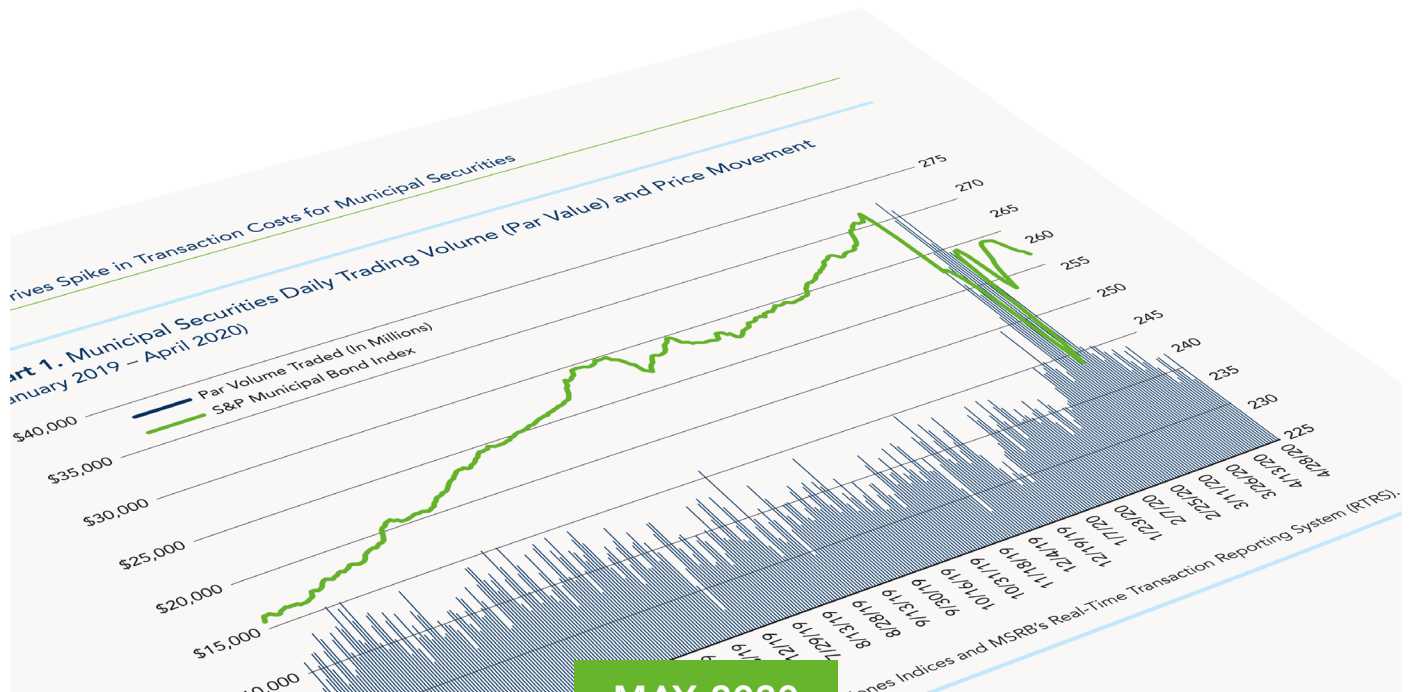




Municipal Securities Rulemaking Board



MAY 2020

# COVID-19 Crisis Drives Spike in Transaction Costs for Municipal Securities

Background, Data and Methodology

Unlike the capital market, the municipal securities market largely functions as an over-the-counter marketplace, where investors place orders with dealers directly or through intermediaries. Dealers either execute orders by committing dealer capital (paying the dealer a mark-up) or a commission to facilitate transaction and bearing principal risk.<sup>8</sup> Contributing factors to search cost for individual investors include securities liquidity, volatility, and dealer-customer bargaining power as a result of information asymmetry.

<sup>8</sup> See Wu, Simon Z., "Transaction costs for Customer Trades in the Municipal Securities Market: Evidence from the Municipal Securities Rulemaking Board's Real-Time Transaction Reporting System (RTTS)", [Files/Resources/Transaction-Costs-for-Customer-Trades](#).

<sup>9</sup> See Cuny, Christine, "When Knowledge Is Power: Evidence on the Role of Intermediation and Costs of Trading in an Opaque Market," *Journal of Accounting and Economics*, August 4, 2017; Green, Richard, "Search Costs and Market Power: Evidence from the Municipal Securities Market," *Journal of Finance*, Volume 61, 2006. "Search cost" is defined as the cost to trade, while "information opacity" refers to the investor's bargaining power with dealers.

## Introduction<sup>1</sup>

The COVID-19 pandemic and the large-scale economic shutdown exerted unprecedented sharp and swift downward pressure on world-wide financial asset pricing, causing widespread market turbulence in the spring of 2020. Barely one month after reaching an all-time high on February 19, 2020, the S&P 500 Index declined nearly 34% from its peak. Likewise, market volatility affected the fixed-income markets. On March 25, 2020, the yield on one-month and three-month Treasury bills turned negative concurrently,<sup>2</sup> while rating downgrades spiked up in the corporate bond market.<sup>3</sup> In the usually placid municipal securities market, bond prices fluctuated wildly and daily trading volume more than doubled from average levels during the two-week period from March 11 through March 26, as illustrated in Chart 1.<sup>4</sup> The S&P Municipal Bond Index, designed to measure the entire fixed-rate tax-free municipal bond market,<sup>5</sup> had been increasing until March 9, 2020 when it closed at 270.79. The index then reversed course, falling sharply over the next two weeks down to 242.31 on March 23, 2020, the lowest point since December 2018, erasing approximately 15 months of growth in 14 days.

As the pandemic sparked an economic and financial crisis, the MSRB actively monitored the evolving situation in trading costs for investors buying and selling municipal bonds during the market stress period. This market commentary analyzes the costs for dealer-to-customer trades for this period, extending previous MSRB research conducted in 2018, “Transaction Costs for Customer Trades in the Municipal Bond Market: What is Driving the Decline?” (“2018 MSRB Research Paper”),<sup>6</sup> and in 2019, “Mark-up Disclosure and Trading in the Municipal Bond Market” (“2019 MSRB Research Paper”).<sup>7</sup>

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<sup>1</sup> The views expressed in this commentary are those of the author and do not necessarily reflect the views and positions of the MSRB.

<sup>2</sup> Sarah Hansen, “Negative Rates Have Arrived. Here’s What That Means for Investors,” *Forbes*, March 25, 2020. <https://www.forbes.com/sites/sarahhansen/2020/03/25/negative-rates-have-arrived-heres-what-that-means-for-investors/#2bb274ab2403>.

<sup>3</sup> Sebastian Pellejero, “Corporate Bond Downgrades Grow as Coronavirus Spreads,” *Wall Street Journal*, April 2, 2020. <https://www.wsj.com/articles/corporate-bond-downgrades-grow-as-coronavirus-spreads-11585849497>.

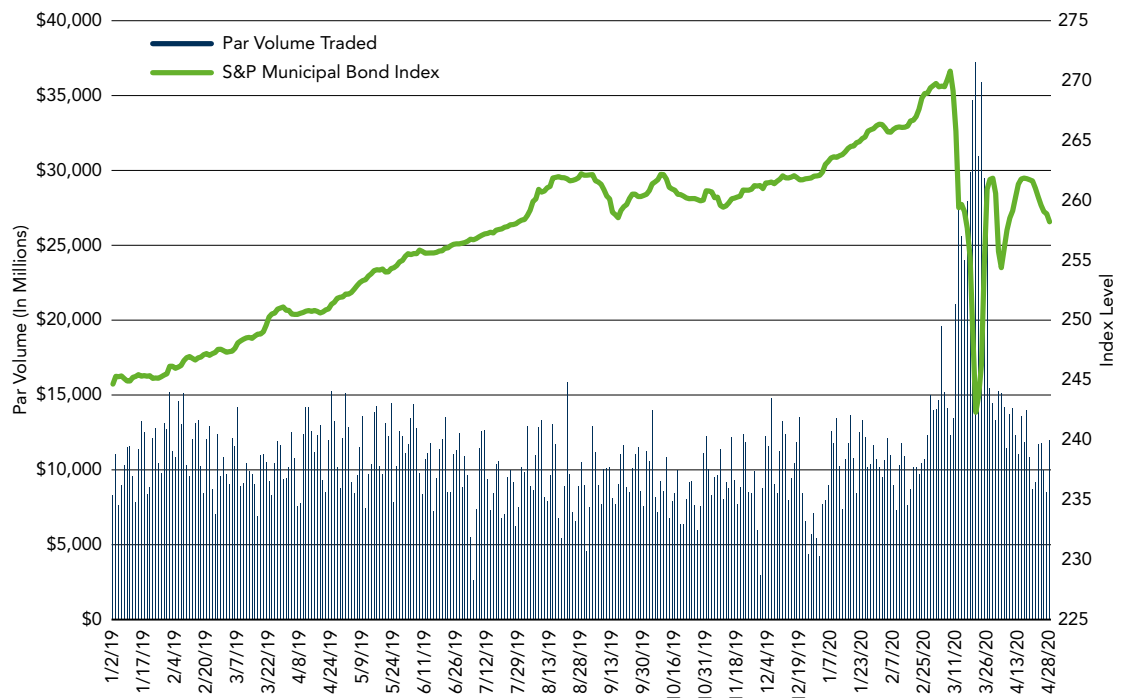
<sup>4</sup> Also refer to the MSRB Municipal Market Trading Report (Updated Daily). See <http://msrb.org/News-and-Events/COVID-19-Information.aspx>.

<sup>5</sup> The index includes municipal bonds of all qualities—from AAA to non-rated, excluding defaulted bonds—and from all sectors of the municipal bond market. It also includes bonds subject to the alternative minimum tax (AMT). See <https://us.spindices.com/indices/fixed-income/sp-municipal-bond-index>.

<sup>6</sup> See Wu, Simon Z., “Transaction costs for Customer Trades in the Municipal Bond Market: What is Driving the Decline?” Research Paper, Municipal Securities Rulemaking Board, July 17, 2018. <http://www.msrb.org/~media/Files/Resources/Transaction-Costs-for-Customer-Trades-in-the-Municipal-Bond-Market.ashx>.

<sup>7</sup> See Wu, Simon Z. and Marcelo Vieira, “Mark-up Disclosure and Trading in the Municipal Bond Market,” Research Paper, Municipal Securities Rulemaking Board, July 2019. <http://www.msrb.org/~media/Files/Resources/Mark-Up-Disclosure-and-Trading.ashx?la=en>.

**Chart 1. Municipal Securities Daily Trading Volume (Par Value) and Price Movement (January 2019 – April 2020)**



Source: MSRB analysis with data obtained from S&P Dow Jones Indices and MSRB’s Real-Time Transaction Reporting System (RTRS).

## Background, Data and Methodology

Unlike the equity market, where trading activity is primarily facilitated by a national exchange, the municipal securities market largely functions as an over-the-counter marketplace, where investors place their orders with dealers directly without a centralized facility. Dealers either execute orders by committing dealer capital (principal trades) or by searching for an intermediary in the market to facilitate transactions. The investors then pay the dealer a mark-up or a commission to compensate for services and/or for taking on and bearing principal risk.<sup>8</sup> Contributing factors to transaction costs generally include characteristics of individual securities, liquidity, volatility, counterparty search cost and dealer-customer bargaining power as a result of information opacity,<sup>9</sup> as well as other macro-environment factors. To quantify the transaction costs paid by investors to execute

<sup>8</sup> See Wu, Simon Z., “Transaction costs for Customer Trades in the Municipal Bond Market: What is Driving the Decline?” Research Paper, Municipal Securities Rulemaking Board, July 17, 2018. <http://www.msrb.org/~media/Files/Resources/Transaction-Costs-for-Customer-Trades-in-the-Municipal-Bond-Market.ashx>.

<sup>9</sup> See Cuny, Christine, “When Knowledge Is Power: Evidence from the Municipal Bond Market,” *Journal of Accounting and Economics*, August 4, 2017; Green, Richard, Burton Hollifield and Norman Schürhoff, “Financial Intermediation and Costs of Trading in an Opaque Market,” *Review of Financial Studies*, Volume 20, 2007; and Harris, Larry and Michael Piwovar, “Secondary Trading Costs in the Municipal Bond Market,” *Journal of Finance*, Volume 61, 2006. “Search cost” is defined as the cost investors and dealers incur when seeking a counterparty to trade, while “information opacity” refers to the cost of gathering fundamental information that affects an investor’s bargaining power with dealers.

their trades, financial economists and market participants use spread as a common measure, which could be based on pre-trade quote data (bid-ask spread) or actual trade data (effective spread).<sup>10</sup>

Similar to previous MSRB staff research papers, since pre-trade quote data are not universally available or nationally consolidated for municipal securities, effective spread was used to compute transaction costs for this analysis.<sup>11</sup> In addition, we selected January 2016 as the starting point of the analysis to capture the effective spread trend prior to the COVID-19 crisis. For more background information on the municipal bond market or a detailed description of effective spread and transaction costs, please refer to the 2018 MSRB Research Report.<sup>12</sup>

## Summary of Findings

Chart 2 shows the monthly average effective spread for all municipal securities between January 2016 and April 2020. The effective spread for municipal securities trended consistently downward, as found in previous MSRB research papers, and the downward trend continued until March 2020 when it drastically reversed, coinciding with market volatility. When measured as a percentage of mid-point customer trade price, the effective spread steadily declined from around 95 basis points in early 2016 to below 55 basis points in February 2020, but rebounded to 97 basis points in March 2020 before dropping to 88 basis points in April 2020. To put it another way, the sharp increase in effective spread during the COVID-19 crisis (March and April 2020) wiped out nearly the entire reduction in effective spread realized over the preceding four-year period.

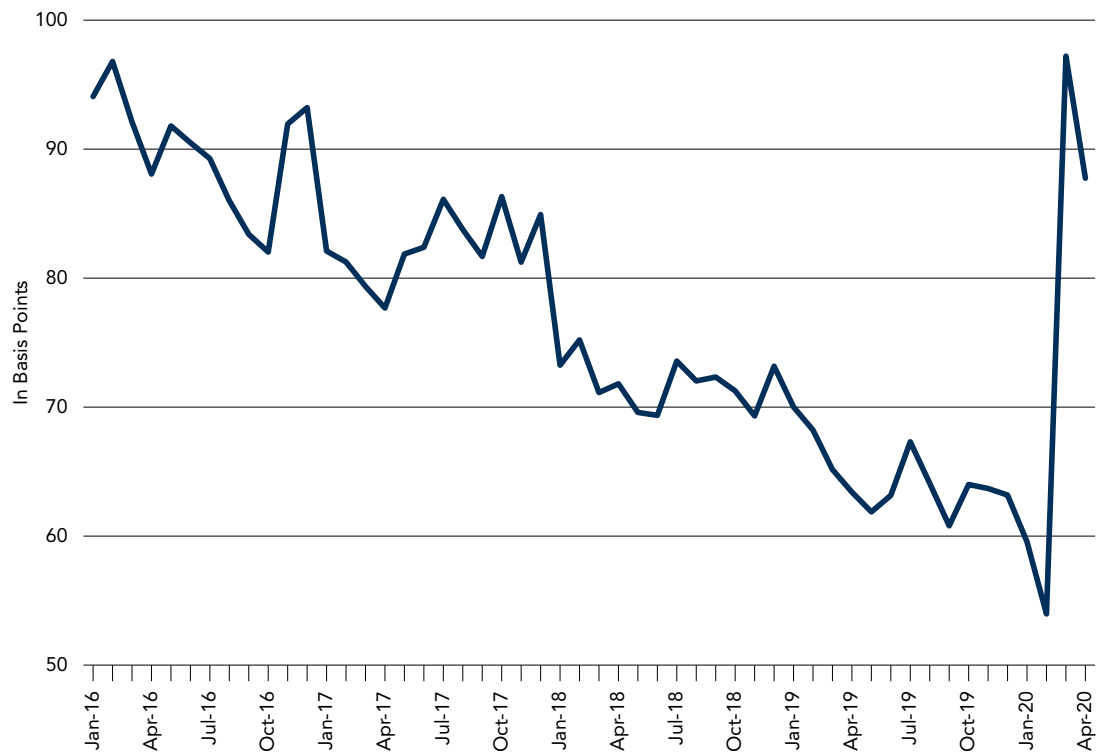
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<sup>10</sup> In the municipal bond market, actual transaction costs incurred by investors can also include brokers' commissions for a small percentage of agency-based trades. MSRB's RTRS converts the commission amount to the same units as dollar price and computes and disseminates a net dollar transaction price to customers inclusive of commission amount. See "Specifications for Real-Time Reporting of Municipal Securities Transactions," Version 4.0, October 2019. <http://www.msrb.org/msrb1/RTRS/RTRS-Specifications.pdf>.

<sup>11</sup> Effective spreads are computed daily for each bond as the difference between the volume-weighted average dealer-to-customer buy and sell price, and then averaged across bonds using equal weighting. Therefore, for each trading day, each security must have at least one customer purchase and one customer sell to be eligible for the analysis. In addition, variable-rate municipal securities were excluded in this analysis, as they are typically traded by sophisticated institutional investors with no mark-up.

<sup>12</sup> See <http://www.msrb.org/~media/Files/Resources/Transaction-Costs-for-Customer-Trades-in-the-Municipal-Bond-Market.ashx>.

**Chart 2. Effective Spread for Fixed-Rate Municipal Securities Customer Trades As a Percentage of Mid-Point Customer Trade Price (January 2016–April 2020)**

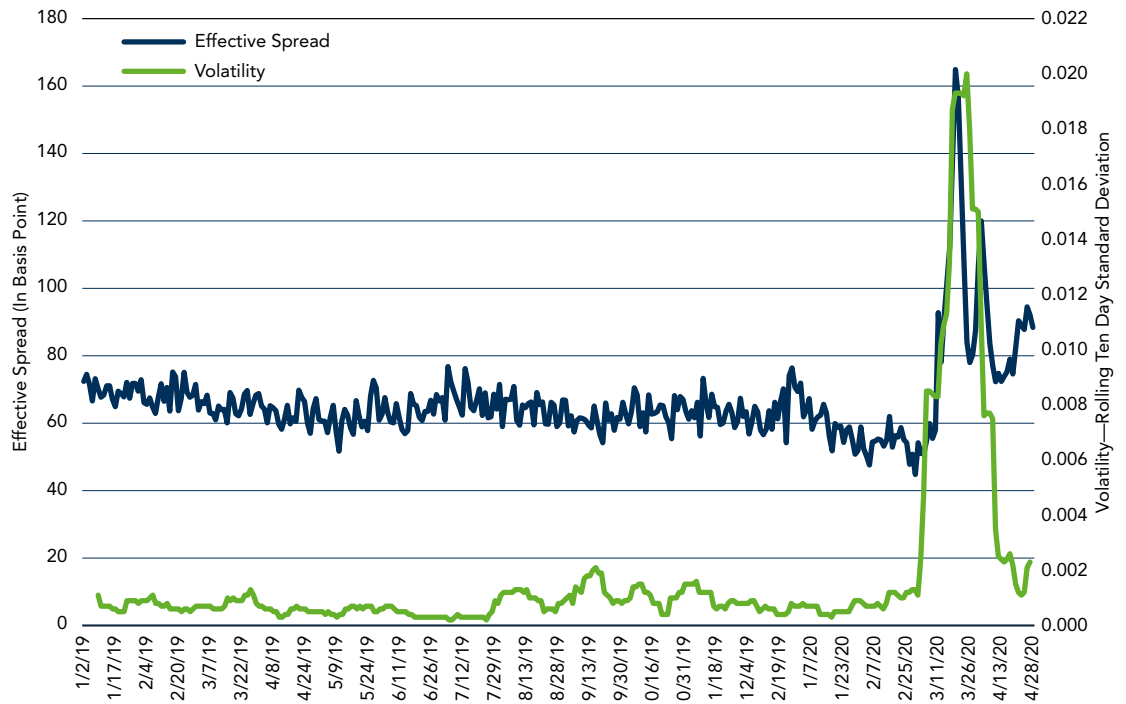


Source: MSRB analysis with data obtained from MSRB's RTRS.

When isolating the change in effective spread to the four-month period in 2020, Chart 3 shows that on certain trading days in mid-March and early April, the effective spread for fixed-rate municipal securities exceeded 100 basis points, with a peak of 165 basis points on March 20. Fluctuations in effective spread seemed to be correlated with the overall volatility of municipal securities price movements, as measured by the rolling 10-day standard deviation of the S&P Municipal Bond Index daily percentage change during the period.<sup>13</sup> The volatility measure typically represents the level of risk and uncertainty in the marketplace, and data show it was significantly elevated in the one-month period between early March and early April.

<sup>13</sup> The volatility itself was likely driven by other market factors, such as the liquidity crunch and uncertainty of pricing due to the potential elevated credit risks and other factors.

**Chart 3. Effective Spread for Fixed-Rate Municipal Securities Customer Trades and Municipal Securities Price Volatility**  
(January 2019 – April 2020)

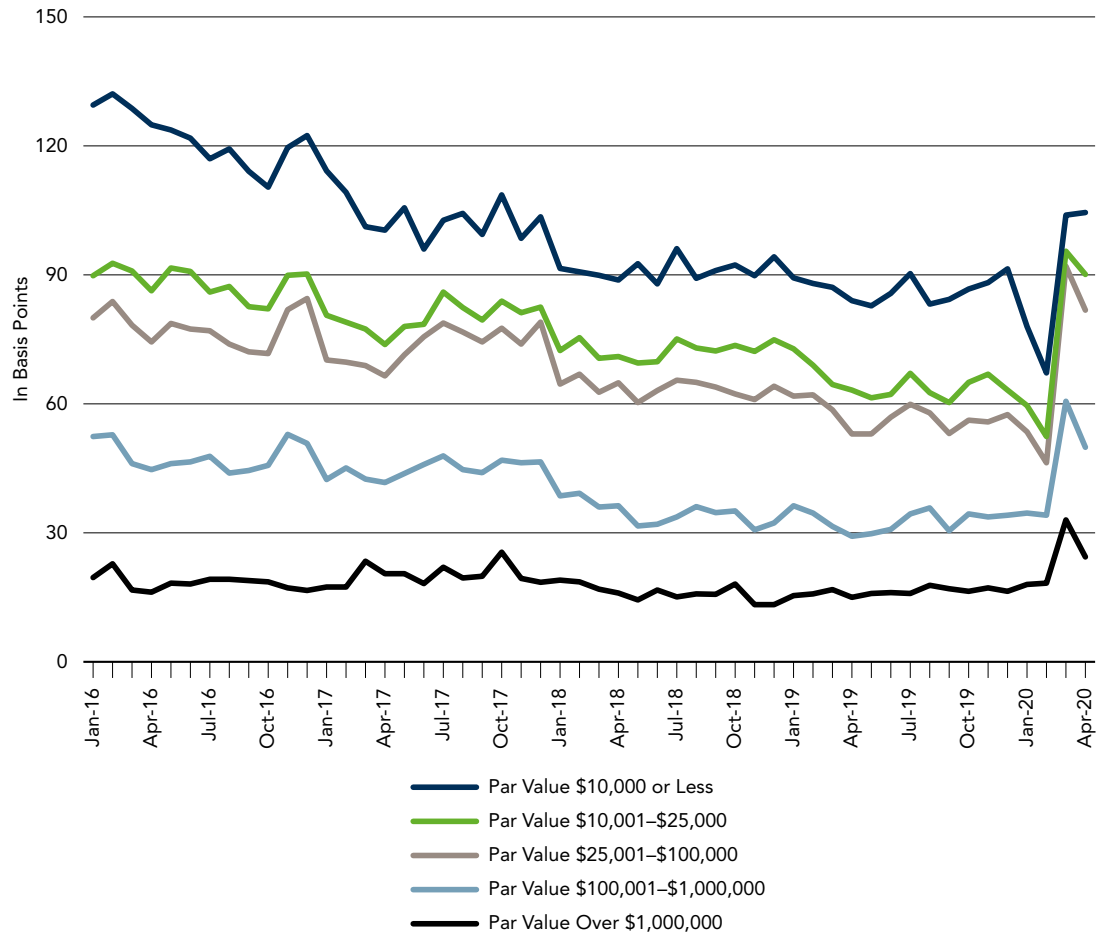


Source: MSRB analysis with data obtained from S&P Dow Jones Indices and MSRB's RTRS.

Next, we examined the effective spread for municipal securities by different trade size groups. Chart 4 shows that, despite narrowing the gap, smaller-sized customer trades continued to be executed with a higher effective spread than larger-sized customer trades as of early 2020. That said, the sharp increase in effective spread triggered by the COVID-19 pandemic was apparent for all trade size groups, including the below \$100,000 trade size groups where retail investors usually predominate. Table 1 illustrates that, to a varying degree, there was a significant rise in effective spread for all five trade size groups, with the percentage increase ranging from 55% to 99% in March 2020 and four out of the five trade size groups experiencing at least a 78% increase. Furthermore, by the end of April 2020, the effective spread had not returned to the pre-COVID-19 level for any of the trade size groups, though it appears that the larger the trade size group, the more the effective spread had declined from the March peak, as seen in Table 1.

**Chart 4. Effective Spread for Fixed-Rate Municipal Securities Customer Trades—  
By Trade Size**

As a Percentage of Mid-Point Customer Trade Price (January 2016 – April 2020)



Source: MSRB analysis with data obtained from MSRB's RTRS.

**Table 1. Monthly Percentage Change in Effective Spread  
(February 2020 – April 2020)**

Comparison Period	Par Value \$10,000 or Less	Par Value \$10,001–\$25,000	Par Value \$25,001–\$100,000	Par Value \$100,001–\$1,000,000	Par Value Over \$1,000,000
Mar vs. Feb	54.6%	82.2%	98.9%	77.9%	79.7%
Apr vs. Mar	0.5%	-5.6%	-11.1%	-17.6%	-26.1%

Source: MSRB analysis with data obtained from MSRB's RTRS.

## Conclusion

The increase in effective spread as a result of the COVID-19 crisis was significant, though not unexpected given the severe market volatility, the liquidity crunch in fixed-income markets and the uncertainty surrounding financial asset pricing in general. However, the speed and magnitude of the increase was still surprising. The question now facing investors and market participants is how likely and quickly effective spreads might revert to pre-crisis levels, particularly for trades under \$100,000 par value indicative of “mom-and-pop” retail investors. The answer may depend on the market assessment of various risk factors in upcoming months, including general market risk, credit risk of municipal issuers and liquidity risk of the municipal securities market. Market challenges still exist, and the MSRB will continue to monitor and evaluate movement of transaction costs in the municipal securities market as well as other takeaways from this unforeseen national and global event.

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The Municipal Securities Rulemaking Board (MSRB) protects investors, state and local governments and other municipal entities and the public interest by promoting a fair and efficient municipal securities market. The MSRB fulfills this mission by regulating the municipal securities firms, banks and municipal advisors that engage in municipal securities and advisory activities. To further protect market participants, the MSRB provides market transparency through its free Electronic Municipal Market Access (EMMA<sup>®</sup>) website, the official repository for information on virtually all municipal bonds. The MSRB also serves as an objective resource on the municipal market, conducts extensive education and outreach to market stakeholders, and provides market leadership on key issues. The MSRB is a Congressionally created, self-regulatory organization governed by a board of directors that has a majority of public members in addition to representatives of regulated entities. The MSRB is subject to oversight by the Securities and Exchange Commission.



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