***	1.041***	1.085***	1.067***	0.937***
		(21.46)	(60.74)	(62.10)	(68.37)	(56.66)	(17.80)	(42.25)
1[Par $100k–249,999]		0.921***	0.958***	0.858***	0.826***	0.894***	0.866***	0.786***
		(20.12)	(48.19)	(48.97)	(54.17)	(46.37)	(14.23)	(35.55)
1[Par $250k–999,999]		0.408***	0.572***	0.492***	0.471***	0.552***	0.524***	0.531***
		(15.13)	(27.18)	(26.53)	(28.80)	(27.79)	(10.25)	(23.74)
Dealer inventory		-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
		(-0.43)	(-0.21)	(-0.30)	(-0.59)	(-0.21)	(-0.13)	(-0.09)
Dealer Centrality		-1.924***	-1.223***	-1.114***	-1.098***	-1.163***	-1.088***	-1.015***
		(-8.70)	(-15.03)	(-15.26)	(-17.06)	(-17.01)	(-9.42)	(-14.60)
Dealer Reciprocity		0.600***	0.271***	0.211***	0.210***	0.243***	0.165***	0.215***
		(8.03)	(10.14)	(9.82)	(11.22)	(12.51)	(5.60)	(11.57)
Dealer market share (National)		7.526***	5.419***	6.098***	5.896***	5.426***	5.640***	3.932***
		(14.08)	(14.93)	(19.94)	(22.54)	(19.81)	(16.21)	(13.78)
Dealer market share (State)		1.446***	1.202***	1.259***	1.236***	1.335***	1.060***	1.474***
		(6.79)	(6.08)	(7.57)	(8.57)	(8.33)	(11.33)	(9.23)
Odd Lot		-1.722***	-0.562	0.435	0.503	-0.551**	-0.105**	-0.049*
		(-3.70)	(-1.12)	(0.69)	(0.82)	(-2.40)	(-2.57)	(-1.69)
log(Maturity)			0.621***	0.614***	0.698***	0.774***		
			(25.44)	(27.85)	(31.42)	(31.34)		
1[General obligation]			-0.086***	-0.050*	-0.038	0.111*		
			(-6.22)	(-1.79)	(-0.90)	(1.69)		
1[Callable]			0.332***	0.403***	0.334***	0.280***		
			(19.79)	(26.07)	(23.43)	(14.08)		
1[Sinking fund]			0.200***	0.105***	0.045*	-0.065		
			(15.73)	(6.12)	(1.77)	(-1.39)		
1[Bank qualified]			-0.237***	-0.285***	-0.216***	-0.354		
			(-13.74)	(-9.46)	(-3.88)	(-1.08)		
1[Taxable]			0.613***	0.336***	0.395***	0.408***		
			(20.76)	(10.31)	(10.14)	(5.82)		
1[ATS]			0.112***	0.111***	0.075***	0.093***		
			(5.27)	(6.10)	(4.99)	(5.14)		
log(Issue Amount)			0.078***	0.022***	-0.024***	-0.094***		
			(16.84)	(3.68)	(-4.30)	(-12.59)		
Observations	651,267	481,091	478,013	476,873	474,389	352,126	438,956	301,554
R^2	0.33	0.34	0.42	0.61	0.74	0.86	0.87	0.93
Trade Date FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Issuer FE	No	No	No	Yes	No	No	No	No
Issuance FE	No	No	No	No	Yes	No	No	No
Issuance-Date FE	No	No	No	No	No	Yes	No	No
Bond FE	No	No	No	No	No	No	Yes	No
Bond-Date FE	No	No	No	No	No	No	No	Yes

Table 6: Offering Markup on Smith Bond Regressions

This table reports regressions of bond trade markups relative to the offering price on *Smith Bond*, a dummy equal to one for bonds that have smithereened trades. The sample is the first 60 days of trading after a bond's offering date. t-statistics are reported in parentheses and are calculated using standard errors clustered by trade date. Statistical significance is indicated as follows: * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

	(1) Offer Markup	(2) Offer Markup	(3) Offer Markup	(4) Offer Markup	(5) Offer Markup	(6) Offer Markup
Smith Bond	0.607***	0.547***	0.251***	0.258***	0.244***	0.230***
	(50.80)	(44.18)	(23.75)	(25.99)	(28.30)	(20.96)
1[Par $0–24,999]		1.086***	1.109***	1.043***	1.025***	1.093***
		(51.06)	(53.72)	(57.31)	(66.35)	(56.67)
1[Par $25k–99,999]		1.067***	1.132***	1.038***	1.014***	1.057***
		(52.43)	(57.73)	(59.50)	(66.91)	(55.49)
1[Par $100k–249,999]		0.809***	0.915***	0.827***	0.805***	0.870***
		(39.36)	(45.86)	(46.88)	(52.88)	(45.27)
1[Par $250k–999,999]		0.385***	0.547***	0.473***	0.458***	0.537***
		(17.54)	(26.05)	(25.53)	(28.05)	(27.10)
Dealer inventory		-0.000	-0.000	-0.000	-0.000	-0.000
		(-0.14)	(-0.13)	(-0.19)	(-0.51)	(-0.15)
Dealer Centrality		-1.642***	-1.318***	-1.154***	-1.138***	-1.170***
		(-21.06)	(-17.15)	(-16.72)	(-18.64)	(-18.16)
Dealer Reciprocity		0.475***	0.281***	0.211***	0.213***	0.239***
		(17.09)	(10.90)	(10.13)	(11.76)	(12.49)
Dealer market share (National)		6.713***	5.806***	6.289***	6.065***	5.454***
		(17.92)	(16.19)	(20.98)	(23.98)	(20.80)
Dealer market share (State)		1.448***	1.206***	1.253***	1.227***	1.339***
		(6.91)	(6.12)	(7.54)	(8.49)	(8.32)
Odd Lot		-1.065**	-0.552	0.462	0.500	-0.492**
		(-2.27)	(-1.11)	(0.74)	(0.82)	(-2.49)
log(Maturity)			0.595***	0.577***	0.660***	0.734***
			(24.28)	(25.71)	(29.29)	(29.90)
1[General obligation]			-0.085***	-0.041	-0.022	0.124*
			(-6.18)	(-1.47)	(-0.51)	(1.92)
1[Callable]			0.312***	0.390***	0.328***	0.275***
			(18.52)	(25.23)	(22.96)	(13.89)
1[Sinking fund]			0.201***	0.098***	0.035	-0.062
			(15.87)	(5.80)	(1.38)	(-1.36)
1[Bank qualified]			-0.226***	-0.271***	-0.201***	-0.356
			(-13.23)	(-9.03)	(-3.65)	(-1.09)
1[Taxable]			0.638***	0.358***	0.419***	0.430***
			(21.52)	(11.02)	(10.80)	(6.15)
1[ATS]			0.084***	0.091***	0.056***	0.078***
			(3.97)	(5.03)	(3.83)	(4.35)
log(Issue Amount)			0.059***	0.009	-0.034***	-0.103***
			(12.70)	(1.47)	(-6.07)	(-13.77)
Observations	651,267	481,091	478,013	476,873	474,389	352,126
R^2	0.35	0.38	0.42	0.61	0.74	0.86
Trade Date FE	Yes	Yes	Yes	Yes	Yes	Yes
Rating FE	Yes	Yes	Yes	Yes	Yes	Yes
Issuer FE	No	No	No	Yes	No	No
Issuance FE	No	No	No	No	Yes	No
Issuance-Date FE	No	No	No	No	No	Yes

Table 7: Offering Markups on Smith Bond Conditional on Trade Size
This table reports regressions of bond trade markups relative to the offering price on *Smith Bond*, a dummy equal to one for bonds that have smithereened trades, and interactions between *Smith Bond* and trade-size buckets. The omitted trade-size category is trades of at least \$1 million. The sample is the first 60 days of trading after a bond's offering date. t-statistics are reported in parentheses and are calculated using standard errors clustered by trade date. Statistical significance is indicated as follows: * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

	(1) Offer Markup	(2) Offer Markup	(3) Offer Markup	(4) Offer Markup	(5) Offer Markup	(6) Offer Markup
Smith Bond	0.113***	0.119***	-0.151***	-0.072**	-0.111***	-0.104***
	(3.61)	(3.34)	(-4.17)	(-2.27)	(-3.97)	(-2.98)
1[Par \$0–24,999]	0.738***	0.900***	0.909***	0.880***	0.855***	0.913***
	(32.20)	(34.87)	(36.22)	(38.14)	(43.76)	(35.35)
1[Par \$25k–99,999]	0.827***	0.919***	0.988***	0.918***	0.877***	0.891***
	(39.06)	(37.82)	(42.33)	(42.26)	(46.87)	(35.39)
1[Par \$100k–249,999]	0.556***	0.633***	0.781***	0.708***	0.668***	0.706***
	(25.84)	(25.40)	(32.47)	(32.51)	(35.42)	(27.58)
1[Par \$250k–999,999]	0.181***	0.262***	0.456***	0.390***	0.358***	0.418***
	(8.24)	(10.14)	(18.60)	(17.75)	(18.19)	(15.69)
Smith Bond × 1[Par \$0–24,999]	0.475***	0.478***	0.486***	0.394***	0.408***	0.365***
	(14.25)	(12.68)	(12.61)	(11.53)	(14.33)	(10.22)
Smith Bond × 1[Par \$25k–99,999]	0.422***	0.418***	0.398***	0.327***	0.357***	0.345***
	(13.20)	(11.44)	(10.65)	(9.88)	(12.95)	(9.84)
Smith Bond × 1[Par \$100k–249,999]	0.483***	0.470***	0.377***	0.325***	0.357***	0.343***
	(14.79)	(12.57)	(9.87)	(9.66)	(12.52)	(9.73)
Smith Bond × 1[Par \$250k–999,999]	0.385***	0.343***	0.255***	0.233***	0.267***	0.259***
	(10.90)	(8.51)	(6.27)	(6.54)	(8.82)	(6.88)
Observations	651,267	481,091	478,013	476,873	474,389	352,126
R^2	0.36	0.38	0.43	0.61	0.74	0.86
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Trade Date FE	Yes	Yes	Yes	Yes	Yes	Yes
Rating FE	Yes	Yes	Yes	Yes	Yes	Yes
Issuer FE	No	No	No	Yes	No	No
Issuance FE	No	No	No	No	Yes	No
Issuance-Date FE	No	No	No	No	No	Yes

Table 8: Price and Yield Rounding Regressions

This table reports regressions of four indicator variables for price and yield rounding, *coarse price*, *fine price*, *coarse yield*, and *fine yield*, on *Smith Bond*, a dummy that equals one for bonds that have smithereened trades. Coarse prices and yields are defined as quarter and odd-eighth price or percentage-point ticks, while fine prices (yields) are non-quarter exact-penny (basis-point) prices (yields). Following Griffin, Hirschey, and Kruger (2021), these rounding patterns are informative about whether dealers use salient grid points in strategic pricing. All specifications include the same controls as Table 6, column 6. The sample is the first 60 days of trading after a bond's offering date. t-statistics are reported in parentheses and are calculated using standard errors clustered by trade date. Statistical significance is indicated as follows: * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

	(1) Coarse Price	(2) Fine Price	(3) Coarse Yield	(4) Fine Yield
Smith Bond	0.044***	0.018***	0.003	-0.007*
	(8.43)	(6.29)	(0.71)	(-1.77)
Observations	887,533	887,533	887,533	887,533
R^2	0.34	0.19	0.32	0.39
Controls	Yes	Yes	Yes	Yes
Trade Date FE	Yes	Yes	Yes	Yes
Rating FE	Yes	Yes	Yes	Yes
Issuance-Date FE	Yes	Yes	Yes	Yes

Table 9: Heterogeneity in Offering Markups by Bond and Dealer Characteristics

This table reports regressions of secondary-market trade markups relative to the offering price on *Smith Bond*, an indicator equal to one for bonds that ever experience a smithereening trade. Each specification interacts *Smith Bond* with a characteristic that proxies for the bond's retail orientation: premium bond indicator, issue amount (quintile 5 versus 1), negotiated indicator, dealer market share (quintile 5 versus 1), and ATS indicator. All regressions include the full set of trade-, dealer-, and bond-level controls, as well as trade-date, issuance-date, and rating fixed effects. t-statistics are reported in parentheses and are calculated using standard errors clustered by trade date. Statistical significance is indicated as follows: * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

	(1) Offer Markup	(2) Offer Markup	(3) Offer Markup	(4) Offer Markup	(5) Offer Markup
Smith Bond	0.114***	0.141**	0.213***	0.275***	0.180***
	(7.40)	(2.45)	(15.78)	(11.99)	(11.73)
Premium (vs discount)					
Premium	-0.404***				
	(-21.12)				
Premium × Smith Bond	0.082***				
	(4.01)				
Issue size (Q5 vs Q1)					
Issue size Q5		0.463***			
		(4.16)			
Issue size Q5 × Smith Bond		0.137**			
		(2.30)			
Negotiated indicator					
Negotiated			0.372***		
			(2.70)		
Negotiated × Smith Bond			0.047**		
			(2.08)		
Dealer market share (Q5 vs Q1)					
Dealer Mkt Share Q5				0.536***	
				(11.84)	
Dealer Mkt Share Q5 × Smith Bond				-0.072***	
				(-3.21)	
ATS indicator					
1[ATS]					0.039**
					(1.96)
1[ATS] × Smith Bond					0.074***
					(3.87)
Observations	327,822	229,513	352,126	141,571	352,126
R^2	0.86	0.87	0.86	0.90	0.86
Controls	Yes	Yes	Yes	Yes	Yes
Trade-date FE	Yes	Yes	Yes	Yes	Yes
Rating FE	Yes	Yes	Yes	Yes	Yes
Issuance-date FE	Yes	Yes	Yes	Yes	Yes

Table 10: Effect of 2018 Amendment to MSRB Rule G-15 on Markups of Smithereening Trades and Smithereened Bonds.

This table reports difference-in-differences estimates around the MSRB Rule G-15 markup disclosure amendment, effective May 14, 2018. Panel A treats *Smith Trade* customer transactions as treated observations; Panel B treats trades in *Smith Bond* issues as treated observations. The dependent variable is the markup relative to the offering price. Trade-level regressions include trade-date fixed effects in column (2) and bond-date fixed effects in column (3). Bond-level regressions include trade-date fixed effects in column (2) and trade-date plus issuance fixed effects in column (3). All specifications include bond, trade, and dealer controls. The sample is the first 60 days of trading after a bond's offering date and is restricted to November 14, 2017 through November 14, 2018. t-statistics are reported in parentheses and are calculated using standard errors clustered by trade date. Statistical significance is indicated as follows: * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

Panel A: Smithereening Trades

	(1) Offer Markup	(2) Offer Markup	(3) Offer Markup
Smith Trade	0.265***	0.274***	0.022*
	(12.56)	(16.93)	(1.67)
Post G-15	-0.071		
	(-0.76)		
Smith Trade × Post G-15	-0.113***	-0.111***	-0.045**
	(-3.90)	(-4.85)	(-2.41)
Observations	134,929	134,929	66,408
R^2	0.12	0.31	0.90
Controls	Yes	Yes	Yes
Trade Date FE	No	Yes	No
Bond-date FE	No	No	Yes

Panel B: Smithereened Bonds

	(1) Offer Markup	(2) Offer Markup	(3) Offer Markup
Smith Bond	0.533***	0.412***	0.347***
	(17.81)	(15.99)	(18.37)
Post G-15	0.068		
	(0.78)		
Smith Bond × Post G-15	-0.332***	-0.229***	-0.085***
	(-8.95)	(-6.83)	(-3.47)
Observations	134,929	134,929	133,271
R^2	0.13	0.32	0.70
Controls	Yes	Yes	Yes
Trade Date FE	No	Yes	Yes
Issuance FE	No	No	Yes

Table A1: Descriptive Statistics for Bonds and Trades
Our regression sample consists of all dealer sale trades to customers from 2014 to 2018, for trades up to 60 days after the bond issuance. This table reports descriptive statistics for the bonds associated with these trades (Panel A) and the trades themselves (Panel B). We define a smithereening trade as a dealer sale to a customer which occurs at the identical timestamp as an interdealer trade with the same par value within the same bond.

Variable	Mean	St. Dev.	p25	p50	p75
Bond-Level					
Par Amount ($ M)	5.40	31.80	0.39	1.00	3.20
Maturity (years)	11.12	6.83	6.00	10.00	16.00
Coupon (%)	3.64	1.10	3.00	3.56	5.00
Callable (=1)	0.58	0.49	0.00	1.00	1.00
Discount Bond (=1)	0.24	0.43	0.00	0.00	0.00
Premium Bond (=1)	0.67	0.47	0.00	1.00	1.00
Large Issue (=1)	0.27	0.44	0.00	0.00	1.00
Small Issue (=1)	0.15	0.36	0.00	0.00	0.00
Callable (=1)	0.58	0.49	0.00	1.00	1.00
Bank Qualified (=1)	0.24	0.43	0.00	0.00	0.00
Competitive Issue (=1)	0.65	0.48	0.00	1.00	1.00
Negotiated Issue (=1)	0.35	0.48	0.00	0.00	1.00
Taxable (=1)	0.05	0.21	0.00	0.00	0.00
Uses Advisor (=1)	0.85	0.36	1.00	1.00	1.00
Trade-Level					
Trade Price	104.41	7.76	99.99	101.43	107.69
Mark-up (% Offer)	1.41	2.21	0.12	1.44	2.72
Mark-up (% Dealer)	1.19	0.85	0.24	1.29	2.00
Trade Size ($k)	192.04	1444.37	20.00	30.00	75.00
ATS Execution(=1)	0.57	0.49	0.00	1.00	1.00
Days Since Issue	19.98	16.34	6.00	15.00	31.00