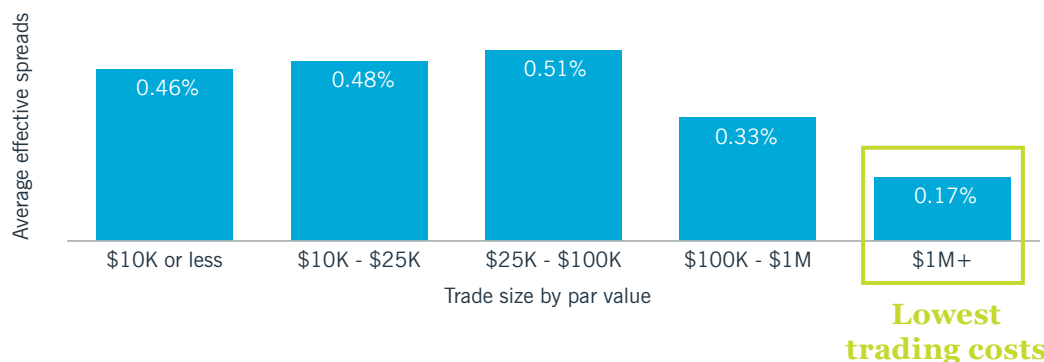


Smaller trades are at a pricing disadvantage

Larger trading blocks enjoy lower trading costs

Average effective spreads for municipal securities trades (01 Jan 2024 - 30 Dec 2024)



The U.S. municipal securities market is an institutionally dominated and negotiated market characterized by inefficient pricing. There is no central location, like a stock exchange where prices can be transparently established. This can make it difficult to obtain the best prices. In general, larger trading blocks incur lower trading costs.

Trading costs vary significantly by transaction size. Trades over \$1 million par value average 0.17% (\$1.70 per \$1,000 par), while trades under \$100,000 cost 0.46% to 0.51% (\$4.60-\$5.10 per \$1,000 par).

Market stress has disproportionately impacted smaller trades. During the pandemic, spreads for trades under \$10,000 nearly doubled (0.67% to 1.04% from February to March 2020), while million dollar plus trades saw smaller increases (0.20% to 0.34%). Similar patterns occurred during 2022's interest rate spike.

Though spreads have narrowed below pre-pandemic levels and compressed over the past decade, the fundamental relationship persists: Larger trades consistently benefit from narrower spreads.

Data source: Municipal Securities Rulemaking Board (MSRB) with data obtained from MSRB's RTRS, August 2025. Most recent data available. Effective spreads are computed daily for each bond as the difference between the volume-weighted average dealer-to-customer buy and sell price, and averaged across bonds using equal weighting. For each trading day, each security must have at least one customer purchase and sale to be eligible for the analysis. In addition, variable-rate municipal securities were excluded, as they are typically traded by sophisticated institutional investors with no markup. For more information on the methodology, please visit [msrb.org](https://www.msrb.org). Copyright © MSRB 2024. All Rights Reserved. The data are provided without representations or warranties and on an "as is" basis. The MSRB hereby disclaims all representations and warranties (express or implied), including, but not limited to, warranties of merchantability, non-infringement and fitness for a particular purpose. Neither the MSRB nor any supplier of data to the MSRB shall in any way be liable to any recipient or user of the data, regardless of the cause or duration, including, but not limited to, any inaccuracies, errors, omissions or other defects in the data or for any damages resulting therefrom. The MSRB has no obligation to update, modify or amend data herein or to provide notice to any person if any is inaccurate or incomplete. Data were prepared for general informational purposes only, and it is not intended to provide, and does not constitute, investment, tax, business, legal or other advice. Provision of the data by the MSRB to a firm, organization or other entity ("Recipient") does not constitute and should not be interpreted as an endorsement of Recipient or Recipient's product or services. The MSRB is not affiliated with, nor does it sponsor, Recipient. The MSRB does not review, approve or have any responsibility for use of the data by Recipient, including, but not limited to, in research or other material or content prepared by or on behalf of Recipient.

Data are based on past performance, which is no guarantee of future results. Other methods may produce different results and the results for the individual portfolios and for different periods may vary. Institutional trade execution applies primarily to municipal bond trading as part of ongoing account management and generally does not include sales of legacy securities contributed to new or existing accounts or in connection with termination and liquidation instructions. See next page for more information.

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- 2

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- 3

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A large presence in the market provides greater access to inventory to find bonds in appropriate sizes and at institutional prices.
- 4

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- 5

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1 Nuveen traces its history to 1898 when the company began underwriting municipal bonds, and TIAA was founded in 1918.

2 As of 30 Jun 2025, Nuveen assets under management (AUM) is inclusive of underlying investment specialists.

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Institutional trade execution applies primarily to municipal bond trading as part of ongoing account management and generally does not include sales of legacy securities contributed to new or existing accounts or in connection with termination and liquidation instructions. Nuveen seeks to expeditiously and efficiently effect sales of legacy securities contributed to new or existing accounts or in connection with termination and liquidation instructions, generally by directing the execution of sale to the relevant broker-dealer/custodian designated by the client's managed account program, subject to program limitations. Primarily due to the time constraints and lot sizes applicable to these transactions, and because the full range of trading techniques is generally not available (including aggregation), the prices received in these transactions may be less favorable than the prices that could be attained for sales of securities selected as part of ongoing management. Clients always reserve the right to fund accounts with cash as opposed to legacy securities and to keep any securities in their accounts upon termination of services.

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