

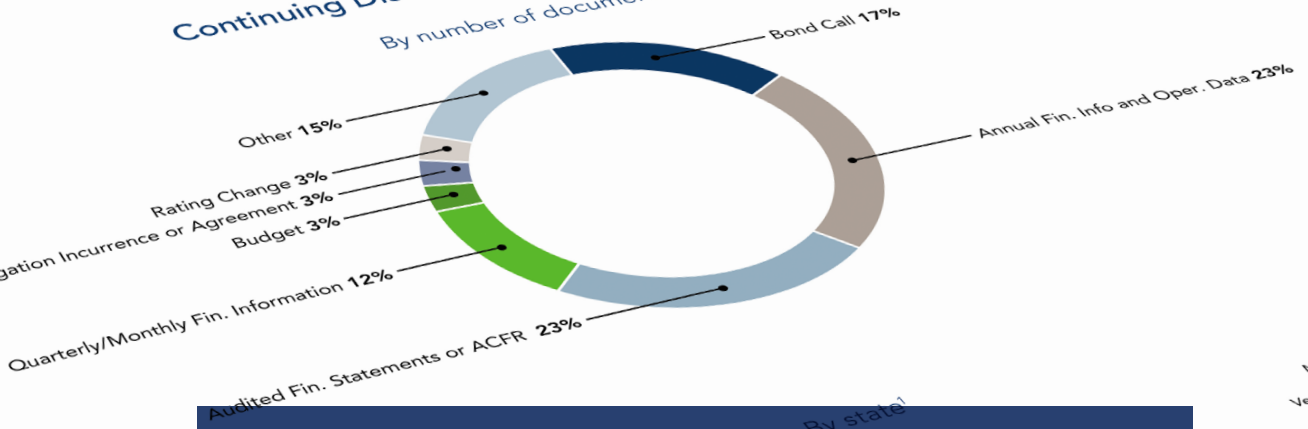


Municipal Securities Rulemaking Board

PAGE 65

### Continuing Disclosures Submissions, 2023

By number of documents



## 2023 FACT BOOK

By state



# About the MSRB Fact Book

As the self-regulatory organization for the municipal securities market, the Municipal Securities Rulemaking Board (MSRB) collects market data and disclosures to support market transparency and the surveillance functions of regulatory enforcement agencies. The MSRB makes its data, documents and related statistics available in multiple formats to facilitate widespread access to and consumption of information that otherwise would not be readily available.

The MSRB's annual *Fact Book* provides comprehensive and historical statistics on municipal market trading patterns, primary market and continuing disclosures in the municipal securities market, and interest rate resets for municipal variable rate securities. Data in the *Fact Book* are based on information submitted to the MSRB by municipal securities dealers, municipal securities issuers and those acting on their behalf.

The MSRB publishes its annual *Fact Book* to provide municipal market participants, policymakers, regulators, academics and others with historical statistics that can be further analyzed to identify market trends and activity. The MSRB also publishes quarterly updates to the *Fact Book* on its website, [msrb.org](https://msrb.org). These and other MSRB statistical reports, and the availability of source data and disclosures, are consistent with the organization's goal to make municipal market data freely available to the public and market participants. The information also supports the MSRB's regulatory activities.

The 2023 *Fact Book* includes monthly, quarterly and yearly aggregate market information from 2019 to 2023, and covers different types of municipal issues, trades and interest rate resets. Information about nearly every trade reported to the MSRB by municipal securities dealers since 2019 is included.<sup>1</sup> The data reflect aggregate trading activity at the end of each trading day as submitted to the MSRB's Real-Time Transaction Reporting System (RTRS). The MSRB obtains some information on the characteristics of securities traded from ICE Data Pricing & Reference Data, LLC and CUSIP databases furnished by CUSIP Global Services.<sup>2</sup>

Definitions for terminology used in the report can be found in the Definition of Terms Used section at the end of the *Fact Book*. For more information on trading, variable rate resets, continuing disclosures and official statements, please visit the MSRB's Electronic Municipal Market Access (EMMA<sup>®</sup>) website at [emma.msrb.org](https://emma.msrb.org).

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<sup>1</sup> As described in a Rule G-14 interpretive notice from January 2, 2008 (Reporting of Transactions in Certain Special Trading Situations), some transactions are subject to special conditions indicating that they are not a typical arms-length transaction and possibly a misleading indicator of the market value of a security. These transactions may be excluded from MSRB's transparency products, including data disseminated through EMMA, but may be included in this report.

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## WHY THE MSRB COLLECTS TRADE DATA AND DISCLOSURE DOCUMENTS

The MSRB Transaction Reporting Program serves two major functions in the municipal securities market—price transparency and market surveillance. The implementation of RTRS in January 2005 created “real-time” transaction price transparency. Although the most visible part of the MSRB’s transaction reporting program is the transparency function, another important function is the information and support the program provides to enforcement agencies charged with enforcing MSRB rules.

MSRB rules, specifically Rule G-14, require dealers to submit to the MSRB transaction data on all municipal securities trades with customers and with other dealers within 15 minutes of the time of trade, with limited exceptions. Transaction prices are electronically disseminated immediately after transaction data is received by the MSRB and automated error checking is completed. This system effectively provides “real-time” reporting of transaction prices in the municipal securities market.

The RTRS feed disseminates transaction data to information vendors and to the MSRB’s EMMA website, in real-time, as transactions are reported by dealers. The EMMA website receives and disseminates RTRS data in real-time and allows a user to search historical trade data.

The EMMA website provides, at no charge, real-time access to primary market and continuing disclosure documents, as well as documents related to variable rate security liquidity provisions and auction procedures. EMMA’s database contains primary market documents including official statements and advanced refunding documents since 1990. EMMA’s database also contains continuing disclosure documents produced in connection with municipal securities since July 1, 2009, based on EMMA’s designation by the Securities and Exchange Commission as the official repository for continuing disclosure on that date.

The compilation of data in this *Fact Book* represents what the MSRB believes to be an accurate and meaningful presentation of municipal market information. This digital publication is available on the MSRB’s website.

## ABOUT THE MSRB

The Municipal Securities Rulemaking Board (MSRB) protects and strengthens the municipal bond market, enabling access to capital, economic growth, and societal progress in tens of thousands of communities across the country. The MSRB fulfills this mission by creating trust in our market through informed regulation of dealers and municipal advisors that protects investors, issuers and the public interest; building technology systems that power our market and provide transparency for issuers, institutions, and the investing public; and serving as the steward of market data that empowers better decisions and fuels innovation for the future. The MSRB is a 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 overseen by the Securities and Exchange Commission and Congress.

## ABOUT EMMA

The MSRB’s EMMA website, [emma.msrb.org](https://emma.msrb.org), is designated by the U. S. Securities and Exchange Commission as the official source for municipal securities data and disclosure documents. The website provides free public access to objective municipal market information and interactive tools for investors, municipal entities and others. EMMA supports municipal market transparency but is not a platform for buying or selling bonds.

EMMA houses municipal disclosure documents including offering documents, called official statements, for most new offerings of municipal bonds, notes, 529 plans and other municipal securities issued since 1990. EMMA also provides access to advance refunding documents, which detail arrangements made when new bonds are issued to establish escrows to pay off existing bonds (usually to refinance their debt at a lower interest rate). Ongoing disclosures about municipal bonds throughout the life of the bonds also are available on EMMA. These continuing disclosures, which include annual financial statements and

notices of material events, reflect the financial or operating condition of the issuer and events that can affect the ability of an issuer to repay its bonds and the value of the bond, among other things. Current municipal securities credit ratings from Kroll Bond Ratings, Fitch Ratings, Moody's Investors Service and Standard & Poor's also are provided on EMMA.

EMMA disseminates market transparency data, which includes real-time prices and yields at which bonds and notes are bought and sold, for most trades occurring on or after January 31, 2005. Interest rates for municipal securities, including those for auction rate securities and variable rate demand obligations, are available on EMMA as well. A market statistics section on EMMA provides a summary of municipal securities transaction activity since 2006.

EMMA is a service of the MSRB.

RESEARCH AVAILABLE FROM THE MSRB



## The MSRB's 2023 Year-in-Review report reveals:

- Significant yield volatility throughout the year
- Record trade count in 2023, breaking the record set in 2022
- Strong demand from individual investors, but limited demand from institutions
- Muted new issue volume

**To learn more, read the [report](#)**  
**Or listen to the latest [MSRB Podcast](#)**

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# Contents

**PART ONE: Municipal Market Trade Summary, 2019–2023**

Total Par Amount Traded . . . . . 7

Total Number of Trades . . . . . 8

**PART TWO: Municipal Market Trade Distribution Trends, 2023**

Par Amount Traded by Time of Day . . . . . 10

Number of Trades by Time of Day . . . . . 11

Average Daily Trade Size by Time of Day . . . . . 12

Average Trading Volume by Day of Week . . . . . 13

Par Amount Traded by Months After Sale Date . . . . . 14

Number of Trades by Months After Sale Date . . . . . 15

Distribution of Trades by Type After Sale Date . . . . . 16

Average Trade Size by Months After Sale Date—All trades . . . . . 17

**PART THREE: Most Actively Traded Municipal Securities, 2023**

Top 50 Most Active Securities by Par Amount . . . . . 19

Top 50 Most Active Securities by Number of Trades . . . . . 20

Top 50 Most Active Fixed Rate Securities by Par Amount . . . . . 21

Top 50 Most Active Fixed Rate Securities by Number of Trades . . . . . 22

Top 50 Most Active Variable Rate Securities by Par Amount . . . . . 23

Top 50 Most Active Variable Rate Securities by Number of Trades . . . . . 24

Top 50 Most Active Short-Term Securities by Par Amount . . . . . 25

Top 50 Most Active Short-Term Securities by Number of Trades . . . . . 26

Top 50 Most Active Long-Term Securities by Par Amount . . . . . 27

Top 50 Most Active Long-Term Securities by Number of Trades . . . . . 28

**PART FOUR: Dealer Activity and Distribution of Municipal Trades, 2019–2023**

Number of MSRB Registered Dealers . . . . . 30

Distribution of Customer Trades by Number of Dealers Based on Par Amount . . . . . 31

Distribution of Customer Trades by Number of Dealers Based on Number of Trades . . . . . 32

**PART FIVE: Overall Municipal Market Trading Activity, 2019–2023**

Average Daily Trading Volume by Par Amount, Number of Trades and Number of Unique Securities . . . . . 34

Daily Trading Volume, 30-Day Trailing Average by Trade Type . . . . . 35

Average Daily Par Amount by Trade Type and Size . . . . . 36

Average Daily Number of Trades by Trade Type and Size . . . . . 37

Average Daily Number of Unique Securities by Trade Type and Size . . . . . 38

Average Daily Trade Size by Customer Trade . . . . . 39

**PART SIX: Municipal Fixed Rate Securities—Par Amount Traded and Number of Trades, 2019–2023**

Summary—Average Daily Par Amount . . . . . 41

Summary—Average Daily Number of Trades . . . . . 42

Source of Repayment and Trade Size—Average Daily Par Amount and Number of Trades . . . . . 43

Tax Status and Trade Size—Average Daily Par Amount and Number of Trades . . . . . 44

Sector—Average Daily Par Amount and Number of Trades . . . . . 45

Remaining Maturity—Average Daily Par Amount and Number of Trades . . . . . 46

**PART SEVEN: Municipal Variable Rate Securities—Par Amount Traded and Number of Trades, 2019–2023**

Summary—Average Daily Par Amount . . . . . 48

Summary—Average Daily Number of Trades . . . . . 49

Variable Rate Demand Obligations Trade Type and Size—Average Daily Par Amount . . . . . 50

Variable Rate Demand Obligations Trade Type and Size—Average Daily Number of Trades . . . . . 51

Auction Rate Securities Trade Type and Size—Average Daily Par Amount . . . . . 52

Auction Rate Securities Trade Type and Size—Average Daily Number of Trades . . . . . 53

**PART EIGHT: Yield Distributions, 2019–2023**

Average Daily Yields of Tax Exempt Fixed Rate Securities by Customer Trade and Size . . . . . 55

Daily Yields of Tax Exempt Fixed Rate Securities, 30-Day Trailing Average . . . . . 56

**PART NINE: Municipal Market Variable Securities Rate Resets, 2019–2023**

Variable Rate Demand Obligations Rate Resets . . . . . 58

Variable Rate Demand Obligations Rate Resets by Period . . . . . 59

Auction Rate Securities Rate Resets . . . . . 60

Auction Rate Securities Rate Resets by Type . . . . . 61

Auction Rate Securities Rate Resets by Period . . . . . 62

**PART TEN: Municipal Market Disclosures, 2019–2023**

Primary Market Submissions . . . . . 64

Continuing Disclosure Submissions by Type and State . . . . . 65

Annual Continuing Disclosure Submissions . . . . . 66

Total Financial Disclosures . . . . . 67

Financial Disclosures, Audit Financial Statements or ACFR Submissions . . . . . 67

Financial Disclosures, Annual Financial Information & Operating Data Submissions . . . . . 68

Financial Disclosures, Quarterly/Monthly Financial Information Submissions . . . . . 68

Financial Disclosures, Other . . . . . 69

Total Event Disclosures . . . . . 70

Event Disclosures, Bond Call Submissions . . . . . 70

Event Disclosures, Rating Change Submissions . . . . . 71

Event Disclosures, Defeasance . . . . . 71

Event Disclosures, Other . . . . . 72

**PART ELEVEN: Definitions of Terms Used**

Definitions . . . . . 74

# Part One

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## Municipal Market Trade Summary, 2019–2023

## Transaction Summary

Total par amount traded in \$ millions

	2019	2020	2021	2022	2023
<b>Total</b>	<b>3,014,104</b>	<b>3,139,655</b>	<b>2,259,105</b>	<b>3,633,317</b>	<b>3,357,993</b>
<b>By Trade Type</b>					
Customer Bought	1,547,610	1,656,201	1,232,274	1,813,577	1,717,891
Customer Sold	945,111	994,602	621,565	1,223,928	1,056,430
Inter-Dealer	521,383	488,852	405,265	595,811	583,673
<b>By Coupon Type</b>					
Fixed Rate	1,797,962	1,971,761	1,562,622	2,486,348	2,209,106
Variable	955,384	881,015	466,944	813,915	797,334
Zero Coupon	71,142	106,282	73,176	91,427	57,036
Other <sup>1</sup>	189,616	180,598	156,362	241,626	294,517
<b>By Source of Repayment</b>					
General Obligation	773,360	797,448	605,326	875,404	847,190
Revenue	2,016,916	2,102,690	1,567,123	2,620,603	2,362,989
Double Barrel	64,169	69,536	55,968	84,954	80,381
Other <sup>1</sup>	159,660	169,980	30,688	52,356	67,434
<b>By Tax Status</b>					
Tax Exempt	2,480,940	2,520,388	1,738,644	3,023,876	2,852,051
Taxable	289,093	441,882	392,096	349,476	268,454
AMT	178,164	146,894	114,177	206,848	170,315
Other <sup>1</sup>	65,908	30,491	14,188	53,118	67,174

<sup>1</sup> Includes municipal commercial paper and issues that could not be categorized based on available data.



## Transaction Summary

Total number of trades

	2019	2020	2021	2022	2023
<b>Total</b>	<b>8,753,702</b>	<b>8,501,457</b>	<b>7,647,333</b>	<b>12,698,872</b>	<b>13,119,310</b>
<b>By Trade Type</b>					
Customer Bought	3,327,806	3,153,011	2,744,256	4,607,039	4,785,398
Customer Sold	2,045,963	2,171,562	2,125,218	3,234,025	3,316,917
Inter-Dealer	3,379,933	3,176,884	2,777,859	4,857,808	5,016,995
<b>By Coupon Type</b>					
Fixed Rate	8,135,966	7,979,207	7,304,116	12,268,362	12,671,601
Variable	316,264	279,181	147,603	230,809	237,050
Zero Coupon	276,991	223,749	178,953	182,395	190,506
Other <sup>1</sup>	24,481	19,320	16,661	17,306	20,153
<b>By Source of Repayment</b>					
General Obligation	3,304,017	3,031,125	2,874,398	4,695,438	4,995,112
Revenue	5,159,263	5,185,055	4,507,712	7,546,521	7,618,961
Double Barrel	271,265	267,725	260,598	453,096	501,510
Other <sup>1</sup>	19,157	17,552	4,623	3,817	3,727
<b>By Tax Status</b>					
Tax Exempt	8,008,023	7,695,493	6,914,058	11,793,028	12,186,872
Taxable	615,982	676,248	634,098	672,558	683,768
AMT	120,378	124,809	96,049	229,454	244,970
Other <sup>1</sup>	9,319	4,907	3,128	3,832	3,700

### DATA AVAILABLE FROM THE MSRB

## Receive Municipal Market Data in Real Time

The MSRB offers subscriptions to two feeds of market data:\*

- **MSRB Transaction Subscription Service:** All municipal trade data reported to the MSRB by municipal securities dealers.
- **MSRB Short-term Obligation Subscription Service:** All variable rate securities data and documents.

\*This information is also available at no charge on the [EMMA@ website](mailto:EMMA@msrb.com).

<sup>1</sup> Includes issues that could not be categorized based on available data.

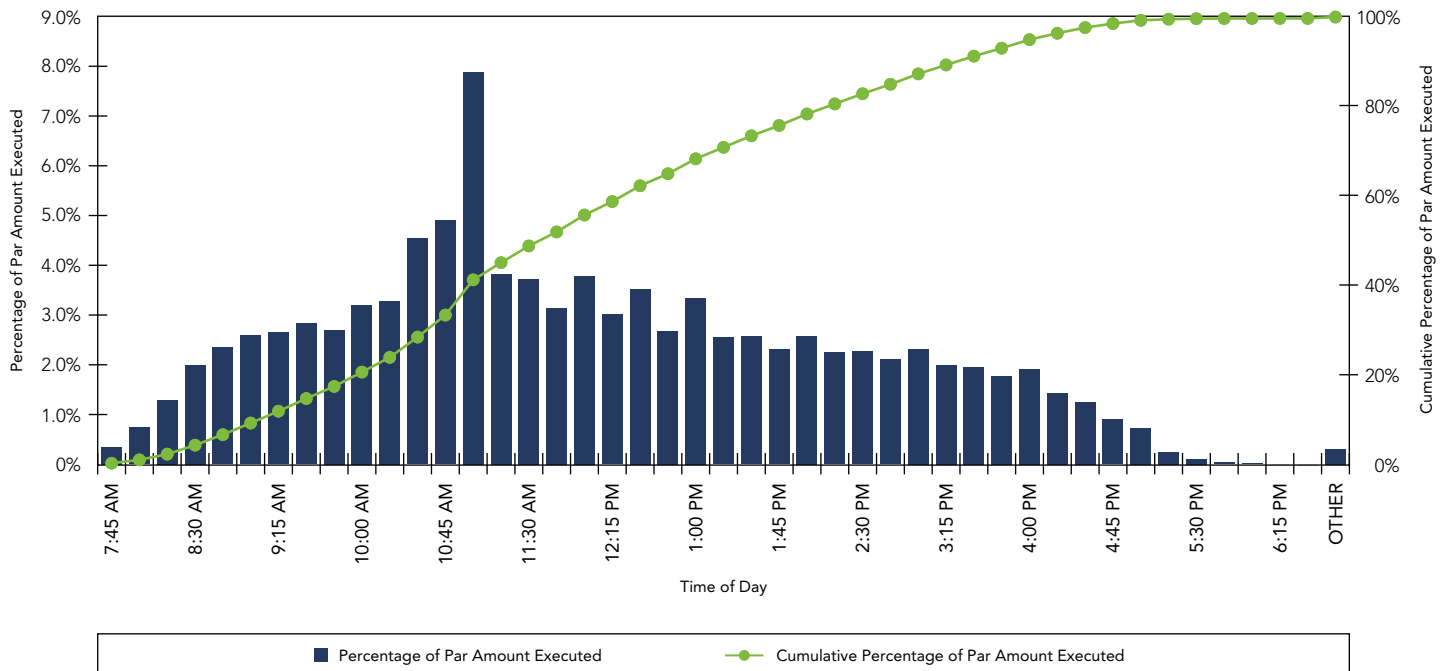
## Part Two

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# Municipal Market Trade Distribution Trends, 2023

### Par Amount Traded by Time of Day, 2023

Trades executed within 15 minutes prior to time shown<sup>1</sup>



Time of Execution	Average Par Value (\$ Millions)
7:45 AM	47.6
8:00 AM	99.8
8:15 AM	172.7
8:30 AM	268.3
8:45 AM	315.6
9:00 AM	348.3
9:15 AM	355.5
9:30 AM	379.9
9:45 AM	362.2
10:00 AM	430.6
10:15 AM	440.5
10:30 AM	609.7
10:45 AM	658.8
11:00 AM	1,058.3
11:15 AM	514.9
11:30 AM	501.1
11:45 AM	421.3
12:00 PM	507.3
12:15 PM	404.5
12:30 PM	473.2
12:45 PM	360.2
1:00 PM	449.1
1:15 PM	342.9

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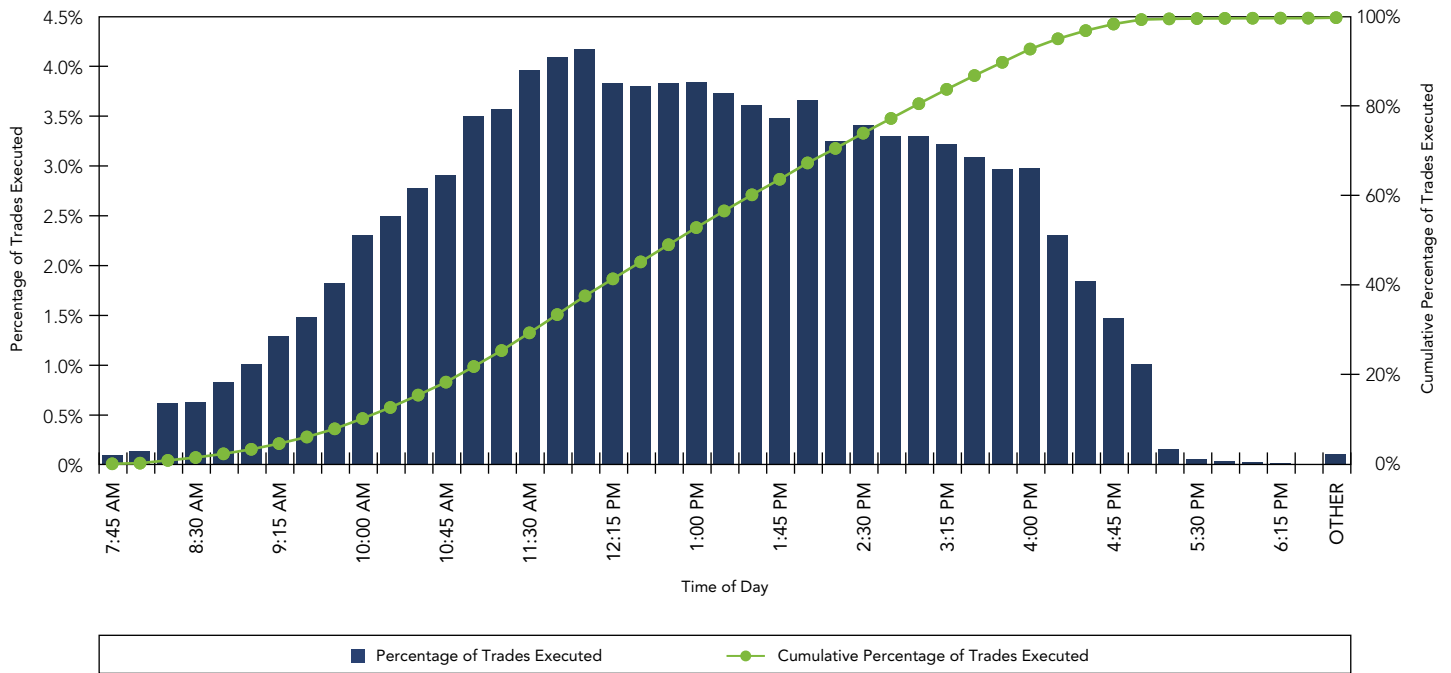
Time of Execution	Average Par Value (\$ Millions)
1:30 PM	345.7
1:45 PM	310.3
2:00 PM	345.9
2:15 PM	301.7
2:30 PM	304.9
2:45 PM	283.8
3:00 PM	311.1
3:15 PM	269.0
3:30 PM	263.3
3:45 PM	239.4
4:00 PM	256.0
4:15 PM	192.5
4:30 PM	168.6
4:45 PM	121.2
5:00 PM	97.4
5:15 PM	33.7
5:30 PM	15.1
5:45 PM	4.8
6:00 PM	2.1
6:15 PM	0.6
6:30 PM	0.5
Other <sup>2</sup>	41.7
<b>Total</b>	<b>13,432.0</b>

<sup>1</sup> Eastern time.

<sup>2</sup> Trades reported after 6:30 p.m. and before 7:30 a.m.

### Number of Trades by Time of Day, 2023

Trades executed within 15 minutes prior to time shown<sup>1</sup>



Time of Execution	Average Number of Trades
7:45 AM	54
8:00 AM	71
8:15 AM	328
8:30 AM	332
8:45 AM	436
9:00 AM	530
9:15 AM	674
9:30 AM	779
9:45 AM	957
10:00 AM	1,206
10:15 AM	1,306
10:30 AM	1,453
10:45 AM	1,523
11:00 AM	1,835
11:15 AM	1,875
11:30 AM	2,080
11:45 AM	2,148
12:00 PM	2,190
12:15 PM	2,009
12:30 PM	1,995
12:45 PM	2,012
1:00 PM	2,016
1:15 PM	1,958

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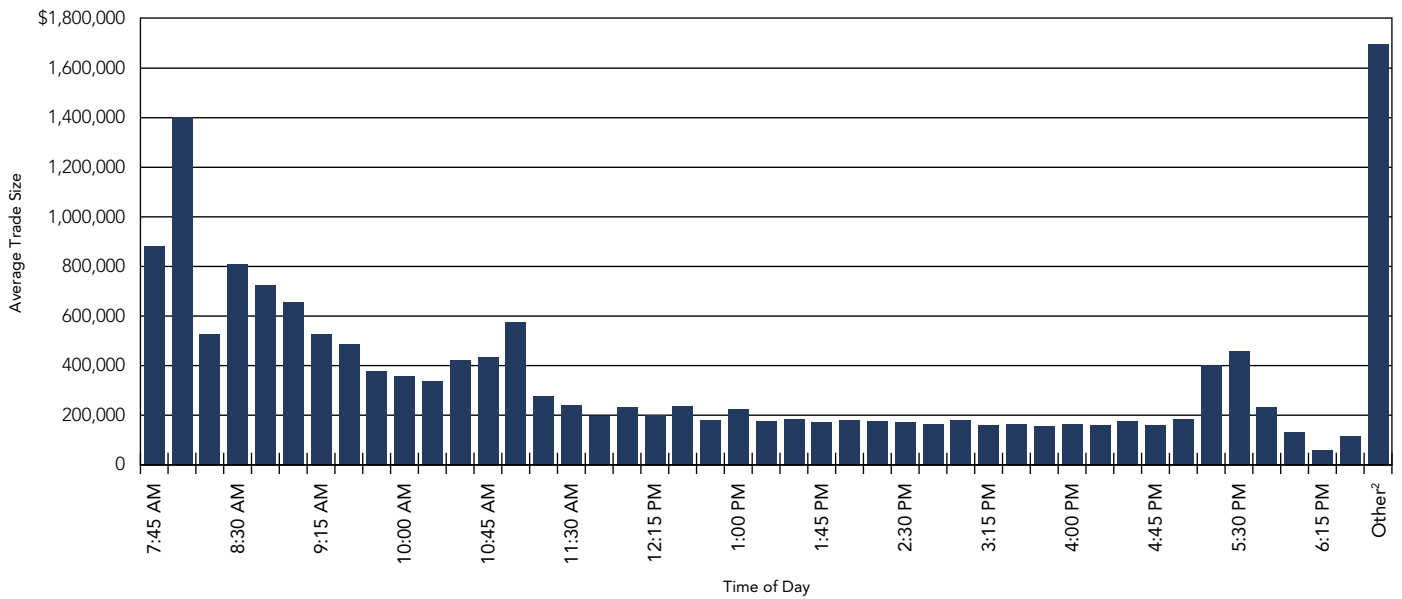
Time of Execution	Average Number of Trades
1:30 PM	1,893
1:45 PM	1,827
2:00 PM	1,921
2:15 PM	1,708
2:30 PM	1,787
2:45 PM	1,732
3:00 PM	1,732
3:15 PM	1,689
3:30 PM	1,619
3:45 PM	1,555
4:00 PM	1,559
4:15 PM	1,205
4:30 PM	964
4:45 PM	769
5:00 PM	528
5:15 PM	84
5:30 PM	33
5:45 PM	21
6:00 PM	16
6:15 PM	9
6:30 PM	5
Other <sup>2</sup>	56
<b>Total</b>	<b>52,477</b>

<sup>1</sup> Eastern time.

<sup>2</sup> Trades reported after 6:30 p.m. and before 7:30 a.m.

### Average Daily Trade Size by Time of Day, 2023

Trades executed within 15 minutes prior to time shown<sup>1</sup>



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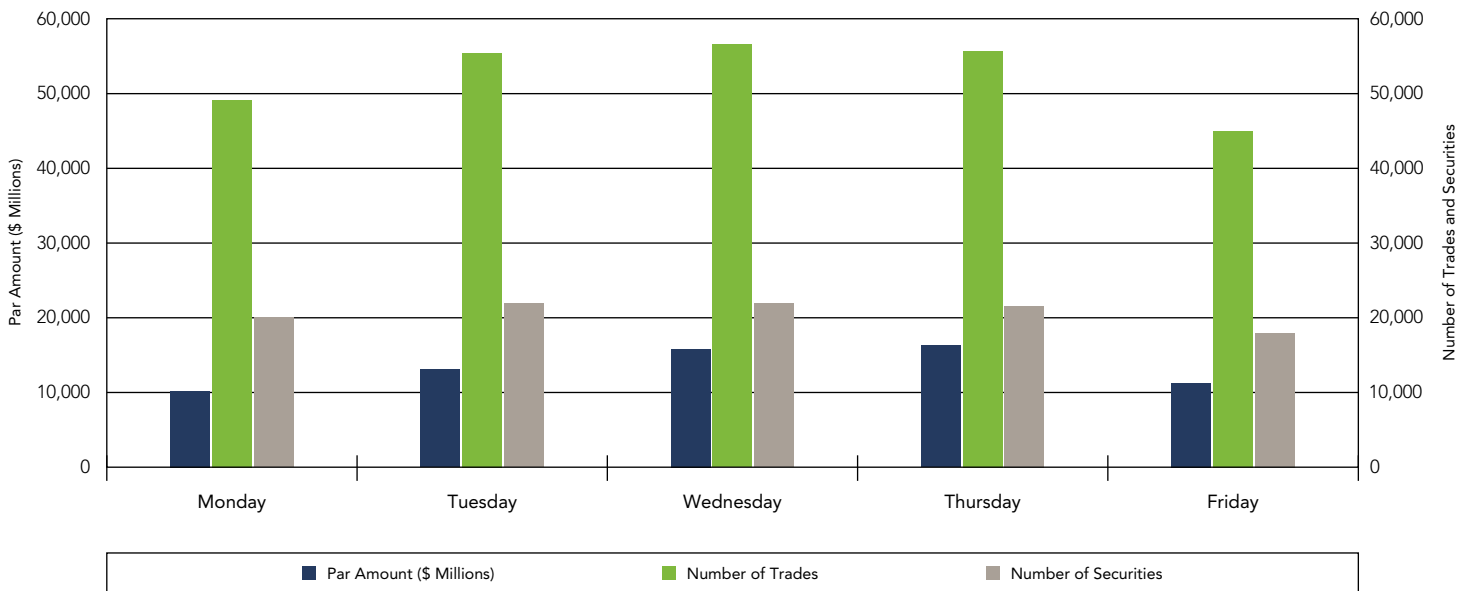
Time of Execution	Average Trade Size (\$)
7:45 AM	879,664
8:00 AM	1,400,308
8:15 AM	526,716
8:30 AM	808,469
8:45 AM	724,191
9:00 AM	657,522
9:15 AM	527,153
9:30 AM	487,982
9:45 AM	378,608
10:00 AM	357,016
10:15 AM	337,386
10:30 AM	419,662
10:45 AM	432,625
11:00 AM	576,787
11:15 AM	274,582
11:30 AM	240,963
11:45 AM	196,131
12:00 PM	231,649
12:15 PM	201,353
12:30 PM	237,176
12:45 PM	179,073
1:00 PM	222,762
1:15 PM	175,107

Time of Execution	Average Trade Size (\$)
1:30 PM	182,670
1:45 PM	169,860
2:00 PM	180,042
2:15 PM	176,641
2:30 PM	170,588
2:45 PM	163,811
3:00 PM	179,615
3:15 PM	159,251
3:30 PM	162,623
3:45 PM	153,961
4:00 PM	164,270
4:15 PM	159,737
4:30 PM	174,854
4:45 PM	157,692
5:00 PM	184,455
5:15 PM	401,430
5:30 PM	458,781
5:45 PM	230,502
6:00 PM	133,089
6:15 PM	59,196
6:30 PM	116,235
Other <sup>2</sup>	1,696,198
Overall	255,958

<sup>1</sup> Eastern time.

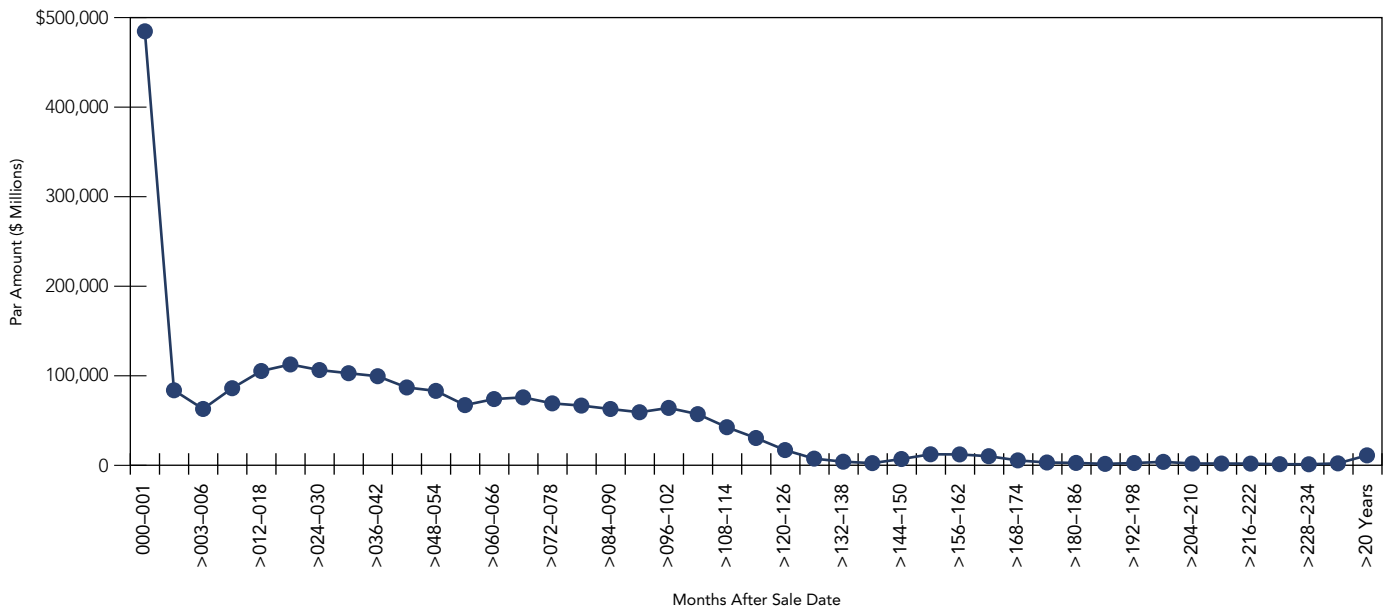
<sup>2</sup> Trades reported after 6:30 p.m. and before 7:30 a.m.

### Average Trading Volume by Day of Week, 2023



Weekday	Par Amount (\$ Millions)	Number of Trades	Number of Securities
Monday	10,224.4	49,138	20,001
Tuesday	13,111.5	55,466	21,913
Wednesday	15,823.2	56,581	21,908
Thursday	16,325.9	55,723	21,573
Friday	11,250.5	45,005	17,946

### Par Amount Traded by Months After Sale Date<sup>1</sup>, 2023



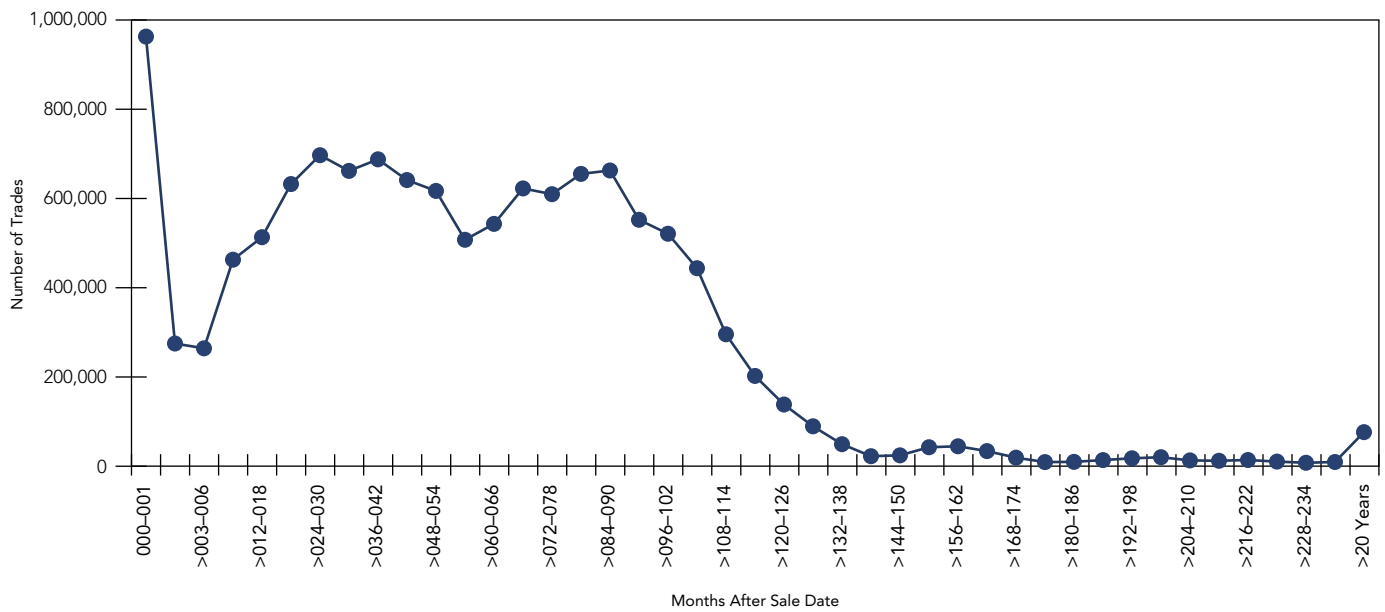
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Months After Sale Date	Par Amount (\$ Millions)	% of Total Par	Cumulative Percentage of Par Value
000-001	484,657.2	22.0%	22.0%
>001-003	83,802.6	3.8%	25.9%
>003-006	62,950.1	2.9%	28.7%
>006-012	86,109.5	3.9%	32.6%
>012-018	105,333.8	4.8%	37.4%
>018-024	112,647.7	5.1%	42.6%
>024-030	106,411.2	4.8%	47.4%
>030-036	102,882.1	4.7%	52.1%
>036-042	99,514.0	4.5%	56.6%
>042-048	86,965.5	4.0%	60.6%
>048-054	83,134.7	3.8%	64.3%
>054-060	67,250.7	3.1%	67.4%
>060-066	74,005.1	3.4%	70.8%
>066-072	75,888.3	3.5%	74.2%
>072-078	69,194.2	3.1%	77.4%
>078-084	66,713.4	3.0%	80.4%
>084-090	62,912.3	2.9%	83.3%
>090-096	59,293.7	2.7%	86.0%
>096-102	64,135.5	2.9%	88.9%
>102-108	57,172.4	2.6%	91.5%
>108-114	42,582.7	1.9%	93.4%
>114-120	30,527.2	1.4%	94.8%

Months After Sale Date	Par Amount (\$ Millions)	% of Total Par	Cumulative Percentage of Par Value
>120-126	17,049.9	0.8%	95.6%
>126-132	7,486.3	0.3%	95.9%
>132-138	4,062.4	0.2%	96.1%
>138-144	2,472.2	0.1%	96.2%
>144-150	7,054.3	0.3%	96.5%
>150-156	12,333.2	0.6%	97.1%
>156-162	12,188.8	0.6%	97.7%
>162-168	10,201.1	0.5%	98.1%
>168-174	5,525.1	0.3%	98.4%
>174-180	3,164.4	0.1%	98.5%
>180-186	2,693.3	0.1%	98.6%
>186-192	1,622.6	0.1%	98.7%
>192-198	2,579.0	0.1%	98.8%
>198-204	3,891.4	0.2%	99.0%
>204-210	2,026.0	0.1%	99.1%
>210-216	2,000.8	0.1%	99.2%
>216-222	1,909.9	0.1%	99.3%
>222-228	1,290.5	0.1%	99.3%
>228-234	1,174.9	0.1%	99.4%
>234-240	2,206.9	0.1%	99.5%
>20 Years	11,145.3	0.5%	100.0%
<b>Total</b>	<b>2,198,162.3</b>	<b>100%</b>	

<sup>1</sup> Includes only Bonds—securities with maturities of two or more years (maturity date less dated date) with fixed or zero interest rate. Excludes \$697 million par amount traded for which the date of sale was not available.

### Number of Trades by Months After Sale Date<sup>1</sup>, 2023



continued >

Months After Sale Date	Number of Trades	% of Total Trades	Cumulative Percentage of Number of Trades
000-001	962,831	7.6%	7.6%
>001-003	274,990	2.2%	9.7%
>003-006	264,205	2.1%	11.8%
>006-012	462,823	3.6%	15.5%
>012-018	513,257	4.0%	19.5%
>018-024	632,357	5.0%	24.5%
>024-030	697,002	5.5%	30.0%
>030-036	661,835	5.2%	35.2%
>036-042	687,741	5.4%	40.6%
>042-048	641,312	5.0%	45.6%
>048-054	616,978	4.9%	50.5%
>054-060	507,466	4.0%	54.5%
>060-066	543,086	4.3%	58.7%
>066-072	622,557	4.9%	63.6%
>072-078	609,636	4.8%	68.4%
>078-084	655,085	5.2%	73.6%
>084-090	662,748	5.2%	78.8%
>090-096	552,304	4.3%	83.2%
>096-102	521,005	4.1%	87.3%
>102-108	443,745	3.5%	90.7%
>108-114	295,668	2.3%	93.1%
>114-120	202,336	1.6%	94.7%

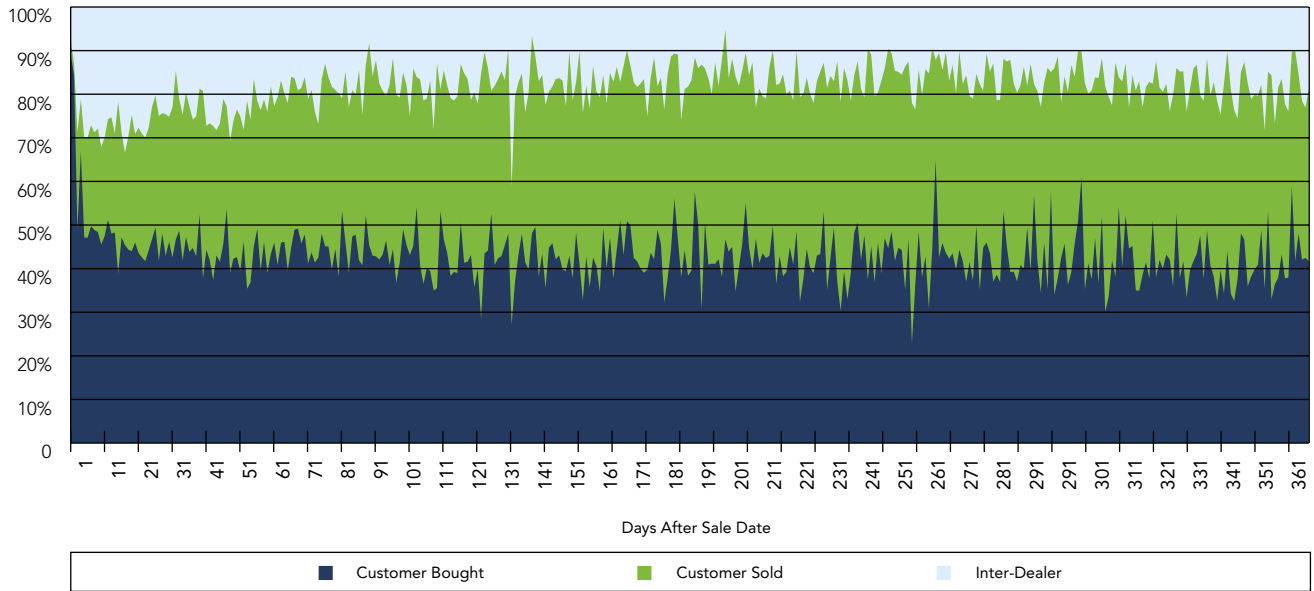
Months After Sale Date	Number of Trades	% of Total Trades	Cumulative Percentage of Number of Trades
>120-126	138,302	1.1%	95.7%
>126-132	89,507	0.7%	96.5%
>132-138	49,412	0.4%	96.8%
>138-144	22,499	0.2%	97.0%
>144-150	24,391	0.2%	97.2%
>150-156	42,578	0.3%	97.5%
>156-162	44,696	0.4%	97.9%
>162-168	33,936	0.3%	98.2%
>168-174	19,244	0.2%	98.3%
>174-180	9,270	0.1%	98.4%
>180-186	9,780	0.1%	98.5%
>186-192	13,771	0.1%	98.6%
>192-198	17,812	0.1%	98.7%
>198-204	20,183	0.2%	98.9%
>204-210	13,031	0.1%	99.0%
>210-216	12,240	0.1%	99.1%
>216-222	13,947	0.1%	99.2%
>222-228	10,369	0.1%	99.3%
>228-234	7,747	0.1%	99.3%
>234-240	9,480	0.1%	99.4%
>20 Years	76,400	0.6%	100.0%
Total	12,709,562	100%	

<sup>1</sup> Includes only Bonds—securities with maturities of two or more years (maturity date less dated date) with fixed or zero interest rate. Excludes 255 trades for which the date of sale was not available.

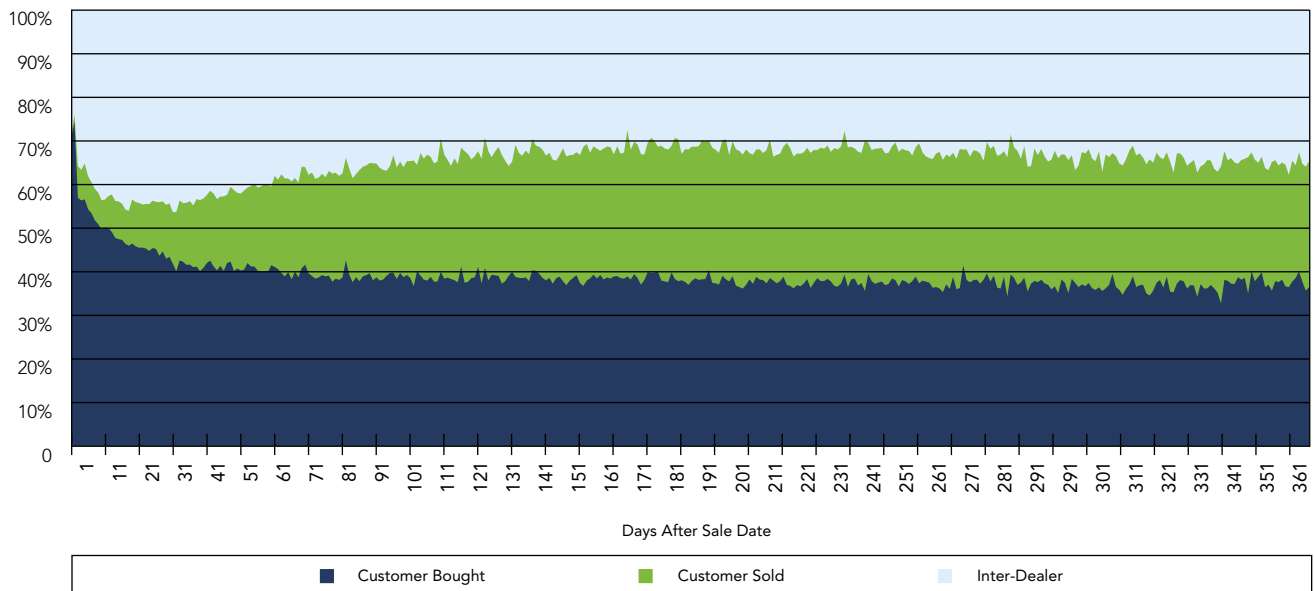


### Distribution of Trades by Type After Sale Date<sup>1</sup>, 2023

Par Amount

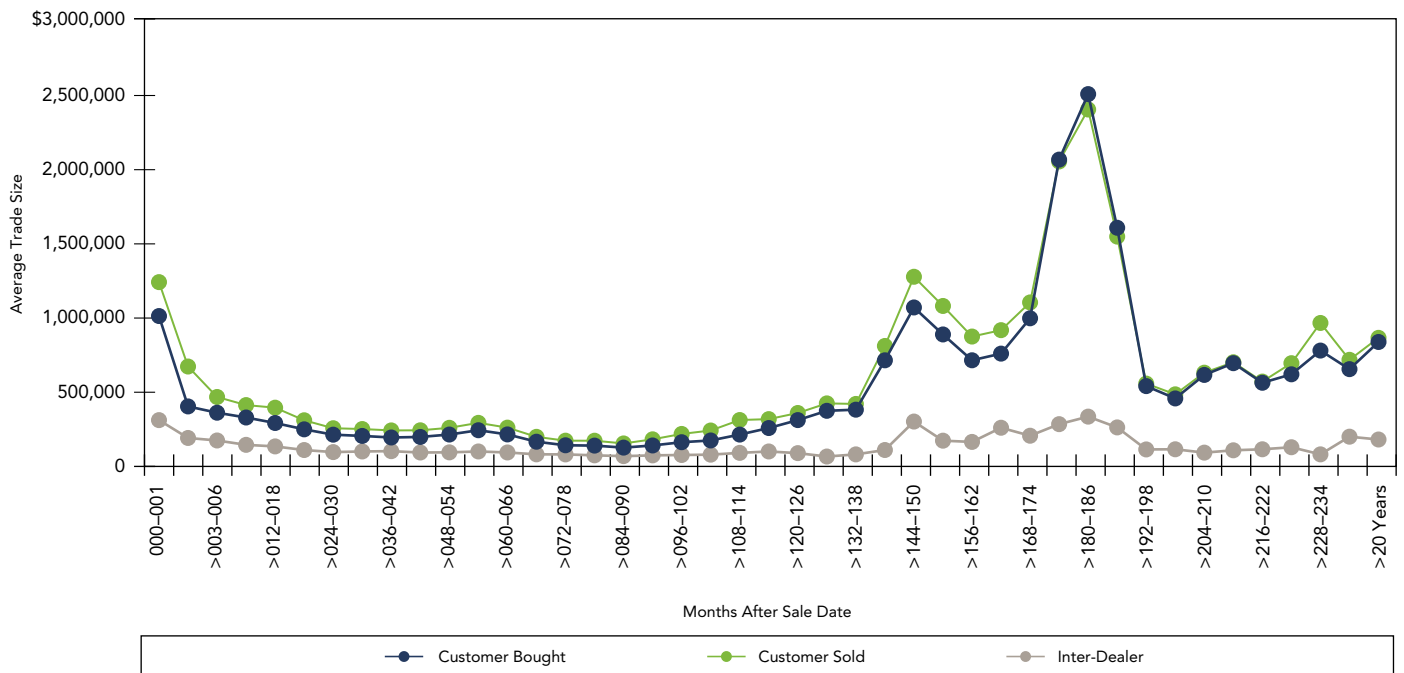


Number of Trades



<sup>1</sup> Excludes transactions for which the date of sale was not available.

### Average Trade Size by Trade Type by Months After Sale Date<sup>1</sup>, 2023 All trades



Months After Sale Date	Customer Bought	Customer Sold	Inter-dealer
000-001	1,013,635	1,242,207	312,080
>001-003	404,410	673,355	191,851
>003-006	362,040	468,013	174,837
>006-012	329,680	413,452	145,437
>012-018	292,672	395,898	134,893
>018-024	249,943	311,004	110,485
>024-030	214,020	257,434	96,637
>030-036	205,487	251,974	100,853
>036-042	195,029	242,632	102,814
>042-048	198,609	243,429	93,837
>048-054	214,938	260,297	94,783
>054-060	243,940	293,609	100,815
>060-066	215,672	261,441	94,026
>066-072	166,583	199,393	81,451
>072-078	142,495	173,519	81,049
>078-084	140,340	173,276	74,729
>084-090	126,803	154,856	69,418
>090-096	141,237	182,620	74,463
>096-102	163,184	218,924	76,966
>102-108	174,954	242,074	79,333
>108-114	214,689	312,706	91,405
>114-120	258,746	318,817	100,765

continued >

Months After Sale Date	Customer Bought	Customer Sold	Inter-dealer
>120-126	312,293	360,159	89,658
>126-132	374,830	424,830	66,691
>132-138	382,494	421,176	81,135
>138-144	715,230	811,918	110,658
>144-150	1,071,438	1,278,332	302,420
>150-156	889,464	1,081,500	173,522
>156-162	715,434	875,375	165,173
>162-168	760,303	918,432	260,735
>168-174	998,470	1,105,292	206,911
>174-180	2,067,947	2,055,522	284,884
>180-186	2,509,528	2,405,708	335,653
>186-192	1,608,632	1,549,105	262,907
>192-198	541,320	558,220	114,472
>198-204	458,275	485,875	115,511
>204-210	616,698	631,734	92,931
>210-216	695,832	702,150	108,676
>216-222	563,849	571,844	115,579
>222-228	620,885	695,830	129,342
>228-234	780,906	966,955	81,285
>234-240	655,659	718,484	200,453
>20 Years	838,706	866,643	181,399

<sup>1</sup> Excludes transactions for which the date of sale was not available.

## Part Three

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# Most Actively Traded Municipal Securities, 2023

### Top 50 Most Active Securities, 2023

By par amount

Rank	CUSIP <sup>1</sup>	Issuer Name	Coupon	Maturity	Par Amount (\$ Millions)	Number of Trades
1	402207AD6	GULF COAST INDL DEV AUTH TEX REV	0.55	11/1/41	10,428.3	745
2	270777AC9	EAST BATON ROUGE PARISH LA INC INDL DEV BRD REV	0.43	8/1/35	7,541.7	474
3	91412HPV9	UNIVERSITY CALIF REVS	0.50	5/15/48	5,453.9	373
4	60528AAS3	MISSISSIPPI BUSINESS FIN CORP MISS GULF OPPORTUNITY ZONE INDL DEV REV	0.43	12/1/30	5,116.8	165
5	79574CFM0	SALT RIV PROJ AGRIC IMPT & PWR DIST ARIZ ELEC SYS REV	5.00	1/1/50	5,110.9	688
6	91412GSK2	UNIVERSITY CALIF REVS	0.50	5/15/48	4,930.5	705
7	91412HPW7	UNIVERSITY CALIF REVS	0.47	5/15/48	4,908.3	372
8	74529JQG3	PUERTO RICO SALES TAX FING CORP SALES TAX REV	0.00	7/1/46	4,875.7	2,762
9	414009PV6	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV	0.55	12/1/59	4,516.8	755
10	38122NB84	GOLDEN ST TOB SECURITIZATION CORP CALIF TOB SETTLEMENT REV	0.00	6/1/66	4,343.2	320
11	249002MB9	DENTON TEX INDPT SCH DIST	5.00	8/15/48	4,224.3	365
12	19648FVN1	COLORADO HEALTH FACS AUTH REV	0.45	5/15/62	4,185.2	313
13	544525YN2	LOS ANGELES CALIF DEPT WTR & PWR WTRWKS REV	0.34	7/1/49	4,109.8	309
14	20775DTS1	CONNECTICUT ST HEALTH & EDL FACS AUTH REV	0.30	7/1/42	4,105.8	304
15	88258MAA3	TEXAS NAT GAS SECURITIZATION FIN CORP REV	5.10	4/1/35	4,086.9	529
16	64972GC85	NEW YORK N Y CITY MUN WTR FIN AUTH WTR & SWR SYS REV	0.65	6/15/53	3,905.8	559
17	60528AAV6	MISSISSIPPI BUSINESS FIN CORP MISS GULF OPPORTUNITY ZONE INDL DEV REV	0.43	12/1/30	3,852.6	255
18	88258MAB1	TEXAS NAT GAS SECURITIZATION FIN CORP REV	5.17	4/1/41	3,804.7	623
19	842475M85	SOUTHERN CALIF PUB PWR AUTH PWR PROJ REV	0.35	7/1/36	3,616.3	309
20	74265L2Z0	PRIVATE COLLEGES & UNIVS AUTH GA REV	5.00	9/1/33	3,521.1	75
21	64972GC69	NEW YORK N Y CITY MUN WTR FIN AUTH WTR & SWR SYS REV	0.65	6/15/44	3,511.8	528
22	544525YL6	LOS ANGELES CALIF DEPT WTR & PWR WTRWKS REV	0.48	7/1/45	3,414.2	1,071
23	91412GSH9	UNIVERSITY CALIF REVS	0.45	5/15/48	3,230.2	424
24	270777AD7	EAST BATON ROUGE PARISH LA INC INDL DEV BRD REV	0.43	12/1/40	3,225.2	213
25	64972GZB3	NEW YORK N Y CITY MUN WTR FIN AUTH WTR & SWR SYS REV	0.50	6/15/45	3,177.6	361
26	74529JQH1	PUERTO RICO SALES TAX FING CORP SALES TAX REV	0.00	7/1/51	3,161.3	2,501
27	60527EAA5	MISSISSIPPI BUSINESS FIN CORP MISS PORT FAC REV	0.43	6/1/43	3,137.3	184
28	88256PAG5	TEXAS MUN GAS ACQUISITION & SUPPLY CORP IV GAS SUPPLY REV	5.50	1/1/54	3,085.0	138
29	072024YE6	BAY AREA TOLL AUTH CALIF TOLL BRDG REV	0.45	4/1/55	3,041.0	502
30	64971XFY9	NEW YORK N Y CITY TRANSITIONAL FIN AUTH REV	0.50	8/1/45	3,022.5	267
31	915260CL5	UNIVERSITY WIS HOSPS & CLINICS AUTH REV	0.45	4/1/48	3,010.0	361
32	118217DA3	BUCKEYE OHIO TOB SETTLEMENT FING AUTH	0.00	6/1/57	2,912.0	161
33	64966JE77	NEW YORK N Y	0.57	4/1/42	2,900.6	516
34	06964KAA4	BARTOW CNTY GA DEV AUTH SOLID WASTE DISP FAC REV	0.85	11/1/62	2,871.0	483
35	64971XHT8	NEW YORK N Y CITY TRANSITIONAL FIN AUTH REV	0.50	8/1/42	2,823.2	404
36	91412GSJ5	UNIVERSITY CALIF REVS	0.47	5/15/48	2,791.4	483
37	452151LF8	ILLINOIS ST	5.10	6/1/33	2,725.1	1,495
38	64971XKS6	NEW YORK N Y CITY TRANSITIONAL FIN AUTH REV	0.65	11/1/44	2,703.3	391
39	91412GSG1	UNIVERSITY CALIF REVS	0.45	5/15/48	2,682.9	323
40	6133408D3	MONTGOMERY CNTY MD	0.50	11/1/37	2,629.7	960
41	821697L23	SHELBY CNTY TENN HEALTH EDL & HSG FACS BRD REV	0.60	6/1/42	2,629.1	142
42	249002MC7	DENTON TEX INDPT SCH DIST	5.00	8/15/53	2,586.9	524
43	546475VV3	LOUISIANA ST GAS & FUELS TAX REV	0.55	5/1/43	2,586.5	377
44	118217CZ9	BUCKEYE OHIO TOB SETTLEMENT FING AUTH	5.00	6/1/55	2,586.4	1,563
45	74529JPX7	PUERTO RICO SALES TAX FING CORP SALES TAX REV	5.00	7/1/58	2,575.3	3,491
46	64971WGU8	NEW YORK N Y CITY TRANSITIONAL FIN AUTH REV	0.70	8/1/43	2,571.7	336
47	45471AAS1	INDIANA FIN AUTH HOSP REV	0.55	12/31/39	2,563.1	534
48	20775DTU6	CONNECTICUT ST HEALTH & EDL FACS AUTH REV	0.25	7/1/42	2,559.5	281
49	64971WEY2	NEW YORK N Y CITY TRANSITIONAL FIN AUTH REV	0.70	2/1/44	2,530.1	205
50	452252QQ5	ILLINOIS ST TOLL HWY AUTH TOLL HIGHWAY REV	5.00	1/1/36	2,461.8	70

<sup>1</sup> See page 1 for information on CUSIP identifiers.

## Top 50 Most Active Securities, 2023

By number of trades

Rank	CUSIP <sup>1</sup>	Issuer Name	Coupon	Maturity	Par Amount (\$ Millions)	Number of Trades
1	74514L3T2	PUERTO RICO COMWLTH	–	11/1/43	1,506.3	5,151
2	74514L3R6	PUERTO RICO COMWLTH	0.00	7/1/33	495.4	4,169
3	74514L3P0	PUERTO RICO COMWLTH	4.00	7/1/46	924.9	4,033
4	74514L3N5	PUERTO RICO COMWLTH	4.00	7/1/41	537.6	3,881
5	74514L3K1	PUERTO RICO COMWLTH	4.00	7/1/33	772.7	3,872
6	74514L3J4	PUERTO RICO COMWLTH	5.75	7/1/31	351.6	3,857
7	74514L3G0	PUERTO RICO COMWLTH	5.63	7/1/27	203.2	3,776
8	745197AC7	PUERTO RICO COMWLTH HWYS & TRANSN AUTH RESTRUCTURED TOLL REV	0.00	7/1/53	922.2	3,637
9	74514L3F2	PUERTO RICO COMWLTH	5.38	7/1/25	372.1	3,613
10	74514L3M7	PUERTO RICO COMWLTH	4.00	7/1/37	767.3	3,578
11	74514L3H8	PUERTO RICO COMWLTH	5.63	7/1/29	331.7	3,562
12	74529JPX7	PUERTO RICO SALES TAX FING CORP SALES TAX REV	5.00	7/1/58	2,575.3	3,491
13	74514L3L9	PUERTO RICO COMWLTH	4.00	7/1/35	324.9	3,484
14	745197AA1	PUERTO RICO COMWLTH HWYS & TRANSN AUTH RESTRUCTURED TOLL REV	5.00	7/1/62	1,111.7	3,226
15	745197AB9	PUERTO RICO COMWLTH HWYS & TRANSN AUTH RESTRUCTURED TOLL REV	0.00	7/1/32	454.6	3,043
16	74529JQG3	PUERTO RICO SALES TAX FING CORP SALES TAX REV	0.00	7/1/46	4,875.7	2,762
17	645913AA2	NEW JERSEY ECONOMIC DEV AUTH ST PENSION FDG REV	7.43	2/15/29	889.0	2,501
18	74529JQH1	PUERTO RICO SALES TAX FING CORP SALES TAX REV	0.00	7/1/51	3,161.3	2,501
19	74514L4C8	PUERTO RICO COMWLTH	–	11/1/51	1,461.9	2,459
20	74514L3Q8	PUERTO RICO COMWLTH	0.00	7/1/24	51.0	2,401
21	837151F38	SOUTH CAROLINA ST PUB SVC AUTH REV	5.50	12/1/54	651.8	2,362
22	13063D3T3	CALIFORNIA ST	5.20	3/1/43	2,330.0	2,348
23	645790QD1	NEW JERSEY HEALTH CARE FACS FING AUTH REV	4.00	7/1/51	792.1	2,318
24	64972GE59	NEW YORK N Y CITY MUN WTR FIN AUTH WTR & SWR SYS REV	4.13	6/15/47	776.6	2,291
25	896035CE0	TRIBOROUGH BRDG & TUNL AUTH N Y SALES TAX REV	4.50	5/15/63	1,011.5	2,280
26	74529JPW9	PUERTO RICO SALES TAX FING CORP SALES TAX REV	4.75	7/1/53	1,006.7	2,126
27	896035CD2	TRIBOROUGH BRDG & TUNL AUTH N Y SALES TAX REV	4.25	5/15/58	1,319.6	2,071
28	13063A5G5	CALIFORNIA ST	7.55	4/1/39	1,214.7	2,045
29	59334DLV4	MIAMI-DADE CNTY FLA WTR & SWR REV	4.00	10/1/49	640.2	1,987
30	64972JBB3	NEW YORK N Y CITY TRANSITIONAL FIN AUTH REV	4.38	5/1/53	661.2	1,940
31	13063D5S3	CALIFORNIA ST	4.00	9/1/43	934.6	1,927
32	74514L4G9	PUERTO RICO COMWLTH	–	11/1/51	748.9	1,913
33	89602HDT1	TRIBOROUGH BRDG & TUNL AUTH N Y PAYROLL MOBILITY TAX	5.00	8/15/24	579.0	1,879
34	64990FPV0	NEW YORK ST DORM AUTH ST PERS INCOME TAX REV	4.00	2/15/47	710.6	1,868
35	531127AC2	LIBERTY N Y DEV CORP REV	5.25	10/1/35	375.3	1,858
36	13062TH72	CALIFORNIA ST	5.25	8/1/32	446.7	1,721
37	62476RAC9	MTA HUDSON RAIL YARDS TR OBLIGS REV	5.00	11/15/56	193.0	1,701
38	010685KF1	ALACHUA CNTY FLA HEALTH FACS AUTH HEALTH FACS REV	5.00	12/1/44	279.0	1,701
39	13063D3S5	CALIFORNIA ST	5.13	3/1/38	2,172.6	1,678
40	73358WZK3	PORT AUTH N Y & N J	5.25	10/15/55	339.4	1,667
41	64966Q6R6	NEW YORK N Y	4.13	8/1/53	488.3	1,657
42	64971X7H5	NEW YORK N Y CITY TRANSITIONAL FIN AUTH REV	4.00	2/1/51	857.8	1,651
43	592041WH6	MET GOVT NASHVILLE & DAVIDSON CNTY TENN H & E FACS BRD REV	5.00	7/1/46	386.7	1,610
44	13063D4F2	CALIFORNIA ST	4.00	10/1/50	622.4	1,597
45	6461395W1	NEW JERSEY ST TPK AUTH TPK REV	5.00	1/1/45	252.2	1,572
46	62476RAB1	MTA HUDSON RAIL YARDS TR OBLIGS REV	5.00	11/15/51	440.9	1,570
47	7178932X8	PHILADELPHIA PA WTR & WASTEWTR REV	4.50	9/1/48	302.8	1,568
48	118217CZ9	BUCKEYE OHIO TOB SETTLEMENT FING AUTH	5.00	6/1/55	2,586.4	1,563
49	467578LX6	JACKSON CNTY MO SPL OBLIG	4.25	12/1/53	307.3	1,559
50	646140DJ9	NEW JERSEY ST TPK AUTH TPK REV	4.00	1/1/42	442.1	1,550

<sup>1</sup> See page 1 for information on CUSIP identifiers.

Top 50 Most Active Fixed Rate<sup>1</sup> Securities, 2023

By par amount

Rank	CUSIP <sup>2</sup>	Issuer Name	Coupon	Maturity	Par Amount (\$ Millions)	Number of Trades
1	79574CFM0	SALT RIV PROJ AGRIC IMPT & PWR DIST ARIZ ELEC SYS REV	5	1/1/50	5,110.9	688
2	249002MB9	DENTON TEX INDPT SCH DIST	5	8/15/48	4,224.3	365
3	88258MAA3	TEXAS NAT GAS SECURITIZATION FIN CORP REV	5.102	4/1/35	4,086.9	529
4	88258MAB1	TEXAS NAT GAS SECURITIZATION FIN CORP REV	5.169	4/1/41	3,804.7	623
5	74265LZ20	PRIVATE COLLEGES & UNIVS AUTH GA REV	5	9/1/33	3,521.1	75
6	452151LF8	ILLINOIS ST	5.1	6/1/33	2,725.1	1,495
7	249002MC7	DENTON TEX INDPT SCH DIST	5	8/15/53	2,586.9	524
8	118217CZ9	BUCKEYE OHIO TOB SETTLEMENT FING AUTH	5	6/1/55	2,586.4	1,563
9	74529JPX7	PUERTO RICO SALES TAX FING CORP SALES TAX REV	5	7/1/58	2,575.3	3,491
10	452252QQ5	ILLINOIS ST TOLL HWY AUTH TOLL HIGHWAY REV	5	1/1/36	2,461.8	70
11	544351RJ0	LOS ANGELES CALIF	5	6/27/24	2,339.1	771
12	13063D3T3	CALIFORNIA ST	5.2	3/1/43	2,330.0	2,348
13	13063D3S5	CALIFORNIA ST	5.125	3/1/38	2,172.6	1,678
14	57582R3A2	MASSACHUSETTS ST	5	5/1/53	2,136.1	961
15	93974EJ49	WASHINGTON ST	5	8/1/48	1,922.3	226
16	79574CFR9	SALT RIV PROJ AGRIC IMPT & PWR DIST ARIZ ELEC SYS REV	5.25	1/1/53	1,725.2	212
17	682001HQ8	OMAHA PUB PWR DIST NEB ELEC REV	5.25	2/1/52	1,632.7	174
18	679111D27	OKLAHOMA ST TPK AUTH TPK REV	5.5	1/1/53	1,624.3	309
19	682001JV5	OMAHA PUB PWR DIST NEB ELEC REV	5.25	2/1/53	1,439.3	96
20	13063D3R7	CALIFORNIA ST	6	3/1/33	1,438.2	657
21	74529JRH0	PUERTO RICO SALES TAX FING CORP SALES TAX REV	4.329	7/1/40	1,389.9	1,395
22	896035CD2	TRIBOROUGH BRDG & TUNL AUTH N Y SALES TAX REV	4.25	5/15/58	1,319.6	2,071
23	45470YFK2	INDIANA FIN AUTH HEALTH SYS REV	5	10/1/53	1,283.0	589
24	575579R25	MASSACHUSETTS BAY TRANSN AUTH MASS SALES TAX REV	5.25	7/1/53	1,274.3	547
25	57604TKC9	MASSACHUSETTS ST TRANSN FD REV	5	6/1/50	1,273.9	470
26	57582R2F2	MASSACHUSETTS ST	5	11/1/52	1,230.5	587
27	13063A5G5	CALIFORNIA ST	7.55	4/1/39	1,214.7	2,045
28	64966Q7G9	NEW YORK N Y	5.828	10/1/53	1,189.2	188
29	882667AN8	TEXAS PRIVATE ACTIVITY BD SURFACE TRANSN CORP REV	5	6/30/58	1,140.9	416
30	13063D7G7	CALIFORNIA ST	5.875	10/1/41	1,139.4	569
31	13063D5F1	CALIFORNIA ST	5.25	9/1/53	1,117.8	1,186
32	54627RAT7	LOUISIANA LOC GOVT ENVIRONMENTAL FACS & CMNTY DEV AUTH SYS RESTORATION	5.198	12/1/39	1,117.0	238
33	745197AA1	PUERTO RICO COMWLTH HWYS & TRANSN AUTH RESTRUCTURED TOLL REV	5	7/1/62	1,111.7	3,226
34	13063A5E0	CALIFORNIA ST	7.5	4/1/34	1,109.9	1,249
35	73358XJB9	PORT AUTH N Y & N J	5.072	7/15/53	1,105.9	373
36	345105GY0	FOOTHILL / EASTERN TRANSN CORRIDOR AGY CALIF TOLL RD REV	6	1/15/49	1,087.2	527
37	93878YDT3	WASHINGTON D C MET AREA TRAN AUTH DEDICATED REV	5.25	7/15/53	1,081.8	375
38	64972GB60	NEW YORK N Y CITY MUN WTR FIN AUTH WTR & SWR SYS REV	5.25	6/15/52	1,035.8	839
39	544657JA8	LOS ANGELES CNTY CALIF	5	6/28/24	1,034.4	615
40	79574CFL2	SALT RIV PROJ AGRIC IMPT & PWR DIST ARIZ ELEC SYS REV	5	1/1/47	1,018.9	654
41	896035CE0	TRIBOROUGH BRDG & TUNL AUTH N Y SALES TAX REV	4.5	5/15/63	1,011.5	2,280
42	650116HA7	NEW YORK TRANSN DEV CORP SPL FAC REV	5.375	6/30/60	1,006.9	270
43	74529JPW9	PUERTO RICO SALES TAX FING CORP SALES TAX REV	4.75	7/1/53	1,006.7	2,126
44	64971X8M3	NEW YORK N Y CITY TRANSITIONAL FIN AUTH REV	5	5/1/53	980.2	685
45	13063D4T2	CALIFORNIA ST	5	10/1/42	961.6	1,022
46	13063D5S3	CALIFORNIA ST	4	9/1/43	934.6	1,927
47	74514L3P0	PUERTO RICO COMWLTH	4	7/1/46	924.9	4,033
48	64613CEH7	NEW JERSEY ST TRANSN TR FD AUTH	5.25	6/15/50	922.7	505
49	575577NZ0	MASSACHUSETTS BAY TRANSN AUTH MASS REV	5	7/1/52	917.7	227
50	842469BK3	SOUTHERN CALIF PUB PWR AUTH SOUTHN TRANSMISSION SYS RENEWAL PROJ REV	5.25	7/1/53	906.4	381

<sup>1</sup> Excludes zero-coupon securities.<sup>2</sup> See page 1 for information on CUSIP identifiers.

Top 50 Most Active Fixed Rate<sup>1</sup> Securities, 2023

By number of trades

Rank	CUSIP <sup>2</sup>	Issuer Name	Coupon	Maturity	Par Amount (\$ Millions)	Number of Trades
1	74514L3P0	PUERTO RICO COMWLTH	4.00	7/1/46	924.9	4,033
2	74514L3N5	PUERTO RICO COMWLTH	4.00	7/1/41	537.6	3,881
3	74514L3K1	PUERTO RICO COMWLTH	4.00	7/1/33	772.7	3,872
4	74514L3J4	PUERTO RICO COMWLTH	5.75	7/1/31	351.6	3,857
5	74514L3G0	PUERTO RICO COMWLTH	5.63	7/1/27	203.2	3,776
6	74514L3F2	PUERTO RICO COMWLTH	5.38	7/1/25	372.1	3,613
7	74514L3M7	PUERTO RICO COMWLTH	4.00	7/1/37	767.3	3,578
8	74514L3H8	PUERTO RICO COMWLTH	5.63	7/1/29	331.7	3,562
9	74529JPX7	PUERTO RICO SALES TAX FING CORP SALES TAX REV	5.00	7/1/58	2,575.3	3,491
10	74514L3L9	PUERTO RICO COMWLTH	4.00	7/1/35	324.9	3,484
11	745197AA1	PUERTO RICO COMWLTH HWYS & TRANSN AUTH RESTRUCTURED TOLL REV	5.00	7/1/62	1,111.7	3,226
12	645913AA2	NEW JERSEY ECONOMIC DEV AUTH ST PENSION FDG REV	7.43	2/15/29	889.0	2,501
13	837151F38	SOUTH CAROLINA ST PUB SVC AUTH REV	5.50	12/1/54	651.8	2,362
14	13063D3T3	CALIFORNIA ST	5.20	3/1/43	2,330.0	2,348
15	645790QD1	NEW JERSEY HEALTH CARE FACS FING AUTH REV	4.00	7/1/51	792.1	2,318
16	64972GE59	NEW YORK N Y CITY MUN WTR FIN AUTH WTR & SWR SYS REV	4.13	6/15/47	776.6	2,291
17	896035CE0	TRIBOROUGH BRDG & TUNL AUTH N Y SALES TAX REV	4.50	5/15/63	1,011.5	2,280
18	74529JPW9	PUERTO RICO SALES TAX FING CORP SALES TAX REV	4.75	7/1/53	1,006.7	2,126
19	896035CD2	TRIBOROUGH BRDG & TUNL AUTH N Y SALES TAX REV	4.25	5/15/58	1,319.6	2,071
20	13063A5G5	CALIFORNIA ST	7.55	4/1/39	1,214.7	2,045
21	59334DLV4	MIAMI-DADE CNTY FLA WTR & SWR REV	4.00	10/1/49	640.2	1,987
22	64972JBB3	NEW YORK N Y CITY TRANSITIONAL FIN AUTH REV	4.38	5/1/53	661.2	1,940
23	13063D5S3	CALIFORNIA ST	4.00	9/1/43	934.6	1,927
24	89602HDT1	TRIBOROUGH BRDG & TUNL AUTH N Y PAYROLL MOBILITY TAX	5.00	8/15/24	579.0	1,879
25	64990FPV0	NEW YORK ST DORM AUTH ST PERS INCOME TAX REV	4.00	2/15/47	710.6	1,868
26	531127AC2	LIBERTY N Y DEV CORP REV	5.25	10/1/35	375.3	1,858
27	13062TH72	CALIFORNIA ST	5.25	8/1/32	446.7	1,721
28	62476RAC9	MTA HUDSON RAIL YARDS TR OBLIGS REV	5.00	11/15/56	193.0	1,701
29	010685KF1	ALACHUA CNTY FLA HEALTH FACS AUTH HEALTH FACS REV	5.00	12/1/44	279.0	1,701
30	13063D3S5	CALIFORNIA ST	5.13	3/1/38	2,172.6	1,678
31	73358WZK3	PORT AUTH N Y & N J	5.25	10/15/55	339.4	1,667
32	64966Q6R6	NEW YORK N Y	4.13	8/1/53	488.3	1,657
33	64971X7H5	NEW YORK N Y CITY TRANSITIONAL FIN AUTH REV	4.00	2/1/51	857.8	1,651
34	592041WH6	MET GOVT NASHVILLE & DAVIDSON CNTY TENN H & E FACS BRD REV	5.00	7/1/46	386.7	1,610
35	13063D4F2	CALIFORNIA ST	4.00	10/1/50	622.4	1,597
36	6461395W1	NEW JERSEY ST TPK AUTH TPK REV	5.00	1/1/45	252.2	1,572
37	62476RAB1	MTA HUDSON RAIL YARDS TR OBLIGS REV	5.00	11/15/51	440.9	1,570
38	7178932X8	PHILADELPHIA PA WTR & WASTEWTR REV	4.50	9/1/48	302.8	1,568
39	118217CZ9	BUCKEYE OHIO TOB SETTLEMENT FING AUTH	5.00	6/1/55	2,586.4	1,563
40	467578LX6	JACKSON CNTY MO SPL OBLIG	4.25	12/1/53	307.3	1,559
41	646140DJ9	NEW JERSEY ST TPK AUTH TPK REV	4.00	1/1/42	442.1	1,550
42	60637AHZ8	MISSOURI ST HEALTH & EDL FACS AUTH HEALTH FACS REV	4.00	1/1/45	178.4	1,547
43	46360XAQ7	IRVINE CALIF FACS FING AUTH LEASE REV	4.25	5/1/53	372.4	1,497
44	13032UMR6	CALIFORNIA HEALTH FACS FING AUTH REV	5.00	11/1/27	207.3	1,497
45	452151LF8	ILLINOIS ST	5.10	6/1/33	2,725.1	1,495
46	837151L72	SOUTH CAROLINA ST PUB SVC AUTH REV	4.00	12/1/52	304.0	1,473
47	13032UB23	CALIFORNIA HEALTH FACS FING AUTH REV	4.00	8/15/48	720.3	1,470
48	646140DK6	NEW JERSEY ST TPK AUTH TPK REV	4.00	1/1/51	215.5	1,462
49	59261AG35	METROPOLITAN TRANSN AUTH N Y REV	4.75	11/15/45	513.4	1,453
50	650036AP1	NEW YORK ST URBAN DEV CORP REV	4.00	3/15/49	629.0	1,452

<sup>1</sup> Excludes zero-coupon securities.<sup>2</sup> See page 1 for information on CUSIP identifiers.

### Top 50 Most Active Variable Rate Securities, 2023

By par amount

Rank	CUSIP <sup>1</sup>	Issuer Name	Maturity	Par Amount (\$ Millions)	Number of Trades
1	402207AD6	GULF COAST INDL DEV AUTH TEX REV	11/1/41	10,428.3	745
2	270777AC9	EAST BATON ROUGE PARISH LA INC INDL DEV BRD REV	8/1/35	7,541.7	474
3	91412HPV9	UNIVERSITY CALIF REVS	5/15/48	5,453.9	373
4	60528AAS3	MISSISSIPPI BUSINESS FIN CORP MISS GULF OPPORTUNITY ZONE INDL DEV REV	12/1/30	5,116.8	165
5	91412GSK2	UNIVERSITY CALIF REVS	5/15/48	4,930.5	705
6	91412HPW7	UNIVERSITY CALIF REVS	5/15/48	4,908.3	372
7	414009PV6	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV	12/1/59	4,516.8	755
8	19648FVN1	COLORADO HEALTH FACS AUTH REV	5/15/62	4,185.2	313
9	544525YN2	LOS ANGELES CALIF DEPT WTR & PWR WTRWKS REV	7/1/49	4,109.8	309
10	20775DTS1	CONNECTICUT ST HEALTH & EDL FACS AUTH REV	7/1/42	4,105.8	304
11	64972GC85	NEW YORK N Y CITY MUN WTR FIN AUTH WTR & SWR SYS REV	6/15/53	3,905.8	559
12	60528AAV6	MISSISSIPPI BUSINESS FIN CORP MISS GULF OPPORTUNITY ZONE INDL DEV REV	12/1/30	3,852.6	255
13	842475M85	SOUTHERN CALIF PUB PWR AUTH PWR PROJ REV	7/1/36	3,616.3	309
14	64972GC69	NEW YORK N Y CITY MUN WTR FIN AUTH WTR & SWR SYS REV	6/15/44	3,511.8	528
15	544525YL6	LOS ANGELES CALIF DEPT WTR & PWR WTRWKS REV	7/1/45	3,414.2	1,071
16	91412GSH9	UNIVERSITY CALIF REVS	5/15/48	3,230.2	424
17	270777AD7	EAST BATON ROUGE PARISH LA INC INDL DEV BRD REV	12/1/40	3,225.2	213
18	64972GZB3	NEW YORK N Y CITY MUN WTR FIN AUTH WTR & SWR SYS REV	6/15/45	3,177.6	361
19	60527EAA5	MISSISSIPPI BUSINESS FIN CORP MISS PORT FAC REV	6/1/43	3,137.3	184
20	88256PAG5	TEXAS MUN GAS ACQUISITION & SUPPLY CORP IV GAS SUPPLY REV	1/1/54	3,085.0	138
21	072024YE6	BAY AREA TOLL AUTH CALIF TOLL BRDG REV	4/1/55	3,041.0	502
22	64971XFY9	NEW YORK N Y CITY TRANSITIONAL FIN AUTH REV	8/1/45	3,022.5	267
23	915260CL5	UNIVERSITY WIS HOSPS & CLINICS AUTH REV	4/1/48	3,010.0	361
24	64966JE77	NEW YORK N Y	4/1/42	2,900.6	516
25	06964KAA4	BARTOW CNTY GA DEV AUTH SOLID WASTE DISP FAC REV	11/1/62	2,871.0	483
26	64971XHT8	NEW YORK N Y CITY TRANSITIONAL FIN AUTH REV	8/1/42	2,823.2	404
27	91412GSJ5	UNIVERSITY CALIF REVS	5/15/48	2,791.4	483
28	64971XKS6	NEW YORK N Y CITY TRANSITIONAL FIN AUTH REV	11/1/44	2,703.3	391
29	91412GSG1	UNIVERSITY CALIF REVS	5/15/48	2,682.9	323
30	6133408D3	MONTGOMERY CNTY MD	11/1/37	2,629.7	960
31	821697L23	SHELBY CNTY TENN HEALTH EDL & HSG FACS BRD REV	6/1/42	2,629.1	142
32	546475VV3	LOUISIANA ST GAS & FUELS TAX REV	5/1/43	2,586.5	377
33	64971WGU8	NEW YORK N Y CITY TRANSITIONAL FIN AUTH REV	8/1/43	2,571.7	336
34	45471AAS1	INDIANA FIN AUTH HOSP REV	12/31/39	2,563.1	534
35	20775DTU6	CONNECTICUT ST HEALTH & EDL FACS AUTH REV	7/1/42	2,559.5	281
36	64971WEY2	NEW YORK N Y CITY TRANSITIONAL FIN AUTH REV	2/1/44	2,530.1	205
37	64966KCW1	NEW YORK N Y	10/1/38	2,443.5	378
38	64966QH29	NEW YORK N Y	9/1/49	2,407.2	343
39	64966LLS8	NEW YORK N Y	3/1/40	2,390.7	628
40	88256PAT7	TEXAS MUN GAS ACQUISITION & SUPPLY CORP IV GAS SUPPLY REV	1/1/54	2,380.6	199
41	64986UA72	NEW YORK ST HSG FIN AGY REV	11/1/46	2,370.0	208
42	64972F2J4	NEW YORK N Y CITY MUN WTR FIN AUTH WTR & SWR SYS REV	6/15/44	2,350.5	544
43	546598AA1	LOUISVILLE & JEFFERSON CNTY KY REGL ARPT AUTH SPL FACS REV	1/1/29	2,299.2	140
44	544495DH4	LOS ANGELES CALIF DEPT WTR & PWR REV	7/1/34	2,289.5	518
45	915137U35	UNIVERSITY TEX UNIV REVS	8/1/39	2,252.5	238
46	60528ABX1	MISSISSIPPI BUSINESS FIN CORP MISS GULF OPPORTUNITY ZONE INDL DEV REV	11/1/35	2,232.3	767
47	64966FA87	NEW YORK N Y	4/1/36	2,226.9	628
48	64966QH37	NEW YORK N Y	9/1/49	2,216.6	339
49	64972FK62	NEW YORK N Y CITY MUN WTR FIN AUTH WTR & SWR SYS REV	6/15/41	2,188.1	465
50	56035DFC1	MAIN STR NAT GAS INC GA GAS SUPPLY REV	7/1/53	2,184.1	462

<sup>1</sup> See page 1 for information on CUSIP identifiers.



## Top 50 Most Active Variable Rate Securities, 2023

By number of trades

Rank	CUSIP <sup>1</sup>	Issuer Name	Maturity	Par Amount (\$ Millions)	Number of Trades
1	74514L3T2	PUERTO RICO COMWLTH	11/1/43	1,506.3	5,151
2	74514L4C8	PUERTO RICO COMWLTH	11/1/51	1,461.9	2,459
3	74514L4G9	PUERTO RICO COMWLTH	11/1/51	748.9	1,913
4	544525YL6	LOS ANGELES CALIF DEPT WTR & PWR WTRWKS REV	7/1/45	3,414.2	1,071
5	6133408D3	MONTGOMERY CNTY MD	11/1/37	2,629.7	960
6	13013JAP1	CALIFORNIA CMNTY CHOICE FING AUTH CLEAN ENERGY PROJ REV	2/1/52	938.4	822
7	60528ABX1	MISSISSIPPI BUSINESS FIN CORP MISS GULF OPPORTUNITY ZONE INDL DEV REV	11/1/35	2,232.3	767
8	414009PV6	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV	12/1/59	4,516.8	755
9	70342PAK0	PATRIOTS ENERGY GROUP FING AGY S C GAS SUPPLY REV	10/1/48	646.0	753
10	402207AD6	GULF COAST INDL DEV AUTH TEX REV	11/1/41	10,428.3	745
11	880397BW3	TENNERGY CORP TENN GAS REV	12/1/51	610.5	731
12	91412GSK2	UNIVERSITY CALIF REVS	5/15/48	4,930.5	705
13	09182NBR0	BLACK BELT ENERGY GAS DIST ALA GAS SUPPLY REV	6/1/51	778.3	703
14	60374VEJ8	MINNEAPOLIS MINN HEALTH CARE SYS REV	11/15/48	1,463.0	677
15	57586CFZ3	MASSACHUSETTS ST HEALTH & EDL FACS AUTH REV	7/1/40	149.9	641
16	64966LLS8	NEW YORK N Y	3/1/40	2,390.7	628
17	64966FA87	NEW YORK N Y	4/1/36	2,226.9	628
18	70556CAB0	PEFA INC IOWA GAS PROJ REV	9/1/49	497.1	624
19	13032UJW6	CALIFORNIA HEALTH FACS FING AUTH REV	6/1/41	285.1	595
20	64972GCM4	NEW YORK N Y CITY MUN WTR FIN AUTH WTR & SWR SYS REV	6/15/50	1,502.8	592
21	84136FAH0	SOUTHEAST ENERGY AUTH COMMODITY SUPPLY REV ALA	11/1/51	142.3	574
22	64972GCN2	NEW YORK N Y CITY MUN WTR FIN AUTH WTR & SWR SYS REV	6/15/50	1,963.3	570
23	84131TAQ5	SOUTHEAST ALA GAS SUPPLY DIST GAS SUPPLY REV	6/1/49	570.8	566
24	74514L4D6	PUERTO RICO COMWLTH	11/1/51	223.0	563
25	71884SAC4	PHOENIX ARIZ INDL DEV AUTH HEALTH CARE FACS REV	11/15/52	1,013.8	562
26	64972GC85	NEW YORK N Y CITY MUN WTR FIN AUTH WTR & SWR SYS REV	6/15/53	3,905.8	559
27	13013JAX4	CALIFORNIA CMNTY CHOICE FING AUTH CLEAN ENERGY PROJ REV	10/1/52	283.2	558
28	20774Y3C9	CONNECTICUT ST HEALTH & EDL FACS AUTH REV	7/1/40	62.3	558
29	64966LU25	NEW YORK N Y	6/1/44	1,834.6	552
30	64971MLS9	NEW YORK N Y CITY TRANSITIONAL FIN AUTH REV	11/1/27	121.5	551
31	64972F2J4	NEW YORK N Y CITY MUN WTR FIN AUTH WTR & SWR SYS REV	6/15/44	2,350.5	544
32	45471AAS1	INDIANA FIN AUTH HOSP REV	12/31/39	2,563.1	534
33	64972GC69	NEW YORK N Y CITY MUN WTR FIN AUTH WTR & SWR SYS REV	6/15/44	3,511.8	528
34	64971WE63	NEW YORK N Y CITY TRANSITIONAL FIN AUTH REV	2/1/45	1,386.5	527
35	64966GMR0	NEW YORK N Y	8/1/26	98.7	522
36	56035DDH2	MAIN STR NAT GAS INC GA GAS SUPPLY REV	7/1/52	660.4	519
37	544495DH4	LOS ANGELES CALIF DEPT WTR & PWR REV	7/1/34	2,289.5	518
38	160853MS3	CHARLOTTE-MECKLENBURG HOSP AUTH N C HEALTH CARE SYS REV	1/15/37	1,916.3	517
39	64966JE77	NEW YORK N Y	4/1/42	2,900.6	516
40	64966G4N9	NEW YORK N Y	4/1/36	1,351.2	515
41	64970KYY7	NEW YORK N Y CITY MUN WTR FIN AUTH WTR & SWR SYS REV	6/15/35	890.8	513
42	9151153V9	UNIVERSITY TEX PERM UNIV FD	7/1/38	1,177.3	512
43	072024YE6	BAY AREA TOLL AUTH CALIF TOLL BRDG REV	4/1/55	3,041.0	502
44	64966MSD2	NEW YORK N Y	10/1/46	1,477.5	500
45	60528ABZ6	MISSISSIPPI BUSINESS FIN CORP MISS GULF OPPORTUNITY ZONE INDL DEV REV	11/1/35	1,345.2	498
46	74440DCM4	KENTUCKY INC KY PUB ENERGY AUTH GAS SUPPLY REV	2/1/50	458.9	496
47	64966GWF5	NEW YORK N Y	10/1/27	169.0	486
48	64966MSB6	NEW YORK N Y	10/1/46	2,162.9	485
49	91412GSJ5	UNIVERSITY CALIF REVS	5/15/48	2,791.4	483
50	06964KAA4	BARTOW CNTY GA DEV AUTH SOLID WASTE DISP FAC REV	11/1/62	2,871.0	483

<sup>1</sup> See page 1 for information on CUSIP identifiers.

### Top 50 Most Active Short-Term<sup>1</sup> Securities, 2023

By par amount

Rank	CUSIP <sup>2</sup>	Issuer Name	Coupon	Maturity	Par Amount (\$ Millions)	Number of Trades
1	544351RJ0	LOS ANGELES CALIF	5.00	6/27/24	2,339.1	771
2	79208EBY8	ST LUCIE CNTY FLA SOLID WASTE DISP REV	0.80	5/1/24	1,159.0	130
3	544657JA8	LOS ANGELES CNTY CALIF	5.00	6/28/24	1,034.4	615
4	467229AF7	JACKSON CNTY MISS PORT FAC REV	3.85	6/1/23	900.3	162
5	65830RCW7	NORTH CAROLINA TPK AUTH TRIANGLE EXPWY SYS REV	5.00	2/1/24	709.7	703
6	544351QM4	LOS ANGELES CALIF	4.00	6/29/23	696.1	794
7	68441VAA3	ORANGE CNTY CALIF TRANSN AUTH REV	5.00	10/15/24	689.3	1,439
8	19672MDA3	COLORADO ST ED LN PROG	5.00	6/28/24	623.8	623
9	89602HDT1	TRIBOROUGH BRDG & TUNL AUTH N Y PAYROLL MOBILITY TAX	5.00	8/15/24	579.0	1,879
10	463608YH6	IRVINE CALIF IMPT BD ACT 1915	0.25	9/2/25	570.5	33
11	914455MB3	UNIVERSITY MICH UNIV REVS	0.55	12/1/24	549.1	392
12	59333RLT9	MIAMI-DADE CNTY FLA SCH DIST	5.00	6/18/24	538.3	190
13	646039YH4	NEW JERSEY ST	5.00	6/1/24	526.9	940
14	544657HZ5	LOS ANGELES CNTY CALIF	4.00	6/30/23	519.1	798
15	452152P88	ILLINOIS ST	5.00	11/1/24	489.5	534
16	19672MCY2	COLORADO ST ED LN PROG	5.00	6/29/23	478.9	190
17	769110CX3	RIVERSIDE CNTY CALIF	5.00	6/28/24	473.7	172
18	291147CE4	EMERY CNTY UTAH POLLUTN CTL REV	3.25	11/1/24	473.4	20
19	41386RU89	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	3.99	1/11/24	465.3	30
20	41386RLE6	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	3.55	1/4/23	450.0	4
21	41386RLF3	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	3.30	1/5/23	450.0	4
22	41386RLH9	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	2.80	1/9/23	450.0	4
23	41386RLJ5	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	2.50	1/10/23	450.0	4
24	41386RLK2	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	2.40	1/11/23	450.0	4
25	41386RLM8	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	1.90	1/13/23	450.0	4
26	41386RLN6	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	1.80	1/17/23	450.0	4
27	41386RLP1	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	1.50	1/18/23	450.0	4
28	41386RLR7	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	1.30	1/20/23	450.0	4
29	41386RLS5	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	1.20	1/23/23	450.0	4
30	41386RLT3	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	1.20	1/24/23	450.0	4
31	41386RLU0	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	1.10	1/25/23	450.0	4
32	41386RLY2	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	1.15	1/30/23	450.0	6
33	41386RM62	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	2.90	2/7/23	450.0	4
34	41386RMG0	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	3.80	2/21/23	450.0	4
35	41386RMJ4	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	3.25	2/23/23	450.0	5
36	41386RMK1	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	3.10	2/24/23	450.0	5
37	41386RML9	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	2.95	2/27/23	450.0	5
38	41386RMM7	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	2.80	2/28/23	450.0	5
39	41386RMN5	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	2.60	3/1/23	450.0	5
40	41386RMP0	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	2.40	3/2/23	450.0	5
41	41386RMQ8	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	2.20	3/3/23	450.0	5
42	41386RMR6	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	2.10	3/6/23	450.0	5
43	41386RMS4	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	1.90	3/7/23	450.0	5
44	41386RMT2	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	1.75	3/8/23	450.0	5
45	41386RMU9	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	1.60	3/9/23	450.0	5
46	41386RMV7	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	1.40	3/10/23	450.0	6
47	41386RMW5	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	1.50	3/13/23	450.0	7
48	41386RMX3	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	1.50	3/14/23	450.0	6
49	41386RMZ8	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	2.02	3/16/23	450.0	5
50	41386RN38	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV IAM COML PAPER 3/A2 SER C-1	3.75	3/20/23	450.0	5

<sup>1</sup> Securities with under two years in remaining maturity.

<sup>2</sup> See page 1 for information on CUSIP identifiers.

Top 50 Most Active Short-Term<sup>1</sup> Securities, 2023

By number of trades

Rank	CUSIP <sup>2</sup>	Issuer Name	Coupon	Maturity	Par Amount (\$ Millions)	Number of Trades
1	74514L3Q8	PUERTO RICO COMWLTH	–	7/1/24	51.0	2,401
2	89602HDT1	TRIBOROUGH BRDG & TUNL AUTH N Y PAYROLL MOBILITY TAX	5.00	8/15/24	579.0	1,879
3	74514L3F2	PUERTO RICO COMWLTH	5.38	7/1/25	164.3	1,743
4	68441VAA3	ORANGE CNTY CALIF TRANSN AUTH REV	5.00	10/15/24	689.3	1,439
5	89602HEZ6	TRIBOROUGH BRDG & TUNL AUTH N Y PAYROLL MOBILITY TAX	5.00	12/16/24	394.8	1,370
6	74514L3E5	PUERTO RICO COMWLTH	5.25	7/1/23	185.9	1,216
7	645913BC7	NEW JERSEY ECONOMIC DEV AUTH ST PENSION FDG REV	–	2/15/24	274.9	962
8	646039YH4	NEW JERSEY ST	5.00	6/1/24	526.9	940
9	574193PC6	MARYLAND ST	5.00	8/1/24	245.6	809
10	544657HZ5	LOS ANGELES CNTY CALIF	4.00	6/30/23	519.1	798
11	544351QM4	LOS ANGELES CALIF	4.00	6/29/23	696.1	794
12	544351RJ0	LOS ANGELES CALIF	5.00	6/27/24	2,339.1	771
13	5446465L2	LOS ANGELES CALIF UNI SCH DIST	5.00	7/1/24	101.0	712
14	70914PJ78	PENNSYLVANIA ST	5.00	1/1/24	147.7	711
15	65830RCW7	NORTH CAROLINA TPK AUTH TRIANGLE EXPWY SYS REV	5.00	2/1/24	709.7	703
16	89602HFB8	TRIBOROUGH BRDG & TUNL AUTH N Y PAYROLL MOBILITY TAX	5.00	11/15/24	398.6	661
17	650035W79	NEW YORK ST URBAN DEV CORP REV	5.00	3/15/24	171.8	655
18	7962532J0	SAN ANTONIO TEX ELEC & GAS REV	5.25	2/1/24	84.0	650
19	57582PAE0	MASSACHUSETTS ST	5.25	9/1/24	85.5	637
20	19672MDA3	COLORADO ST ED LN PROG	5.00	6/28/24	623.8	623
21	59261ANC7	METROPOLITAN TRANSN AUTH N Y REV	5.00	11/15/23	101.1	617
22	544657JA8	LOS ANGELES CNTY CALIF	5.00	6/28/24	1,034.4	615
23	575579S73	MASSACHUSETTS BAY TRANSN AUTH MASS SALES TAX REV	4.00	5/1/25	108.6	595
24	73358WAH7	PORT AUTH N Y & N J	5.86	12/1/24	44.6	585
25	64966QL81	NEW YORK N Y	5.00	8/1/24	238.0	579
26	794665GD5	SALES TAX ASSET RECEIVABLE CORP N Y REV	5.00	10/15/24	78.7	574
27	176553HB4	CITIZENS PPTY INS CORP FLA	5.00	6/1/25	199.8	569
28	650036ER3	NEW YORK ST URBAN DEV CORP REV	5.00	3/15/25	69.2	567
29	786091AF5	SACRAMENTO CNTY CALIF PENSION OBLIG	6.63	8/1/24	40.7	562
30	594612DF7	MICHIGAN ST	5.00	3/15/24	58.5	543
31	452152P88	ILLINOIS ST	5.00	11/1/24	489.5	534
32	646136YC9	NEW JERSEY ST TRANSN TR FD AUTH	5.25	12/15/23	87.9	530
33	13063D5G9	CALIFORNIA ST	5.00	9/1/24	381.2	518
34	64972GSB1	NEW YORK N Y CITY MUN WTR FIN AUTH WTR & SWR SYS REV	5.00	6/15/24	44.6	512
35	57582RJT4	MASSACHUSETTS ST	5.00	7/1/24	53.8	508
36	82707BDG1	SILICON VY CLEAN WTR CALIF WASTEWTR REV	3.00	3/1/24	49.3	496
37	64990E5N3	NEW YORK ST DORM AUTH ST PERS INCOME TAX REV	5.00	2/15/25	82.4	491
38	575579HB6	MASSACHUSETTS BAY TRANSN AUTH MASS SALES TAX REV	5.00	7/1/24	110.9	490
39	574193KM9	MARYLAND ST	5.00	8/1/23	186.2	483
40	70914PB43	PENNSYLVANIA ST	5.00	9/15/24	65.6	481
41	574193MS4	MARYLAND ST	5.00	6/1/24	49.4	480
42	13063DFT0	CALIFORNIA ST	5.00	10/1/24	69.0	477
43	650009B44	NEW YORK ST TWY AUTH GEN REV	5.00	1/1/25	22.0	475
44	645913BD5	NEW JERSEY ECONOMIC DEV AUTH ST PENSION FDG REV	–	2/15/25	17.4	474
45	686507GA6	ORLANDO FLA UTILS COMMN UTIL SYS REV	5.00	10/1/24	38.4	473
46	70914PJ86	PENNSYLVANIA ST	5.00	1/1/25	200.4	469
47	692160UZ5	OYSTER BAY N Y	5.00	3/8/24	332.5	464
48	13063CSC5	CALIFORNIA ST	5.00	3/1/24	59.5	463
49	64966MJH3	NEW YORK N Y	5.00	8/1/24	85.1	463
50	91412HNY5	UNIVERSITY CALIF REVS	5.00	5/15/24	182.0	462

<sup>1</sup> Securities with under two years in remaining maturity.<sup>2</sup> See page 1 for information on CUSIP identifiers.

Top 50 Most Active Long-Term<sup>1</sup> Securities, 2023

By par amount

Rank	CUSIP <sup>2</sup>	Issuer Name	Coupon	Maturity	Par Amount (\$ Millions)	Number of Trades
1	402207AD6	GULF COAST INDL DEV AUTH TEX REV	0.55	11/1/41	10,428.3	745
2	270777AC9	EAST BATON ROUGE PARISH LA INC INDL DEV BRD REV	0.43	8/1/35	7,541.7	474
3	91412HPV9	UNIVERSITY CALIF REVS	0.50	5/15/48	5,453.9	373
4	60528AAS3	MISSISSIPPI BUSINESS FIN CORP MISS GULF OPPORTUNITY ZONE INDL DEV REV	0.43	12/1/30	5,116.8	165
5	79574CFM0	SALT RIV PROJ AGRIC IMPT & PWR DIST ARIZ ELEC SYS REV	5.00	1/1/50	5,110.9	688
6	91412GSK2	UNIVERSITY CALIF REVS	0.50	5/15/48	4,930.5	705
7	91412HPW7	UNIVERSITY CALIF REVS	0.47	5/15/48	4,908.3	372
8	74529JQG3	PUERTO RICO SALES TAX FING CORP SALES TAX REV	0.00	7/1/46	4,875.7	2,762
9	414009PV6	HARRIS CNTY TEX CULTURAL ED FACS FIN CORP REV	0.55	12/1/59	4,516.8	755
10	38122NB84	GOLDEN ST TOB SECURITIZATION CORP CALIF TOB SETTLEMENT REV	0.00	6/1/66	4,343.2	320
11	249002MB9	DENTON TEX INDPT SCH DIST	5.00	8/15/48	4,224.3	365
12	19648FVN1	COLORADO HEALTH FACS AUTH REV	0.45	5/15/62	4,185.2	313
13	544525YN2	LOS ANGELES CALIF DEPT WTR & PWR WTRWKS REV	0.34	7/1/49	4,109.8	309
14	20775DTS1	CONNECTICUT ST HEALTH & EDL FACS AUTH REV	0.30	7/1/42	4,105.8	304
15	88258MAA3	TEXAS NAT GAS SECURITIZATION FIN CORP REV	5.10	4/1/35	4,086.9	529
16	64972GC85	NEW YORK N Y CITY MUN WTR FIN AUTH WTR & SWR SYS REV	0.65	6/15/53	3,905.8	559
17	60528AAV6	MISSISSIPPI BUSINESS FIN CORP MISS GULF OPPORTUNITY ZONE INDL DEV REV	0.43	12/1/30	3,852.6	255
18	88258MAB1	TEXAS NAT GAS SECURITIZATION FIN CORP REV	5.17	4/1/41	3,804.7	623
19	842475M85	SOUTHERN CALIF PUB PWR AUTH PWR PROJ REV	0.35	7/1/36	3,616.3	309
20	74265LZ20	PRIVATE COLLEGES & UNIVS AUTH GA REV	5.00	9/1/33	3,521.1	75
21	64972GC69	NEW YORK N Y CITY MUN WTR FIN AUTH WTR & SWR SYS REV	0.65	6/15/44	3,511.8	528
22	544525YL6	LOS ANGELES CALIF DEPT WTR & PWR WTRWKS REV	0.48	7/1/45	3,414.2	1,071
23	91412GSH9	UNIVERSITY CALIF REVS	0.45	5/15/48	3,230.2	424
24	270777AD7	EAST BATON ROUGE PARISH LA INC INDL DEV BRD REV	0.43	12/1/40	3,225.2	213
25	64972GZB3	NEW YORK N Y CITY MUN WTR FIN AUTH WTR & SWR SYS REV	0.50	6/15/45	3,177.6	361
26	74529JQH1	PUERTO RICO SALES TAX FING CORP SALES TAX REV	0.00	7/1/51	3,161.3	2,501
27	60527EAA5	MISSISSIPPI BUSINESS FIN CORP MISS PORT FAC REV	0.43	6/1/43	3,137.3	184
28	88256PAG5	TEXAS MUN GAS ACQUISITION & SUPPLY CORP IV GAS SUPPLY REV	5.50	1/1/54	3,085.0	138
29	072024YE6	BAY AREA TOLL AUTH CALIF TOLL BRDG REV	0.45	4/1/55	3,041.0	502
30	64971XFY9	NEW YORK N Y CITY TRANSITIONAL FIN AUTH REV	0.50	8/1/45	3,022.5	267
31	91526OCL5	UNIVERSITY WIS HOSPS & CLINICS AUTH REV	0.45	4/1/48	3,010.0	361
32	118217DA3	BUCKEYE OHIO TOB SETTLEMENT FING AUTH	0.00	6/1/57	2,912.0	161
33	64966JE77	NEW YORK N Y	0.57	4/1/42	2,900.6	516
34	06964KAA4	BARTOW CNTY GA DEV AUTH SOLID WASTE DISP FAC REV	0.85	11/1/62	2,871.0	483
35	64971XHT8	NEW YORK N Y CITY TRANSITIONAL FIN AUTH REV	0.50	8/1/42	2,823.2	404
36	91412GSJ5	UNIVERSITY CALIF REVS	0.47	5/15/48	2,791.4	483
37	452151LF8	ILLINOIS ST	5.10	6/1/33	2,725.1	1,495
38	64971XKS6	NEW YORK N Y CITY TRANSITIONAL FIN AUTH REV	0.65	11/1/44	2,703.3	391
39	91412GSG1	UNIVERSITY CALIF REVS	0.45	5/15/48	2,682.9	323
40	6133408D3	MONTGOMERY CNTY MD	0.50	11/1/37	2,629.7	960
41	821697L23	SHELBY CNTY TENN HEALTH EDL & HSG FACS BRD REV	0.60	6/1/42	2,629.1	142
42	249002MC7	DENTON TEX INDPT SCH DIST	5.00	8/15/53	2,586.9	524
43	546475VV3	LOUISIANA ST GAS & FUELS TAX REV	0.55	5/1/43	2,586.5	377
44	118217CZ9	BUCKEYE OHIO TOB SETTLEMENT FING AUTH	5.00	6/1/55	2,586.4	1,563
45	74529JPX7	PUERTO RICO SALES TAX FING CORP SALES TAX REV	5.00	7/1/58	2,575.3	3,491
46	64971WGU8	NEW YORK N Y CITY TRANSITIONAL FIN AUTH REV	0.70	8/1/43	2,571.7	336
47	45471AAS1	INDIANA FIN AUTH HOSP REV	0.55	12/31/39	2,563.1	534
48	20775DTU6	CONNECTICUT ST HEALTH & EDL FACS AUTH REV	0.25	7/1/42	2,559.5	281
49	64971WEY2	NEW YORK N Y CITY TRANSITIONAL FIN AUTH REV	0.70	2/1/44	2,530.1	205
50	452252QQ5	ILLINOIS ST TOLL HWY AUTH TOLL HIGHWAY REV	5	1/1/36	2,461.8	70

<sup>1</sup> Securities with two years or more in remaining maturity.<sup>2</sup> See page 1 for information on CUSIP identifiers.

Top 50 Most Active Long-Term<sup>1</sup> Securities, 2023

By number of trades

Rank	CUSIP <sup>2</sup>	Issuer Name	Coupon	Maturity	Par Amount (\$ Millions)	Number of Trades
1	74514L3T2	PUERTO RICO COMWLTH	–	11/1/43	1,506.3	5,151
2	74514L3R6	PUERTO RICO COMWLTH	–	7/1/33	495.4	4,169
3	74514L3P0	PUERTO RICO COMWLTH	4.00	7/1/46	924.9	4,033
4	74514L3N5	PUERTO RICO COMWLTH	4.00	7/1/41	537.6	3,881
5	74514L3K1	PUERTO RICO COMWLTH	4.00	7/1/33	772.7	3,872
6	74514L3J4	PUERTO RICO COMWLTH	5.75	7/1/31	351.6	3,857
7	74514L3G0	PUERTO RICO COMWLTH	5.63	7/1/27	203.2	3,776
8	745197AC7	PUERTO RICO COMWLTH HWYS & TRANSN AUTH RESTRUCTURED TOLL REV	–	7/1/53	922.2	3,637
9	74514L3M7	PUERTO RICO COMWLTH	4.00	7/1/37	767.3	3,578
10	74514L3H8	PUERTO RICO COMWLTH	5.63	7/1/29	331.7	3,562
11	74529JPX7	PUERTO RICO SALES TAX FING CORP SALES TAX REV	5.00	7/1/58	2,575.3	3,491
12	74514L3L9	PUERTO RICO COMWLTH	4.00	7/1/35	324.9	3,484
13	745197AA1	PUERTO RICO COMWLTH HWYS & TRANSN AUTH RESTRUCTURED TOLL REV	5.00	7/1/62	1,111.7	3,226
14	745197AB9	PUERTO RICO COMWLTH HWYS & TRANSN AUTH RESTRUCTURED TOLL REV	–	7/1/32	454.6	3,043
15	74529JQG3	PUERTO RICO SALES TAX FING CORP SALES TAX REV	–	7/1/46	4,875.7	2,762
16	645913AA2	NEW JERSEY ECONOMIC DEV AUTH ST PENSION FDG REV	7.43	2/15/29	889.0	2,501
17	74529JQH1	PUERTO RICO SALES TAX FING CORP SALES TAX REV	–	7/1/51	3,161.3	2,501
18	74514L4C8	PUERTO RICO COMWLTH	–	11/1/51	1,461.9	2,459
19	837151F38	SOUTH CAROLINA ST PUB SVC AUTH REV	5.50	12/1/54	651.8	2,362
20	13063D3T3	CALIFORNIA ST	5.20	3/1/43	2,330.0	2,348
21	645790QD1	NEW JERSEY HEALTH CARE FACS FING AUTH REV	4.00	7/1/51	792.1	2,318
22	64972GE59	NEW YORK N Y CITY MUN WTR FIN AUTH WTR & SWR SYS REV	4.13	6/15/47	776.6	2,291
23	896035CE0	TRIBOROUGH BRDG & TUNL AUTH N Y SALES TAX REV	4.50	5/15/63	1,011.5	2,280
24	74529JPW9	PUERTO RICO SALES TAX FING CORP SALES TAX REV	4.75	7/1/53	1,006.7	2,126
25	896035CD2	TRIBOROUGH BRDG & TUNL AUTH N Y SALES TAX REV	4.25	5/15/58	1,319.6	2,071
26	13063A5G5	CALIFORNIA ST	7.55	4/1/39	1,214.7	2,045
27	59334DLV4	MIAMI-DADE CNTY FLA WTR & SWR REV	4.00	10/1/49	640.2	1,987
28	64972JBB3	NEW YORK N Y CITY TRANSITIONAL FIN AUTH REV	4.38	5/1/53	661.2	1,940
29	13063D5S3	CALIFORNIA ST	4.00	9/1/43	934.6	1,927
30	74514L4G9	PUERTO RICO COMWLTH	–	11/1/51	748.9	1,913
31	74514L3F2	PUERTO RICO COMWLTH	5.38	7/1/25	207.8	1,870
32	64990FPV0	NEW YORK ST DORM AUTH ST PERS INCOME TAX REV	4.00	2/15/47	710.6	1,868
33	531127AC2	LIBERTY N Y DEV CORP REV	5.25	10/1/35	375.3	1,858
34	13062TH72	CALIFORNIA ST	5.25	8/1/32	446.7	1,721
35	010685KF1	ALACHUA CNTY FLA HEALTH FACS AUTH HEALTH FACS REV	5.00	12/1/44	279.0	1,701
36	62476RAC9	MTA HUDSON RAIL YARDS TR OBLIGS REV	5.00	11/15/56	193.0	1,701
37	13063D3S5	CALIFORNIA ST	5.13	3/1/38	2,172.6	1,678
38	73358WZK3	PORT AUTH N Y & N J	5.25	10/15/55	339.4	1,667
39	64966Q6R6	NEW YORK N Y	4.13	8/1/53	488.3	1,657
40	64971X7H5	NEW YORK N Y CITY TRANSITIONAL FIN AUTH REV	4.00	2/1/51	857.8	1,651
41	592041WH6	MET GOVT NASHVILLE & DAVIDSON CNTY TENN H & E FACS BRD REV	5.00	7/1/46	386.7	1,610
42	13063D4F2	CALIFORNIA ST	4.00	10/1/50	622.4	1,597
43	6461395W1	NEW JERSEY ST TPK AUTH TPK REV	5.00	1/1/45	252.2	1,572
44	62476RAB1	MTA HUDSON RAIL YARDS TR OBLIGS REV	5.00	11/15/51	440.9	1,570
45	7178932X8	PHILADELPHIA PA WTR & WASTEWTR REV	4.50	9/1/48	302.8	1,568
46	118217CZ9	BUCKEYE OHIO TOB SETTLEMENT FING AUTH	5.00	6/1/55	2,586.4	1,563
47	467578LX6	JACKSON CNTY MO SPL OBLIG	4.25	12/1/53	307.3	1,559
48	646140DJ9	NEW JERSEY ST TPK AUTH TPK REV	4.00	1/1/42	442.1	1,550
49	60637AHZ8	MISSOURI ST HEALTH & EDL FACS AUTH HEALTH FACS REV	4.00	1/1/45	178.4	1,547
50	46360XAQ7	IRVINE CALIF FACS FING AUTH LEASE REV	4.25	5/1/53	372.4	1,497

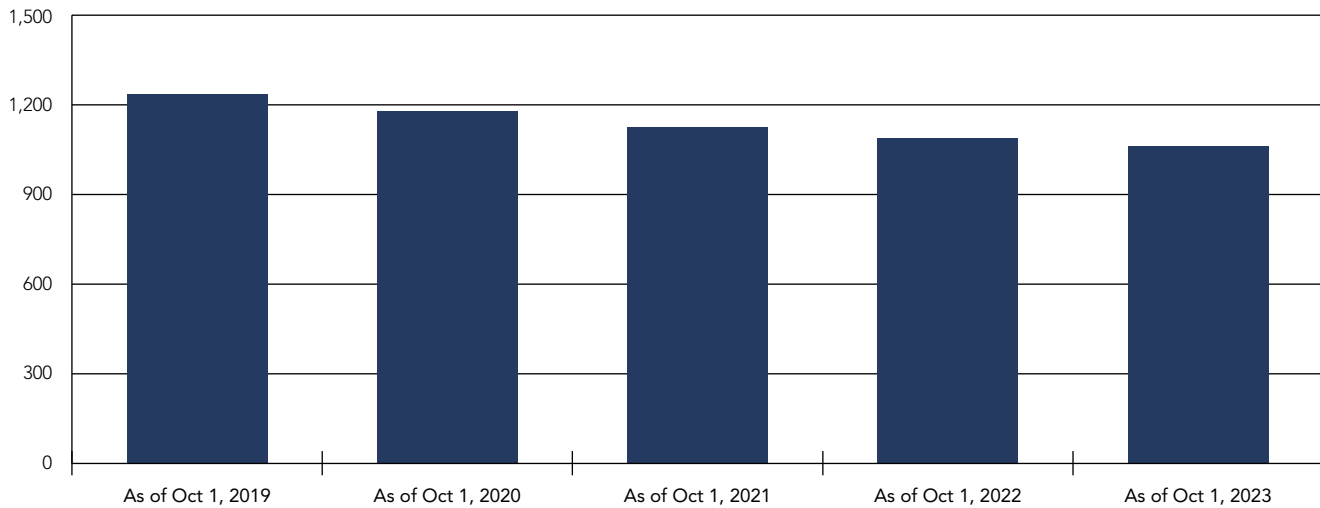
<sup>1</sup> Securities with two years or more in remaining maturity.<sup>2</sup> See page 1 for information on CUSIP identifiers.

## Part Four

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# Dealer Activity and Distribution of Municipal Trades, 2019–2023

### Number of MSRB Registered Dealers



	Number of Registered Dealers	% Change from Prior Period <sup>1</sup>
As of Oct 1, 2019	1,237	-4.5%
As of Oct 1, 2020	1,180	-4.6%
As of Oct 1, 2021	1,125	-4.7%
As of Oct 1, 2022	1,089	-3.2%
As of Oct 1, 2023	1,063	-2.4%

<sup>1</sup> A number of factors have impacted the decrease in the number of registered dealers, including the consolidation of broker dealers, mergers and acquisitions, as well as firms exiting the municipal securities business.

#### DATA AVAILABLE FROM THE MSRB

### Get Real-Time Feeds of Municipal Securities Market Disclosures

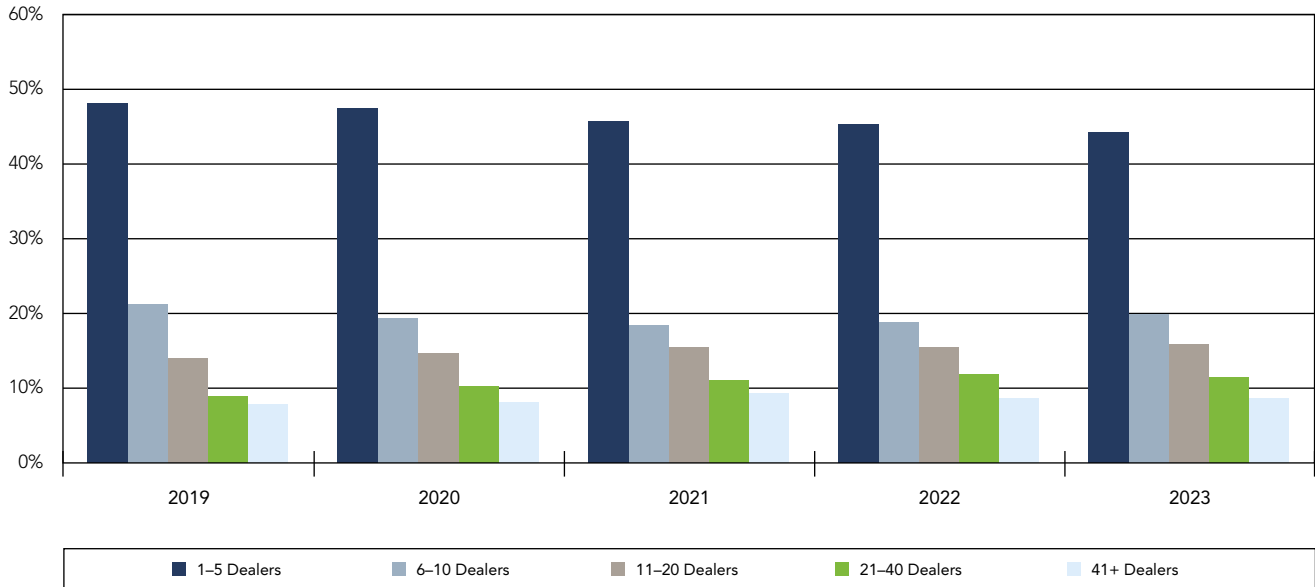
The MSRB offers subscriptions to two feeds of disclosure data:\*

- MSRB Primary Market Subscription Service:** All primary market disclosure documents and related information provided by municipal bond dealers.
- MSRB Continuing Disclosure Subscription Service:** All continuing disclosure documents and related information.

\*This information is also available at no charge on the EMMA® website.

### Distribution of Customer Trades by Number of Dealers

Par amount

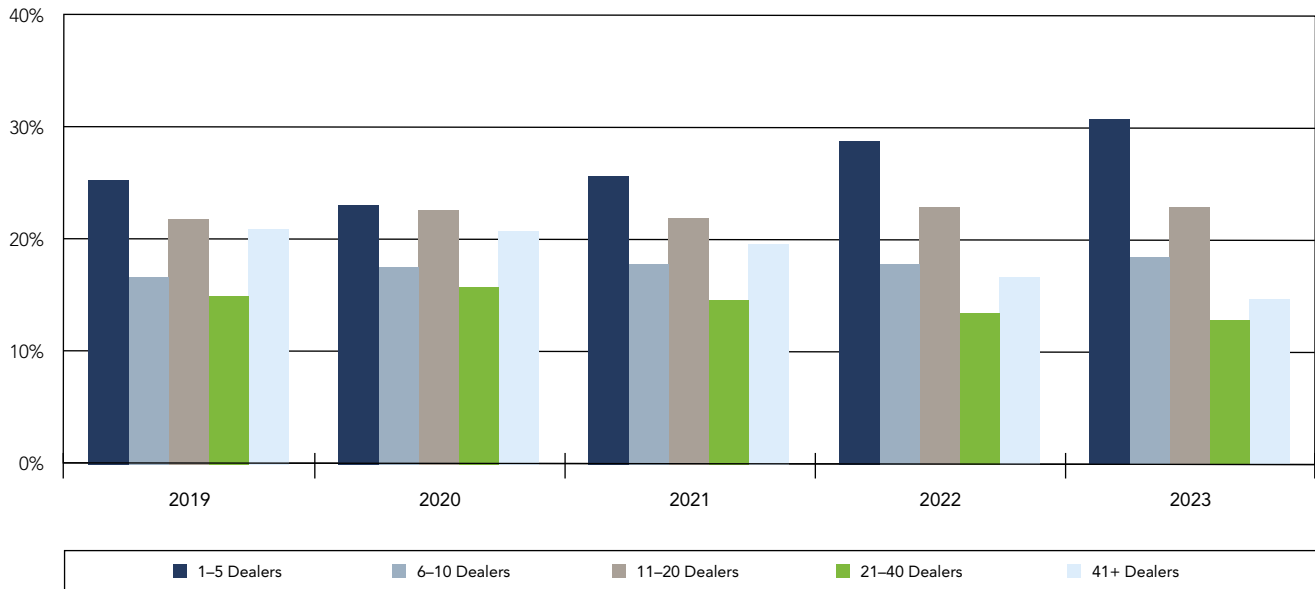


	2019	2020	2021	2022	2023
1-5 Dealers	48.1	47.5	45.7	45.3	44.3
6-10 Dealers	21.2	19.4	18.4	18.8	19.9
11-20 Dealers	14.0	14.7	15.5	15.4	15.8
21-40 Dealers	8.9	10.3	11.1	11.9	11.4
41+ Dealers	7.8	8.1	9.3	8.6	8.6



### Distribution of Customer Trades by Number of Dealers

Number of trades



	2019	2020	2021	2022	2023
1-5 Dealers	25.4	23.2	25.7	28.9	30.8
6-10 Dealers	16.7	17.6	17.9	17.9	18.5
11-20 Dealers	21.9	22.7	22	23	23
21-40 Dealers	15.0	15.8	14.7	13.5	12.9
41+ Dealers	21.0	20.8	19.7	16.7	14.8

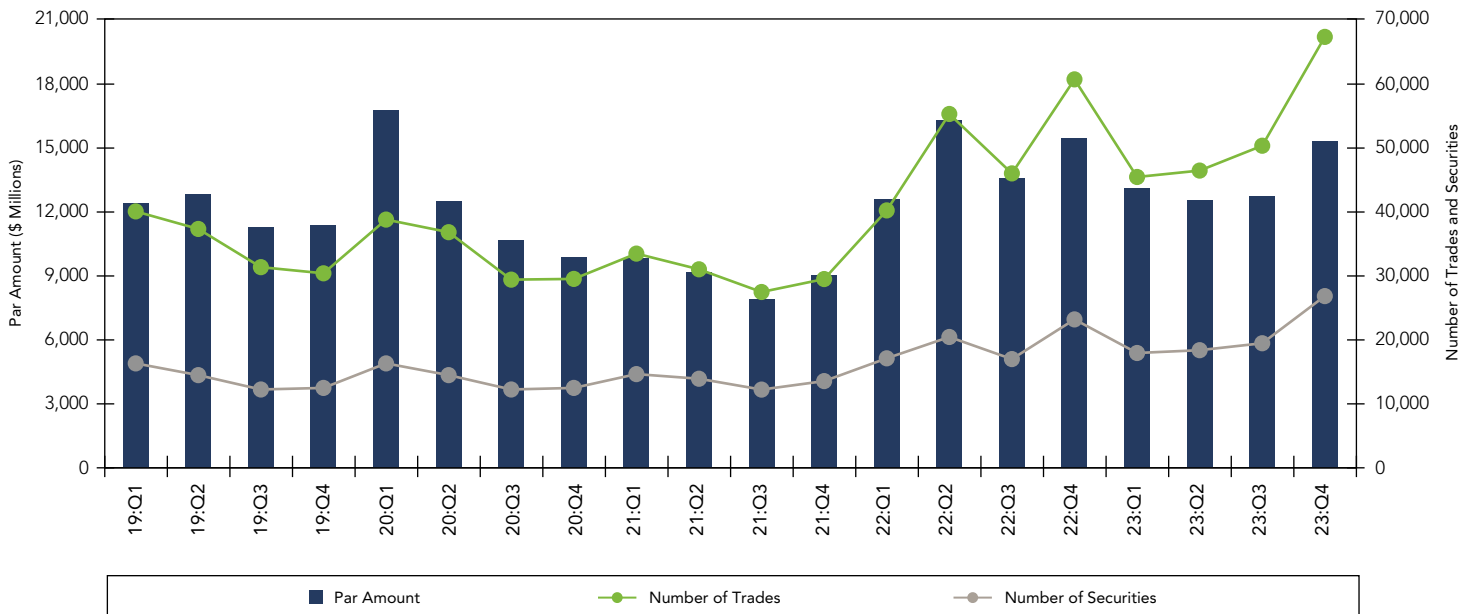
## Part Five

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# Overall Municipal Market Trading Activity, 2019–2023

### Average Daily Trading Volume, 2019–2023

By par amount, number of trades and number of unique securities

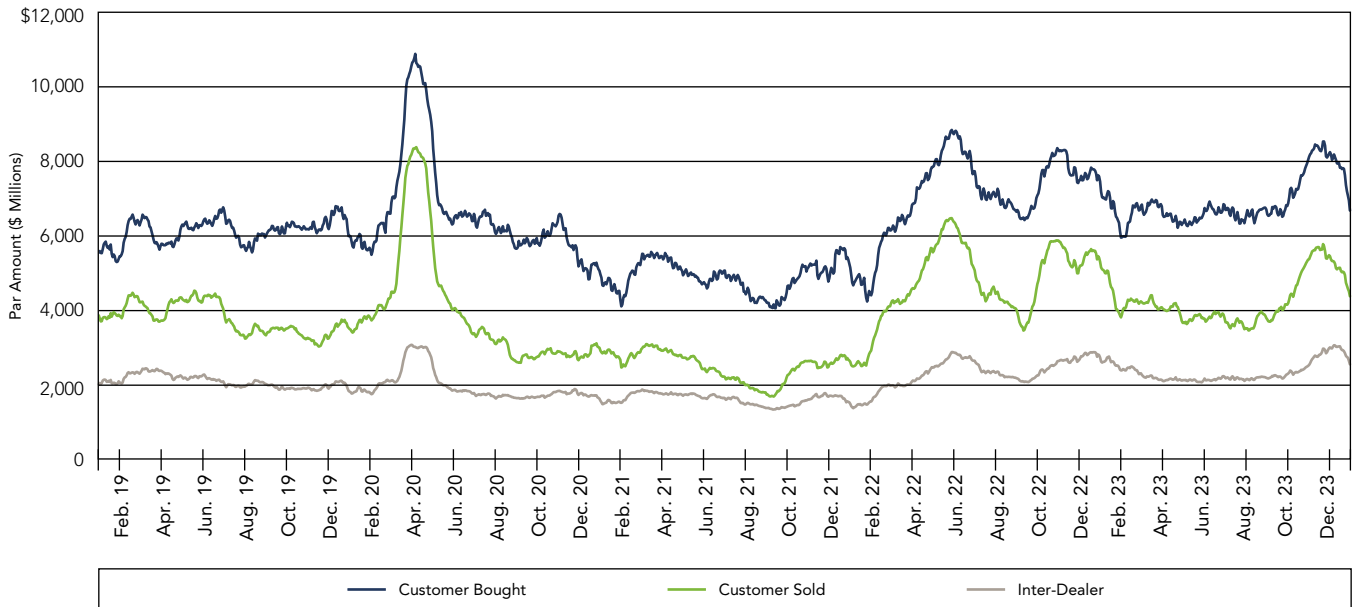


Quarter	Par Amount (\$ Millions)	Number of Trades	Number of Unique Securities
19:Q1	12,396.0	40,096	15,288
19:Q2	12,813.6	37,351	15,248
19:Q3	11,295.8	31,377	13,218
19:Q4	11,371.3	30,415	12,491
2019	11,960.7	34,737	14,042
20:Q1	16,751.5	38,816	16,328
20:Q2	12,491.4	36,845	14,493
20:Q3	10,653.9	29,424	12,248
20:Q4	9,878.9	29,539	12,494
2020	12,409.7	33,603	13,869
21:Q1	9,825.8	33,496	14,653
21:Q2	9,156.5	31,041	13,930
21:Q3	7,887.1	27,491	12,232
21:Q4	9,032.8	29,517	13,560
2021	8,964.7	30,347	13,580
21:Q1	12,591.8	40,250	17,123
21:Q2	16,282.5	55,329	20,459
21:Q3	13,598.1	46,037	17,003
21:Q4	15,441.8	60,740	23,207
2022	14,475.4	50,593	19,444
23:Q1	13,103.6	45,477	17,954
23:Q2	12,549.4	46,479	18,393
23:Q3	12,725.8	50,366	19,479
23:Q4	15,329.9	67,382	26,852
2023	13,432.0	52,477	20,689

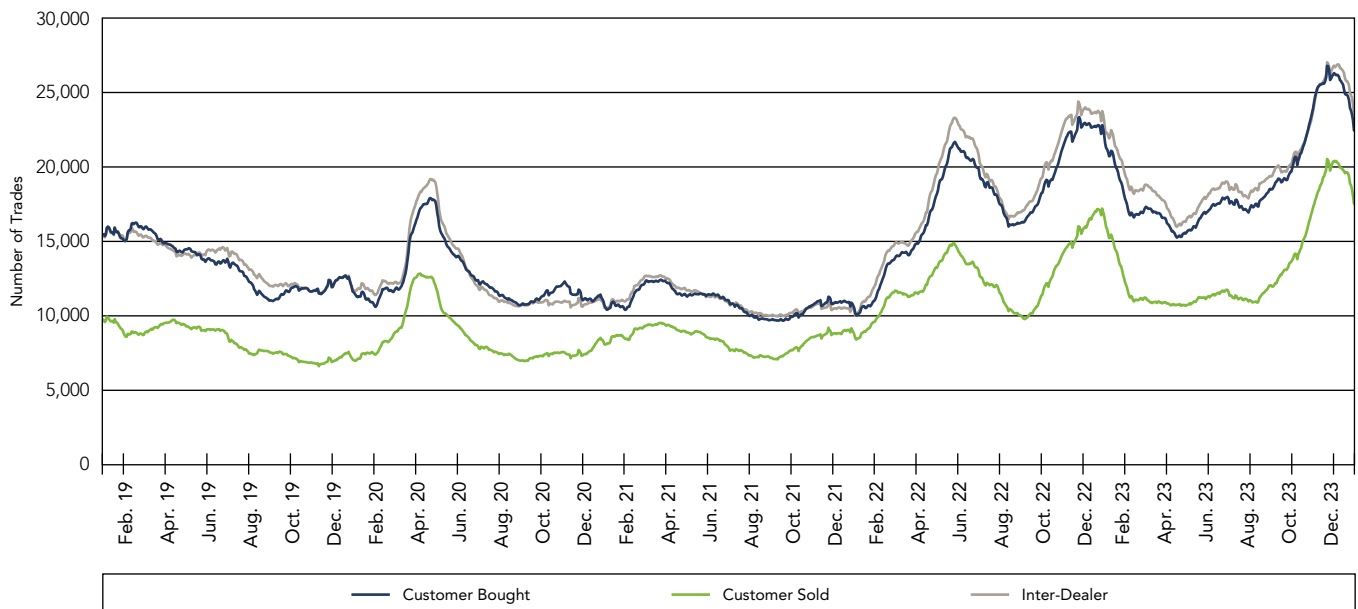
### Daily Trading Volume, 2019–2023

30-day trailing average by trade type

#### Par Amount



#### Number of Trades



### Trade Type and Size, 2019–2023

Average daily par amount in \$ millions

	2019	2020	2021	2022	2023	2023:Q1	2023:Q2	2023:Q3	2023:Q4
<b>All Trades</b>									
<b>Total</b>	<b>11,960.7</b>	<b>12,409.7</b>	<b>8,964.7</b>	<b>14,475.4</b>	<b>13,432.0</b>	<b>13,103.6</b>	<b>12,549.4</b>	<b>12,725.8</b>	<b>15,329.9</b>
0–\$25,000	253.3	244.9	228.2	383.4	396.2	343.0	352.9	387.4	500.2
\$25,001–\$50,000	275.1	252.1	226.0	419.0	435.3	370.2	378.4	414.9	575.8
\$50,001–\$75,000	114.7	110.8	105.0	191.9	196.6	162.2	164.4	180.9	277.8
\$75,001–\$100,000	250.6	226.4	188.0	345.6	359.2	307.1	309.3	340.1	478.8
\$100,001–\$500,000	1,194.2	1,153.8	962.0	1,429.9	1,480.0	1,319.3	1,323.0	1,370.0	1,902.7
\$500,001–\$1,000,000	812.5	844.4	685.2	837.4	861.7	845.0	810.4	794.0	996.2
\$1,000,001–\$2,000,000	961.7	1,033.2	813.2	1,071.9	1,029.7	992.0	998.0	969.6	1,158.0
More than \$2,000,000	8,098.5	8,544.1	5,757.2	9,796.2	8,673.3	8,764.8	8,213.0	8,269.0	9,440.5
<b>Customer Bought</b>									
<b>Total</b>	<b>6,141.3</b>	<b>6,546.2</b>	<b>4,890.0</b>	<b>7,225.4</b>	<b>6,871.6</b>	<b>6,659.8</b>	<b>6,603.3</b>	<b>6,615.9</b>	<b>7,599.6</b>
0–\$25,000	93.2	86.1	75.7	136.3	140.9	123.4	124.7	138.9	176.0
\$25,001–\$50,000	105.2	89.7	77.8	152.2	158.8	137.9	139.1	153.8	203.7
\$50,001–\$75,000	43.7	39.4	37.3	66.9	70.8	59.2	60.4	66.5	96.7
\$75,001–\$100,000	96.0	80.7	67.1	127.2	132.8	115.5	116.2	128.5	170.4
\$100,001–\$500,000	482.9	484.3	420.0	553.8	574.8	496.3	528.5	543.9	728.3
\$500,001–\$1,000,000	363.9	414.8	348.1	371.0	375.3	343.8	369.0	358.9	428.8
\$1,000,001–\$2,000,000	471.4	536.2	438.0	509.3	494.9	446.9	495.7	484.7	551.8
More than \$2,000,000	4,484.9	4,815.2	3,426.0	5,308.7	4,923.3	4,936.8	4,769.7	4,740.7	5,243.9
<b>Customer Sold</b>									
<b>Total</b>	<b>3,750.4</b>	<b>3,931.2</b>	<b>2,466.5</b>	<b>4,876.2</b>	<b>4,225.7</b>	<b>4,150.7</b>	<b>3,786.1</b>	<b>3,906.6</b>	<b>5,051.4</b>
0–\$25,000	58.0	61.5	65.2	93.0	98.0	80.4	85.2	93.3	132.7
\$25,001–\$50,000	58.7	63.0	62.4	98.2	101.0	77.9	84.1	92.6	148.8
\$50,001–\$75,000	26.3	29.9	30.5	54.2	53.2	39.6	42.2	47.1	83.7
\$75,001–\$100,000	57.4	60.5	52.1	80.6	81.3	64.5	68.2	72.0	120.0
\$100,001–\$500,000	273.9	281.0	232.1	377.7	380.7	326.7	322.4	331.9	539.9
\$500,001–\$1,000,000	204.0	204.0	154.2	238.8	245.1	240.2	222.1	216.0	301.5
\$1,000,001–\$2,000,000	264.5	275.5	198.2	348.8	323.2	315.8	305.1	292.4	379.1
More than \$2,000,000	2,807.6	2,955.9	1,671.9	3,584.9	2,943.2	3,005.6	2,656.9	2,761.2	3,345.6
<b>Inter-Dealer</b>									
<b>Total</b>	<b>2,069.0</b>	<b>1,932.2</b>	<b>1,608.2</b>	<b>2,373.7</b>	<b>2,334.7</b>	<b>2,293.1</b>	<b>2,160.0</b>	<b>2,203.3</b>	<b>2,678.9</b>
0–\$25,000	102.0	97.3	87.2	154.1	157.3	139.2	142.9	155.1	191.5
\$25,001–\$50,000	111.3	99.4	85.7	168.6	175.4	154.3	155.2	168.4	223.2
\$50,001–\$75,000	44.7	41.5	37.2	70.8	72.6	63.3	61.8	67.3	97.5
\$75,001–\$100,000	97.2	85.2	68.8	137.8	145.2	127.2	124.9	139.6	188.4
\$100,001–\$500,000	437.4	388.5	310.0	498.4	524.6	496.3	472.1	494.2	634.5
\$500,001–\$1,000,000	244.5	225.6	183.0	227.6	241.3	261.0	219.4	219.1	265.8
\$1,000,001–\$2,000,000	225.8	221.6	176.9	213.8	211.5	229.3	197.2	192.4	227.1
More than \$2,000,000	806.0	773.0	659.3	902.6	806.8	822.4	786.4	767.2	851.0

### Trade Type and Size, 2019–2023

Average daily number of trades

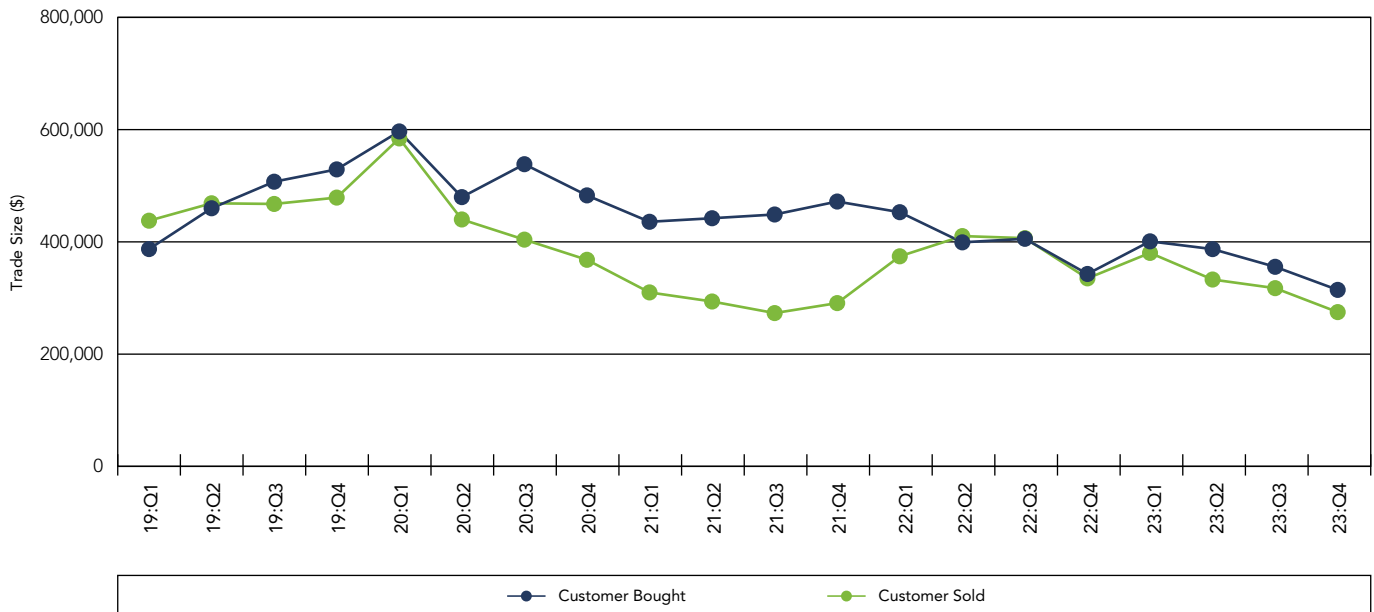
	2019	2020	2021	2022	2023	2023:Q1	2023:Q2	2023:Q3	2023:Q4
<b>All Trades</b>									
<b>Total</b>	<b>34,737</b>	<b>33,603</b>	<b>30,347</b>	<b>50,593</b>	<b>52,477</b>	<b>45,477</b>	<b>46,479</b>	<b>50,366</b>	<b>67,382</b>
0–\$25,000	16,412	16,161	15,266	24,899	26,140	22,720	23,418	25,635	32,688
\$25,001–\$50,000	6,533	6,029	5,452	10,090	10,449	8,859	9,081	9,951	13,858
\$50,001–\$75,000	1,723	1,668	1,583	2,905	2,973	2,447	2,484	2,736	4,206
\$75,001–\$100,000	2,584	2,341	1,952	3,589	3,727	3,180	3,203	3,525	4,982
\$100,001–\$500,000	4,802	4,611	3,927	6,133	6,334	5,494	5,559	5,841	8,417
\$500,001–\$1,000,000	1,029	1,051	860	1,058	1,094	1,069	1,023	1,011	1,273
\$1,000,001–\$2,000,000	639	679	539	710	684	656	662	643	772
More than \$2,000,000	1,016	1,063	768	1,209	1,077	1,052	1,049	1,023	1,184
<b>Customer Bought</b>									
<b>Total</b>	<b>13,206</b>	<b>12,462</b>	<b>10,890</b>	<b>18,355</b>	<b>19,142</b>	<b>16,620</b>	<b>17,069</b>	<b>18,619</b>	<b>24,186</b>
0–\$25,000	5,836	5,574	4,942	8,634	9,103	7,919	8,091	9,007	11,359
\$25,001–\$50,000	2,491	2,143	1,874	3,644	3,798	3,284	3,325	3,676	4,892
\$50,001–\$75,000	655	593	562	1,012	1,071	893	912	1,006	1,466
\$75,001–\$100,000	989	834	697	1,318	1,376	1,194	1,202	1,331	1,772
\$100,001–\$500,000	1,933	1,879	1,658	2,335	2,440	2,074	2,200	2,292	3,184
\$500,001–\$1,000,000	459	515	437	466	474	433	464	453	545
\$1,000,001–\$2,000,000	312	352	291	337	328	295	329	321	367
More than \$2,000,000	531	574	429	609	552	528	547	532	601
<b>Customer Sold</b>									
<b>Total</b>	<b>8,119</b>	<b>8,583</b>	<b>8,433</b>	<b>12,885</b>	<b>13,268</b>	<b>10,919</b>	<b>11,381</b>	<b>12,311</b>	<b>18,392</b>
0–\$25,000	3,866	4,064	4,393	6,171	6,586	5,502	5,767	6,317	8,729
\$25,001–\$50,000	1,405	1,513	1,515	2,415	2,477	1,904	2,059	2,275	3,655
\$50,001–\$75,000	394	448	458	821	806	598	637	714	1,267
\$75,001–\$100,000	591	625	542	845	851	672	711	754	1,260
\$100,001–\$500,000	1,099	1,154	986	1,654	1,644	1,354	1,365	1,433	2,413
\$500,001–\$1,000,000	254	251	191	301	310	301	278	274	385
\$1,000,001–\$2,000,000	174	180	130	231	214	208	202	193	253
More than \$2,000,000	336	348	218	446	381	379	361	352	430
<b>Inter-Dealer</b>									
<b>Total</b>	<b>13,412</b>	<b>12,557</b>	<b>11,023</b>	<b>19,354</b>	<b>20,068</b>	<b>17,937</b>	<b>18,029</b>	<b>19,436</b>	<b>24,803</b>
0–\$25,000	6,710	6,523	5,932	10,094	10,451	9,299	9,561	10,310	12,600
\$25,001–\$50,000	2,637	2,373	2,063	4,031	4,174	3,671	3,697	4,000	5,310
\$50,001–\$75,000	674	627	563	1,071	1,096	956	935	1,017	1,474
\$75,001–\$100,000	1,004	882	713	1,426	1,500	1,314	1,290	1,441	1,950
\$100,001–\$500,000	1,770	1,578	1,283	2,144	2,250	2,065	1,994	2,116	2,820
\$500,001–\$1,000,000	316	285	232	291	310	334	281	284	343
\$1,000,001–\$2,000,000	153	147	118	143	142	153	132	129	153
More than \$2,000,000	148	142	120	154	144	144	141	139	153

### Trade Type and Size, 2019–2023

Average daily number of unique securities

	2019	2020	2021	2022	2023	2023:Q1	2023:Q2	2023:Q3	2023:Q4
<b>All Trades</b>									
<b>Total</b>	<b>14,042</b>	<b>13,869</b>	<b>13,580</b>	<b>19,444</b>	<b>20,689</b>	<b>17,954</b>	<b>18,393</b>	<b>19,479</b>	<b>26,852</b>
0–\$25,000	7,151	7,171	7,253	10,447	11,272	9,815	10,128	10,879	14,224
\$25,001–\$50,000	3,119	2,937	2,776	4,568	4,817	4,040	4,152	4,487	6,566
\$50,001–\$75,000	937	915	888	1,539	1,608	1,302	1,336	1,454	2,332
\$75,001–\$100,000	1,347	1,219	1,048	1,709	1,802	1,516	1,547	1,662	2,476
\$100,001–\$500,000	2,441	2,318	2,052	2,996	3,155	2,683	2,737	2,851	4,336
\$500,001–\$1,000,000	617	585	485	606	631	604	594	584	741
\$1,000,001–\$2,000,000	409	399	318	429	420	396	413	397	474
More than \$2,000,000	584	554	409	642	595	571	589	567	651
<b>Customer Bought</b>									
<b>Total</b>	<b>9,207</b>	<b>9,048</b>	<b>8,560</b>	<b>12,968</b>	<b>13,755</b>	<b>11,773</b>	<b>12,097</b>	<b>13,190</b>	<b>17,903</b>
0–\$25,000	4,636	4,539	4,337	6,779	7,369	6,310	6,508	7,251	9,376
\$25,001–\$50,000	2,076	1,859	1,706	2,996	3,190	2,689	2,762	3,059	4,234
\$50,001–\$75,000	597	559	539	948	1,004	828	848	940	1,394
\$75,001–\$100,000	859	740	641	1,121	1,179	1,003	1,022	1,126	1,558
\$100,001–\$500,000	1,526	1,493	1,347	1,924	1,996	1,692	1,760	1,840	2,682
\$500,001–\$1,000,000	373	396	335	388	385	362	369	362	447
\$1,000,001–\$2,000,000	257	277	226	289	273	252	271	261	309
More than \$2,000,000	389	408	297	465	409	398	402	388	449
<b>Customer Sold</b>									
<b>Total</b>	<b>7,056</b>	<b>7,672</b>	<b>7,733</b>	<b>11,533</b>	<b>11,900</b>	<b>9,897</b>	<b>10,297</b>	<b>11,127</b>	<b>16,221</b>
0–\$25,000	3,445	3,797	4,143	5,750	6,159	5,155	5,415	5,931	8,106
\$25,001–\$50,000	1,338	1,458	1,472	2,332	2,393	1,845	1,995	2,199	3,518
\$50,001–\$75,000	382	440	451	808	794	590	629	703	1,246
\$75,001–\$100,000	570	606	531	824	828	653	692	734	1,228
\$100,001–\$500,000	1,032	1,088	948	1,596	1,579	1,301	1,307	1,381	2,319
\$500,001–\$1,000,000	244	239	184	294	301	293	270	266	376
\$1,000,001–\$2,000,000	167	171	126	225	208	202	196	188	246
More than \$2,000,000	297	305	199	402	345	343	329	319	389
<b>Inter-Dealer</b>									
<b>Total</b>	<b>7,879</b>	<b>7,473</b>	<b>7,103</b>	<b>11,018</b>	<b>11,403</b>	<b>10,237</b>	<b>10,263</b>	<b>10,826</b>	<b>14,251</b>
0–\$25,000	4,317	4,214	4,100	6,328	6,542	5,875	5,993	6,355	7,925
\$25,001–\$50,000	1,729	1,562	1,426	2,587	2,668	2,343	2,351	2,501	3,469
\$50,001–\$75,000	469	435	401	752	762	664	646	691	1,042
\$75,001–\$100,000	659	577	480	892	937	815	800	883	1,245
\$100,001–\$500,000	1,113	991	838	1,326	1,389	1,256	1,218	1,284	1,792
\$500,001–\$1,000,000	208	188	154	195	206	216	188	189	230
\$1,000,001–\$2,000,000	104	100	81	100	98	102	93	91	107
More than \$2,000,000	102	96	81	106	100	98	97	96	108

Average Daily Trade Size, 2019–2023  
By customer trade



Quarter	Customer Bought (\$)	Customer Sold (\$)
19:Q1	386,948	437,483
19:Q2	459,644	468,504
19:Q3	506,954	467,321
19:Q4	528,878	478,646
<b>2019</b>	<b>465,054</b>	<b>461,939</b>
20:Q1	596,512	584,055
20:Q2	479,497	439,682
20:Q3	538,134	403,755
20:Q4	482,574	367,821
<b>2020</b>	<b>525,276</b>	<b>458,012</b>
21:Q1	435,553	309,724
21:Q2	441,866	293,541
21:Q3	448,529	272,908
21:Q4	471,612	290,684
<b>2021</b>	<b>449,038</b>	<b>292,471</b>
22:Q1	452,643	374,051
22:Q2	398,916	410,070
22:Q3	405,241	406,403
22:Q4	342,583	334,759
<b>2022</b>	<b>393,654</b>	<b>378,454</b>
23:Q1	400,708	380,119
23:Q2	386,862	332,682
23:Q3	355,338	317,317
23:Q4	314,218	274,646
<b>2023</b>	<b>358,986</b>	<b>318,497</b>



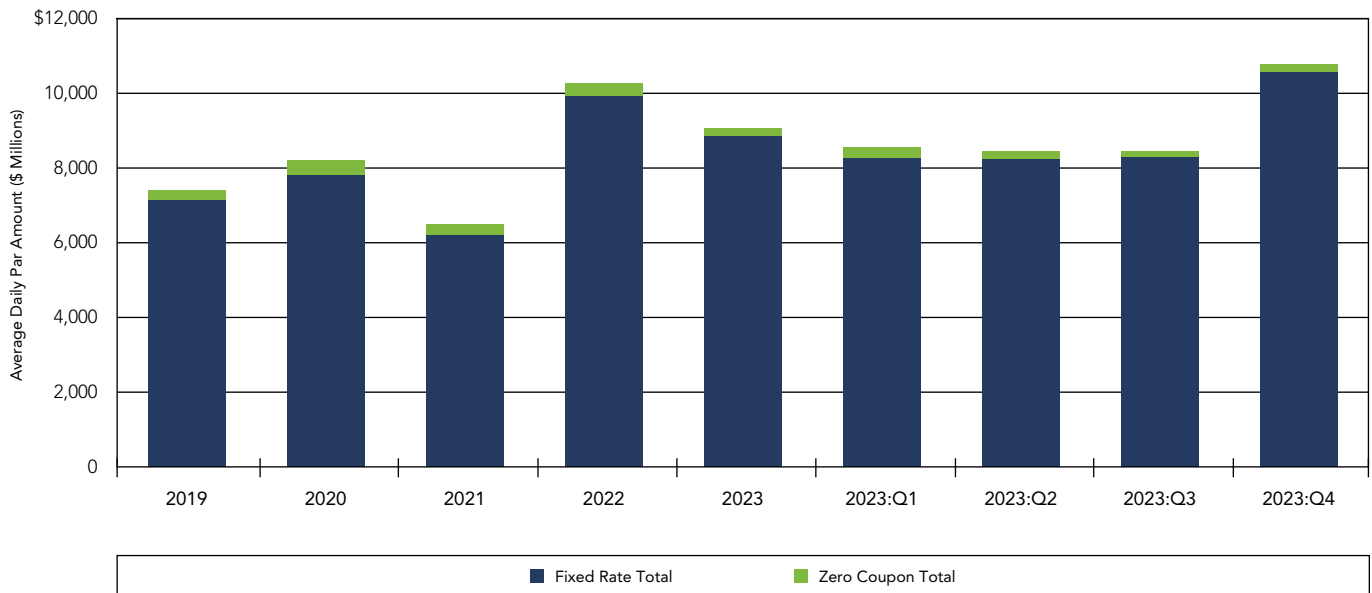
## Part Six

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# Municipal Fixed Rate Securities—Par Amount Traded and Number of Trades, 2019–2023

### Transaction Summary—Fixed Rate Securities, 2019–2023

Average daily par amount in \$ millions



	2019	2020	2021	2022	2023
<b>Fixed Rate Total</b>	<b>7,134.8</b>	<b>7,793.5</b>	<b>6,200.9</b>	<b>9,905.8</b>	<b>8,836.4</b>
0–\$25,000	245.1	238.0	222.4	377.2	389.4
\$25,001–\$50,000	265.2	243.6	219.1	411.2	426.8
\$50,001–\$75,000	109.7	106.5	101.5	188.1	192.2
\$75,001–\$100,000	225.5	205.3	176.5	330.9	344.4
\$100,001–\$500,000	1,052.0	1,032.4	900.5	1,346.6	1,396.8
\$500,001–\$1,000,000	673.8	724.0	622.7	752.9	776.5
\$1,000,001–\$2,000,000	751.3	840.9	704.5	926.3	887.5
More than \$2,000,000	3,812.1	4,402.9	3,253.8	5,572.5	4,422.8

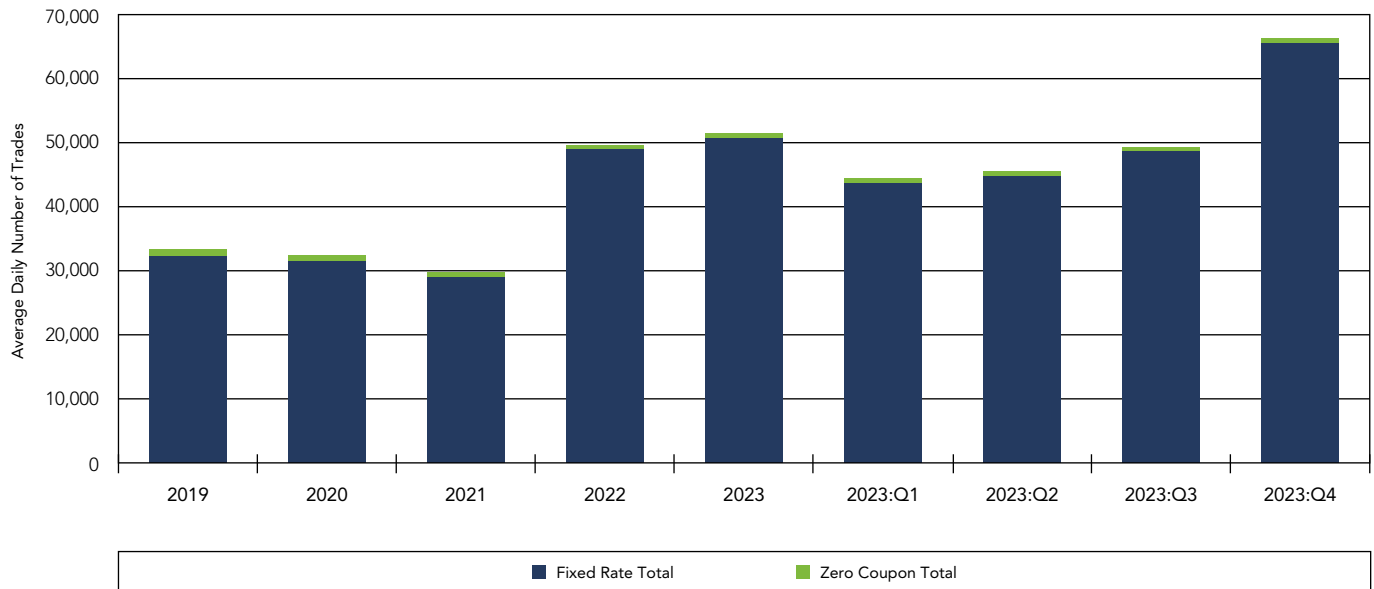
	2023:Q1	2023:Q2	2023:Q3	2023:Q4
<b>Fixed Rate Total</b>	<b>8,261.8</b>	<b>8,218.5</b>	<b>8,286.7</b>	<b>10,559.7</b>
0–\$25,000	336.7	346.7	380.3	492.3
\$25,001–\$50,000	362.8	371.0	406.2	565.2
\$50,001–\$75,000	158.2	160.7	176.5	272.4
\$75,001–\$100,000	291.2	295.1	325.6	464.1
\$100,001–\$500,000	1,224.3	1,242.8	1,294.6	1,820.4
\$500,001–\$1,000,000	749.0	728.0	715.1	912.6
\$1,000,001–\$2,000,000	844.2	862.9	833.8	1,008.1
More than \$2,000,000	4,295.5	4,211.2	4,154.5	5,024.5

	2019	2020	2021	2022	2023
<b>Zero Coupon Total</b>	<b>282.3</b>	<b>420.1</b>	<b>290.4</b>	<b>364.3</b>	<b>228.1</b>
0–\$25,000	7.1	6.0	5.0	4.8	4.9
\$25,001–\$50,000	8.4	7.3	5.8	5.9	6.1
\$50,001–\$75,000	4.1	3.5	2.7	2.7	2.9
\$75,001–\$100,000	7.0	6.1	4.7	5.0	5.4
\$100,001–\$500,000	27.4	24.6	16.8	18.4	19.1
\$500,001–\$1,000,000	14.6	14.1	9.2	10.9	9.8
\$1,000,001–\$2,000,000	15.7	14.7	10.5	12.4	10.5
More than \$2,000,000	198.0	343.8	235.7	304.2	169.4

	2023:Q1	2023:Q2	2023:Q3	2023:Q4
<b>Zero Coupon Total</b>	<b>290.3</b>	<b>222.8</b>	<b>165.3</b>	<b>235.2</b>
0–\$25,000	4.6	4.5	4.9	5.4
\$25,001–\$50,000	5.5	5.4	6.2	7.4
\$50,001–\$75,000	2.7	2.5	3.1	3.5
\$75,001–\$100,000	5.2	5.0	5.8	5.8
\$100,001–\$500,000	18.9	16.3	19.7	21.3
\$500,001–\$1,000,000	12.2	8.2	9.4	9.5
\$1,000,001–\$2,000,000	13.2	9.4	8.0	11.3
More than \$2,000,000	227.9	171.5	108.2	171.0

### Transaction Summary—Fixed Rate Securities, 2019–2023

Average daily number of trades



	2019	2020	2021	2022	2023
<b>Fixed Rate Total</b>	<b>32,286</b>	<b>31,538</b>	<b>28,985</b>	<b>48,878</b>	<b>50,686</b>
0–\$25,000	15,761	15,668	14,841	24,421	25,605
\$25,001–\$50,000	6,293	5,824	5,286	9,902	10,243
\$50,001–\$75,000	1,647	1,603	1,531	2,847	2,906
\$75,001–\$100,000	2,329	2,127	1,834	3,440	3,575
\$100,001–\$500,000	4,275	4,166	3,697	5,827	6,027
\$500,001–\$1,000,000	856	900	781	953	989
\$1,000,001–\$2,000,000	500	552	467	616	591
More than \$2,000,000	623	698	547	872	749

	2023:Q1	2023:Q2	2023:Q3	2023:Q4
<b>Fixed Rate Total</b>	<b>43,667</b>	<b>44,814</b>	<b>48,628</b>	<b>65,432</b>
0–\$25,000	22,198	22,931	25,105	32,090
\$25,001–\$50,000	8,682	8,902	9,742	13,603
\$50,001–\$75,000	2,388	2,428	2,669	4,125
\$75,001–\$100,000	3,017	3,058	3,377	4,832
\$100,001–\$500,000	5,152	5,266	5,560	8,105
\$500,001–\$1,000,000	950	920	914	1,169
\$1,000,001–\$2,000,000	560	575	556	674
More than \$2,000,000	720	736	705	835

	2019	2020	2021	2022	2023
<b>Zero Coupon Total</b>	<b>1,099</b>	<b>884</b>	<b>710</b>	<b>727</b>	<b>762</b>
0–\$25,000	590	441	375	368	392
\$25,001–\$50,000	205	176	141	143	149
\$50,001–\$75,000	63	53	41	41	45
\$75,001–\$100,000	73	64	49	52	57
\$100,001–\$500,000	120	103	73	79	83
\$500,001–\$1,000,000	19	18	12	14	12
\$1,000,001–\$2,000,000	11	10	7	8	7
More than \$2,000,000	17	20	12	21	17

	2023:Q1	2023:Q2	2023:Q3	2023:Q4
<b>Zero Coupon Total</b>	<b>747</b>	<b>694</b>	<b>756</b>	<b>849</b>
0–\$25,000	393	366	382	425
\$25,001–\$50,000	132	132	151	180
\$50,001–\$75,000	41	38	47	53
\$75,001–\$100,000	54	52	60	60
\$100,001–\$500,000	81	73	85	96
\$500,001–\$1,000,000	15	10	12	12
\$1,000,001–\$2,000,000	9	6	5	8
More than \$2,000,000	22	18	13	16

## Source of Repayment and Trade Size, 2019–2023

Average daily par amount in \$ millions

	2019	2020	2021	2022	2023	2023:Q1	2023:Q2	2023:Q3	2023:Q4
<b>Fixed Rate</b>									
<b>Total</b>	<b>7,133.8</b>	<b>7,793.0</b>	<b>6,200.9</b>	<b>9,905.8</b>	<b>8,836.4</b>	<b>8,261.8</b>	<b>8,218.5</b>	<b>8,286.7</b>	<b>10,559.7</b>
General Obligation	2,627.2	2,707.9	2,160.0	3,081.6	3,051.1	2,753.1	3,005.8	2,984.9	3,455.1
Revenue	4,294.0	4,860.6	3,841.0	6,522.1	5,485.9	5,250.5	4,934.2	4,976.2	6,770.3
Double Barrel	212.5	224.5	199.9	302.1	299.4	258.2	278.5	325.6	334.3
<b>Zero Coupon</b>									
<b>Total</b>	<b>282.3</b>	<b>420.1</b>	<b>384.5</b>	<b>364.3</b>	<b>228.1</b>	<b>290.3</b>	<b>222.8</b>	<b>165.3</b>	<b>235.2</b>
General Obligation	76.7	75.5	142.8	81.5	69.6	78.1	58.6	68.9	72.8
Revenue	202.3	342.5	239.5	278.5	156.4	209.9	163.0	94.7	158.9
Double Barrel	3.2	2.1	2.2	4.3	2.2	2.3	1.3	1.6	3.5

Average daily number of trades

	2019	2020	2021	2022	2023	2023:Q1	2023:Q2	2023:Q3	2023:Q4
<b>Fixed Rate</b>									
<b>Total</b>	<b>32,285</b>	<b>31,538</b>	<b>28,985</b>	<b>48,878</b>	<b>50,686</b>	<b>43,667</b>	<b>44,814</b>	<b>48,628</b>	<b>65,432</b>
General Obligation	12,470	11,395	10,967	18,164	19,442	16,341	17,189	19,113	25,041
Revenue	18,767	19,109	17,000	28,929	29,257	25,615	25,950	27,531	37,820
Double Barrel	1,048	1,034	1,018	1,784	1,987	1,711	1,675	1,984	2,571
<b>Zero Coupon</b>									
<b>Total</b>	<b>1,099</b>	<b>884</b>	<b>402</b>	<b>727</b>	<b>762</b>	<b>747</b>	<b>694</b>	<b>756</b>	<b>849</b>
General Obligation	487	446	63	413	409	377	368	422	467
Revenue	592	423	326	298	339	359	312	319	365
Double Barrel	20	16	13	15	14	12	15	14	17

## Tax Status and Trade Size, 2019–2023

Average daily par amount in \$ millions

	2019	2020	2021	2022	2023	2023:Q1	2023:Q2	2023:Q3	2023:Q4
<b>Fixed Rate Total</b>	<b>7,133.9</b>	<b>7,793.4</b>	<b>6,200.9</b>	<b>9,905.8</b>	<b>8,836.4</b>	<b>8,261.8</b>	<b>8,218.5</b>	<b>8,286.7</b>	<b>10,559.7</b>
Tax Exempt	5,898.2	6,010.3	4,652.3	8,275.1	7,606.7	6,871.0	7,081.6	7,239.1	9,215.0
Taxable	979.5	1,554.4	1,378.3	1,132.9	854.1	1,038.8	863.9	743.3	773.5
AMT	256.3	228.7	170.3	497.8	375.6	352.0	273.0	304.4	571.1
<b>Zero Coupon Total</b>	<b>282.3</b>	<b>420.1</b>	<b>290.4</b>	<b>364.2</b>	<b>228.1</b>	<b>290.3</b>	<b>222.8</b>	<b>165.3</b>	<b>235.2</b>
Tax Exempt	262.6	396.8	269.6	341.2	219.0	281.8	209.6	157.9	227.5
Taxable	19.7	23.1	20.6	23.0	9.2	8.4	13.2	7.3	7.7
AMT	<0.1	0.2	0.1	<0.1	<0.1	–	<0.1	–	–

Average daily number of trades

	2019	2020	2021	2022	2023	2023:Q1	2023:Q2	2023:Q3	2023:Q4
<b>Fixed Rate Total</b>	<b>32,285</b>	<b>31,538</b>	<b>28,985</b>	<b>48,878</b>	<b>50,686</b>	<b>43,667</b>	<b>44,814</b>	<b>48,628</b>	<b>65,432</b>
Tax Exempt	29,538	28,535	26,221	45,449	47,129	40,376	41,504	45,282	61,156.5
Taxable	2,337	2,563	2,424	2,566	2,625	2,404	2,510	2,563	3,016.5
AMT	410	440	340	863	933	887	800	783	1,259.3
<b>Zero Coupon Total</b>	<b>1,099</b>	<b>884</b>	<b>710</b>	<b>727</b>	<b>762</b>	<b>747</b>	<b>694</b>	<b>756</b>	<b>849</b>
Tax Exempt	1,018	800	639	674	715	700	658	711	790.3
Taxable	81	84	71	53	47	47	36	45	59.0
AMT	<1	<1	<1	<1	<1	–	<1	–	–

### Sector—Fixed Rate Securities, 2019–2023

Average daily par amount in \$ millions

	2019	2020	2021	2022	2023	2023:Q1	2023:Q2	2023:Q3	2023:Q4
<b>Fixed Rate Total</b>	<b>7,134.8</b>	<b>7,793.5</b>	<b>6,200.9</b>	<b>9,905.8</b>	<b>8,836.4</b>	<b>8,261.8</b>	<b>8,218.5</b>	<b>8,286.7</b>	<b>10,559.7</b>
Education	1,548.3	1,683.8	1,373.8	1,968.1	2,039.6	1,884.0	1,953.6	2,073.1	2,243.8
Health	459.1	511.5	349.0	805.8	632.1	627.4	569.8	582.4	747.7
Housing	185.3	190.0	235.6	232.8	327.4	300.1	299.3	317.5	391.8
Tax-Revenue	835.7	908.7	724.1	1,374.4	1,024.7	1,038.9	832.7	967.5	1,256.8
Transportation	831.5	875.6	658.9	1,271.0	1,035.0	934.5	821.4	994.2	1,384.9
Utility	828.8	911.2	735.6	1,234.6	1,200.5	1,113.6	1,132.5	1,098.1	1,455.4
Various Purpose	1,157.0	1,305.1	1,035.3	1,536.2	1,313.8	1,205.4	1,365.1	1,112.5	1,571.3
Other Sectors	1,289.1	1,407.5	1,088.6	1,482.9	1,263.4	1,157.9	1,244.2	1,141.4	1,508.2
<b>Zero Coupon Total</b>	<b>282.3</b>	<b>420.1</b>	<b>290.4</b>	<b>364.3</b>	<b>228.1</b>	<b>290.3</b>	<b>222.8</b>	<b>165.3</b>	<b>235.2</b>
Education	72.1	74.3	52.6	74.9	67.9	76.7	55.7	68.8	70.3
Health	5.3	4.5	2.7	3.4	2.7	1.9	3.6	2.1	3.1
Housing	0.1	0.5	0.1	4.6	0.3	0.3	0.1	0.4	0.4
Tax-Revenue	102.8	200.0	63.1	100.3	57.9	74.6	64.9	34.6	57.7
Transportation	28.0	19.9	12.6	41.2	31.6	48.3	29.2	17.6	31.6
Utility	3.6	2.6	2.2	2.8	2.4	1.4	1.6	3.3	3.2
Various Purpose	8.3	3.7	8.5	12.8	6.2	10.7	4.8	5.3	4.1
Other Sectors	62.1	114.6	148.6	124.2	59.1	76.4	62.8	33.1	64.6

Average daily number of trades

	2019	2020	2021	2022	2023	2023:Q1	2023:Q2	2023:Q3	2023:Q4
<b>Fixed Rate Total</b>	<b>32,286</b>	<b>31,538</b>	<b>28,985</b>	<b>48,878</b>	<b>50,686</b>	<b>43,667</b>	<b>44,814</b>	<b>48,628</b>	<b>65,432</b>
Education	8,381	7,974	7,568	12,549	13,667	11,737	12,095	13,355	17,426
Health	2,251	2,242	1,765	3,458	3,375	3,133	3,130	3,014	4,216
Housing	811	717	736	1,171	1,718	1,384	1,535	1,708	2,238
Tax-Revenue	3,301	5,812	3,015	5,253	4,906	4,391	4,160	4,701	6,352
Transportation	2,643	3,294	2,438	4,516	4,507	3,893	3,909	4,273	5,933
Utility	4,274	3,156	4,058	6,783	7,120	6,161	6,135	6,869	9,283
Various Purpose	4,271	4,110	4,146	7,261	7,150	5,913	6,397	6,836	9,420
Other Sectors	6,353	4,235	5,258	7,887	8,244	7,055	7,454	7,871	10,565
<b>Zero Coupon Total</b>	<b>1,099</b>	<b>884</b>	<b>710</b>	<b>727</b>	<b>762</b>	<b>747</b>	<b>694</b>	<b>756</b>	<b>849</b>
Education	453	416	348	369	377	339	337	397	432
Health	23	20	18	11	10	10	8	9	10
Housing	1	1	1	1	1	0	1	2	1
Tax-Revenue	317	86	124	100	101	99	97	98	112
Transportation	109	161	79	92	121	142	112	107	123
Utility	56	109	40	35	36	32	34	36	42
Various Purpose	52	48	34	56	52	60	46	47	57
Other Sectors	88	43	66	63	64	66	58	60	72

## Remaining Maturity—Fixed Rate Securities, 2019–2023

Average daily par amount in \$ millions

	2019	2020	2021	2022	2023	2023:Q1	2023:Q2	2023:Q3	2023:Q4
<b>Fixed Rate Total</b>	<b>7,134.8</b>	<b>7,793.5</b>	<b>6,200.9</b>	<b>9,905.8</b>	<b>8,836.4</b>	<b>8,261.8</b>	<b>8,218.5</b>	<b>8,286.7</b>	<b>10,559.7</b>
0–9 Months	317.4	354.3	253.3	384.0	327.5	322.7	374.2	244.7	368.9
>9 Months–2 Years	502.2	491.9	399.5	574.2	535.0	422.8	555.8	569.6	590.3
>2 Years–5 Years	754.0	835.3	693.4	1,142.8	1,000.8	890.2	958.1	916.3	1,236.0
>5 Years–10 Years	1,347.4	1,383.5	1,199.2	1,862.9	1,716.4	1,535.1	1,570.6	1,613.8	2,140.7
>10 Years–15 Years	1,141.1	1,302.7	1,068.8	1,446.3	1,371.4	1,264.2	1,317.3	1,249.3	1,652.2
>15 Years–20 Years	1,025.8	1,152.3	875.2	1,331.6	1,241.4	1,191.0	1,143.0	1,159.0	1,470.2
>20 Years–30 Years	1,653.1	1,816.5	1,357.3	2,651.4	2,230.5	2,197.9	1,866.4	2,172.9	2,678.6
More than 30 Years	388.6	453.4	345.6	510.4	412.8	436.9	432.3	360.6	422.2
Unavailable	5.3	3.7	8.6	2.2	0.7	1.0	0.8	0.6	0.5
<b>Zero Coupon Total</b>	<b>282.3</b>	<b>420.1</b>	<b>290.4</b>	<b>364.2</b>	<b>228.1</b>	<b>290.3</b>	<b>222.8</b>	<b>165.3</b>	<b>235.2</b>
0–9 Months	5.0	5.2	3.1	9.4	7.4	7.2	8.9	6.2	7.4
>9 Months–2 Years	4.4	5.7	5.9	10.6	8.8	8.4	4.6	11.5	10.8
>2 Years–5 Years	12.6	15.7	10.1	22.3	14.4	13.1	11.7	14.0	18.6
>5 Years–10 Years	30.2	23.2	19.1	27.9	30.2	36.2	26.7	21.2	36.6
>10 Years–15 Years	34.6	27.1	20.2	30.1	24.1	28.1	22.4	20.8	25.2
>15 Years–20 Years	18.0	22.3	13.8	29.6	18.6	18.4	15.4	21.2	19.3
>20 Years–30 Years	93.5	132.3	50.4	103.9	66.6	92.4	71.0	43.7	59.7
More than 30 Years	80.8	188.6	167.6	130.4	58.0	86.6	62.1	26.5	57.5
Unavailable	3.2	0.1	0.2	<0.1	<0.1	–	<0.1	0.1	<0.1

## Average daily number of trades

	2019	2020	2021	2022	2023	2023:Q1	2023:Q2	2023:Q3	2023:Q4
<b>Fixed Rate Total</b>	<b>32,286</b>	<b>31,538</b>	<b>28,985</b>	<b>48,878</b>	<b>50,686</b>	<b>43,667</b>	<b>44,814</b>	<b>48,628</b>	<b>65,432</b>
0–9 Months	1,526	1,608	1,542	2,128	2,395	2,135	2,698	1,897	2,852
>9 Months–2 Years	2,271	2,490	2,296	3,838	4,125	3,329	3,819	4,168	5,165
>2 Years–5 Years	4,854	5,263	4,964	8,518	9,061	7,483	8,109	8,624	11,989
>5 Years–10 Years	7,532	7,649	7,685	12,986	13,100	10,734	10,788	12,510	18,295
>10 Years–15 Years	5,707	5,521	5,151	8,676	8,242	7,333	6,886	7,783	10,930
>15 Years–20 Years	4,380	3,926	3,235	5,308	5,503	4,924	4,755	5,518	6,795
>20 Years–30 Years	5,254	4,479	3,631	6,644	7,327	6,828	6,766	7,293	8,404
More than 30 Years	737	587	452	772	926	892	990	829	995
Unavailable	25	16	30	8	6	9	3	5	8
<b>Zero Coupon Total</b>	<b>1,099</b>	<b>884</b>	<b>710</b>	<b>726</b>	<b>762</b>	<b>747</b>	<b>694</b>	<b>756</b>	<b>849</b>
0–9 Months	42	40	34	39	44	36	48	35	56
>9 Months–2 Years	62	75	69	72	79	84	66	78	86
>2 Years–5 Years	162	171	142	149	141	132	123	140	168
>5 Years–10 Years	278	232	195	190	204	188	175	212	240
>10 Years–15 Years	238	154	118	126	114	117	107	115	118
>15 Years–20 Years	102	92	67	71	77	69	68	88	84
>20 Years–30 Years	148	89	67	68	86	85	86	82	91
More than 30 Years	64	30	16	12	17	36	21	5	8
Unavailable	2	1	1	<1	<1	–	<1	<1	<1

## Part Seven

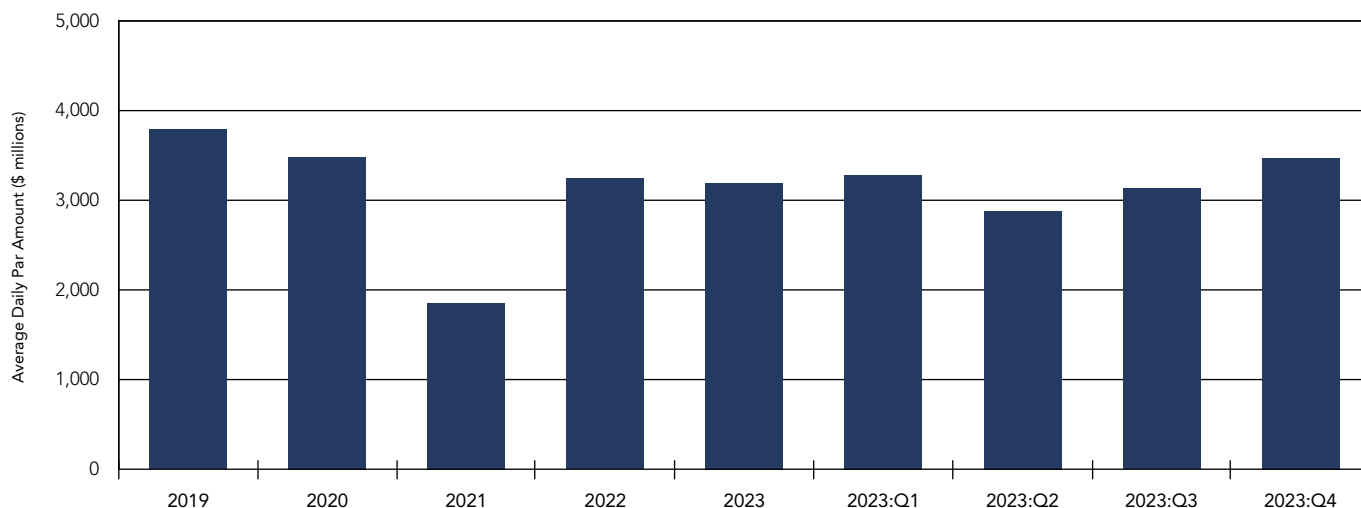
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# Municipal Variable Rate Securities—Par Amount Traded and Number of Trades, 2019–2023



### Transaction Summary—Variable Rate Securities, 2019–2023

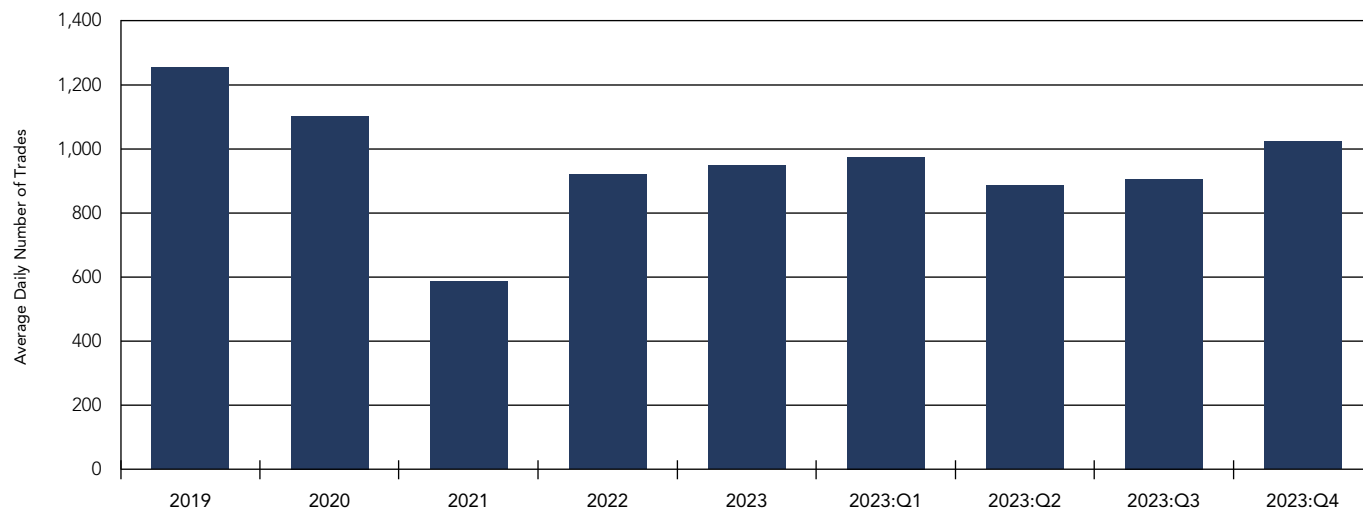
Average daily par amount in \$ millions



	2019	2020	2021	2022	2023	2023:Q1	2023:Q2	2023:Q3	2023:Q4
<b>Total</b>	<b>3,791.2</b>	<b>3,482.3</b>	<b>1,853.0</b>	<b>3,242.7</b>	<b>3,189.3</b>	<b>3,280.8</b>	<b>2,872.1</b>	<b>3,132.8</b>	<b>3,468.1</b>
0–\$25,000	1.0	0.9	0.8	1.4	1.8	1.4	1.5	2.0	2.2
\$25,001–\$50,000	1.5	1.2	1.0	1.8	2.2	1.7	1.8	2.3	2.9
\$50,001–\$75,000	0.8	0.8	0.7	1.1	1.3	1.2	1.2	1.3	1.8
\$75,001–\$100,000	17.5	14.6	6.6	9.4	9.1	10.5	8.9	8.5	8.7
\$100,001–\$500,000	109.5	93.5	42.3	62.8	61.8	73.5	61.6	53.6	58.6
\$500,001–\$1,000,000	116.3	101.2	48.9	70.4	72.3	80.8	70.9	65.8	72.0
\$1,000,001–\$2,000,000	180.5	167.3	88.0	125.9	125.5	127.8	118.9	121.2	134.2
More than \$2,000,000	3,364.0	3,102.8	1,664.6	2,969.8	2,915.3	2,984.0	2,607.4	2,878.2	3,187.8

### Transaction Summary—Variable Rate Securities, 2019–2023

Average daily number of trades



	2019	2020	2021	2022	2023	2023:Q1	2023:Q2	2023:Q3	2023:Q4
<b>Variable Rate Total</b>	<b>1,255</b>	<b>1,103</b>	<b>586</b>	<b>920</b>	<b>948</b>	<b>975</b>	<b>886</b>	<b>907</b>	<b>1,024</b>
0–\$25,000	58	51	49	107	130	116	109	137	160
\$25,001–\$50,000	33	28	24	43	53	40	44	55	71
\$50,001–\$75,000	12	11	11	16	20	17	17	19	27
\$75,001–\$100,000	176	147	67	94	92	105	90	86	88
\$100,001–\$500,000	386	330	149	220	215	252	213	188	207
\$500,001–\$1,000,000	145	127	61	87	90	100	88	81	90
\$1,000,001–\$2,000,000	119	111	58	82	81	83	77	78	87
More than \$2,000,000	326	300	167	270	267	262	248	263	294

Variable Rate Demand Obligations<sup>1</sup> Trade Type and Size, 2019–2023

Average daily par amount in \$ millions

	2019	2020	2021	2022	2023	2023:Q1	2023:Q2	2023:Q3	2023:Q4
<b>Total</b>	<b>3,469.6</b>	<b>3,208.6</b>	<b>1,626.7</b>	<b>2,818.7</b>	<b>2,720.3</b>	<b>2,888.3</b>	<b>2,524.0</b>	<b>2,703.1</b>	<b>2,765.3</b>
0–\$25,000	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
\$25,001–\$50,000	0.1	0.1	<0.1	<0.1	0.1	0.1	0.1	0.1	0.1
\$50,001–\$75,000	<0.1	0.1	<0.1	<0.1	0.1	0.1	0.1	<0.1	0.1
\$75,001–\$100,000	15.6	13.2	5.6	7.4	6.9	8.5	6.9	6.1	5.9
\$100,001–\$500,000	97.3	82.9	34.9	49.6	47.1	61.4	48.2	38.5	40.7
\$500,001–\$1,000,000	105.8	91.6	42.6	59.0	60.3	70.1	58.8	55.1	57.3
\$1,000,001–\$2,000,000	165.1	153.0	77.6	108.0	106.5	111.5	102.3	102.4	109.9
More than \$2,000,000	3,085.7	2,867.9	1,466.2	2,594.8	2,499.4	2,636.6	2,307.6	2,500.9	2,551.3
<b>Customer Bought Total</b>	<b>1,717.2</b>	<b>1,567.1</b>	<b>786.0</b>	<b>1,349.9</b>	<b>1,316.6</b>	<b>1,374.8</b>	<b>1,228.3</b>	<b>1,289.5</b>	<b>1,373.2</b>
0–\$25,000	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
\$25,001–\$50,000	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
\$50,001–\$75,000	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
\$75,001–\$100,000	4.9	2.9	1.1	2.2	1.7	2.3	1.7	1.5	1.3
\$100,001–\$500,000	38.8	26.2	11.2	20.1	16.8	22.7	16.8	13.7	14.2
\$500,001–\$1,000,000	47.5	37.2	18.1	26.4	25.9	31.1	25.1	23.5	24.2
\$1,000,001–\$2,000,000	79.8	72.5	37.3	52.4	50.8	54.9	47.4	47.2	53.7
More than \$2,000,000	1,546.2	1,428.2	718.2	1,248.8	1,221.3	1,263.8	1,137.3	1,203.6	1,279.8
<b>Customer Sold Total</b>	<b>1,671.6</b>	<b>1,530.0</b>	<b>754.8</b>	<b>1,307.1</b>	<b>1,268.4</b>	<b>1,345.9</b>	<b>1,159.0</b>	<b>1,284.0</b>	<b>1,284.3</b>
0–\$25,000	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
\$25,001–\$50,000	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
\$50,001–\$75,000	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
\$75,001–\$100,000	8.2	7.5	3.5	3.7	4.1	4.7	4.2	3.8	3.8
\$100,001–\$500,000	46.8	43.5	18.7	20.9	23.9	29.4	24.4	20.1	21.8
\$500,001–\$1,000,000	50.0	44.6	20.6	25.3	28.5	31.3	28.2	26.2	28.2
\$1,000,001–\$2,000,000	77.0	70.2	35.0	46.7	48.2	48.5	46.2	47.7	50.2
More than \$2,000,000	1,489.5	1,364.1	676.9	1,210.4	1,163.7	1,231.8	1,055.9	1,186.2	1,180.3
<b>Inter-Dealer Total</b>	<b>80.9</b>	<b>111.6</b>	<b>86.1</b>	<b>161.9</b>	<b>135.3</b>	<b>167.6</b>	<b>136.8</b>	<b>129.6</b>	<b>107.8</b>
0–\$25,000	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
\$25,001–\$50,000	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
\$50,001–\$75,000	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
\$75,001–\$100,000	2.4	2.7	1.0	1.5	1.1	1.5	1.0	0.9	0.9
\$100,001–\$500,000	11.8	13.2	4.9	8.6	6.4	9.3	7.1	4.7	4.7
\$500,001–\$1,000,000	8.4	9.9	3.9	7.4	5.9	7.7	5.5	5.3	4.9
\$1,000,001–\$2,000,000	8.2	10.3	5.2	8.8	7.6	8.1	8.7	7.5	6.0
More than \$2,000,000	50.1	75.6	71.0	135.6	114.4	141.0	114.4	111.2	91.3

<sup>1</sup> Based on data submitted to the MSRB's Short-Term Obligation Rate Transparency (SHORT) System. May exclude submissions that could not be categorized based on available data.

Variable Rate Demand Obligations<sup>1</sup> Trade Type and Size, 2019–2023

Average daily number of trades

	2019	2020	2021	2022	2023	2023:Q1	2023:Q2	2023:Q3	2023:Q4
<b>Total</b>	<b>1,037</b>	<b>917</b>	<b>430</b>	<b>618</b>	<b>600</b>	<b>682</b>	<b>591</b>	<b>555</b>	<b>575</b>
0–\$25,000	1	3	1	1	2	2	2	2	2
\$25,001–\$50,000	1	2	1	1	2	2	2	1	2
\$50,001–\$75,000	<1	1	1	1	1	1	1	1	1
\$75,001–\$100,000	156	132	56	74	69	85	69	61	59
\$100,001–\$500,000	338	288	119	166	157	205	162	129	134
\$500,001–\$1,000,000	132	115	54	73	75	87	73	68	72
\$1,000,001–\$2,000,000	109	102	52	70	70	73	67	66	72
More than \$2,000,000	299	274	147	231	225	227	214	226	232
<b>Customer Bought Total</b>	<b>443</b>	<b>349</b>	<b>168</b>	<b>266</b>	<b>247</b>	<b>281</b>	<b>239</b>	<b>227</b>	<b>242</b>
0–\$25,000	<1	1	<1	<1	1	1	1	1	1
\$25,001–\$50,000	<1	<1	<1	<1	1	1	1	<1	1
\$50,001–\$75,000	<1	<1	<1	<1	<1	<1	<1	<1	<1
\$75,001–\$100,000	49	29	11	22	17	23	17	15	13
\$100,001–\$500,000	132	86	36	66	54	73	54	44	44
\$500,001–\$1,000,000	59	47	23	33	32	39	31	29	30
\$1,000,001–\$2,000,000	53	48	25	34	33	36	31	31	35
More than \$2,000,000	150	136	73	112	109	109	103	108	117
<b>Customer Sold Total</b>	<b>503</b>	<b>462</b>	<b>217</b>	<b>277</b>	<b>295</b>	<b>324</b>	<b>292</b>	<b>278</b>	<b>288</b>
0–\$25,000	1	1	1	1	1	1	1	1	1
\$25,001–\$50,000	1	1	1	1	1	1	1	1	1
\$50,001–\$75,000	<1	1	<1	<1	<1	<1	1	<1	1
\$75,001–\$100,000	83	76	35	37	41	48	43	38	38
\$100,001–\$500,000	163	153	65	71	81	100	83	69	74
\$500,001–\$1,000,000	63	56	26	32	35	39	35	32	36
\$1,000,001–\$2,000,000	51	47	23	30	32	32	30	31	33
More than \$2,000,000	143	128	66	106	104	104	99	106	106
<b>Inter-Dealer Total</b>	<b>91</b>	<b>106</b>	<b>45</b>	<b>74</b>	<b>58</b>	<b>77</b>	<b>60</b>	<b>51</b>	<b>45</b>
0–\$25,000	<1	1	<1	<1	<1	<1	<1	<1	<1
\$25,001–\$50,000	<1	<1	<1	<1	<1	<1	<1	<1	<1
\$50,001–\$75,000	<1	<1	<1	<1	<1	<1	<1	<1	<1
\$75,001–\$100,000	24	27	10	15	11	15	10	9	9
\$100,001–\$500,000	44	49	18	30	22	32	24	17	17
\$500,001–\$1,000,000	11	12	5	9	7	10	7	7	6
\$1,000,001–\$2,000,000	6	7	3	6	5	5	6	5	4
More than \$2,000,000	7	9	8	14	12	14	12	13	9

<sup>1</sup> Based on data submitted to the MSRB's Short-Term Obligation Rate Transparency (SHORT) System. May exclude submissions that could not be categorized based on available data.

Auction Rate Securities<sup>1</sup> Trade Type and Size, 2019–2023

Average daily par amount in \$ millions

	2019	2020	2021	2022	2023	2023:Q1	2023:Q2	2023:Q3	2023:Q4
<b>Total</b>	<b>20.4</b>	<b>21.9</b>	<b>6.8</b>	<b>13.3</b>	<b>8.4</b>	<b>8.9</b>	<b>9.0</b>	<b>7.8</b>	<b>8.1</b>
0–\$25,000	0.2	0.3	0.2	0.1	0.2	0.1	0.1	0.2	0.2
\$25,001–\$50,000	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3
\$50,001–\$75,000	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2
\$75,001–\$100,000	0.5	0.4	0.2	0.4	0.3	0.3	0.3	0.3	0.3
\$100,001–\$500,000	4.8	3.3	1.8	3.6	3.4	3.6	3.5	3.5	3.0
\$500,001–\$1,000,000	2.8	2.6	0.9	2.2	1.8	2.1	2.3	1.4	1.3
\$1,000,001–\$2,000,000	2.8	2.6	1.2	1.8	1.1	1.3	1.5	0.8	0.9
More than \$2,000,000	8.8	12.4	2.2	4.9	1.3	1.1	0.9	1.2	2.0
<b>Customer Bought Total</b>	<b>7.2</b>	<b>7.1</b>	<b>2.2</b>	<b>3.9</b>	<b>2.6</b>	<b>2.8</b>	<b>2.7</b>	<b>2.4</b>	<b>2.4</b>
0–\$25,000	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
\$25,001–\$50,000	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
\$50,001–\$75,000	0.1	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.1
\$75,001–\$100,000	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
\$100,001–\$500,000	1.5	1.1	0.5	1.0	0.9	1.0	0.9	0.8	0.7
\$500,001–\$1,000,000	1.0	0.8	0.3	0.6	0.6	0.7	0.8	0.5	0.4
\$1,000,001–\$2,000,000	0.9	1.0	0.5	0.6	0.4	0.4	0.5	0.3	0.3
More than \$2,000,000	3.3	4.0	0.7	1.4	0.4	0.3	0.4	0.4	0.5
<b>Customer Sold Total</b>	<b>6.5</b>	<b>7.2</b>	<b>2.2</b>	<b>3.9</b>	<b>2.6</b>	<b>2.8</b>	<b>2.8</b>	<b>2.3</b>	<b>2.4</b>
0–\$25,000	0.1	0.1	0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.1
\$25,001–\$50,000	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
\$50,001–\$75,000	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
\$75,001–\$100,000	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
\$100,001–\$500,000	1.8	1.1	0.6	1.1	1.3	1.4	1.3	1.3	1.2
\$500,001–\$1,000,000	0.9	0.9	0.3	0.6	0.4	0.6	0.4	0.3	0.3
\$1,000,001–\$2,000,000	0.8	0.8	0.3	0.5	0.3	0.4	0.5	0.3	0.1
More than \$2,000,000	2.6	4.1	0.8	1.4	0.3	0.3	0.3	0.2	0.5
<b>Inter-Dealer Total</b>	<b>6.7</b>	<b>7.6</b>	<b>2.4</b>	<b>5.5</b>	<b>3.3</b>	<b>3.3</b>	<b>3.4</b>	<b>3.1</b>	<b>3.4</b>
0–\$25,000	<0.1	0.1	0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1
\$25,001–\$50,000	0.1	0.1	<0.1	0.1	0.1	0.1	0.1	0.0	0.1
\$50,001–\$75,000	0.1	0.1	0.1	0.1	<0.1	<0.1	<0.1	0.1	0.1
\$75,001–\$100,000	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1
\$100,001–\$500,000	1.6	1.2	0.7	1.5	1.2	1.2	1.3	1.4	1.1
\$500,001–\$1,000,000	0.9	0.9	0.3	1.0	0.8	0.9	1.2	0.5	0.6
\$1,000,001–\$2,000,000	1.0	0.9	0.4	0.7	0.4	0.5	0.5	0.3	0.4
More than \$2,000,000	2.9	4.3	0.8	2.1	0.6	0.5	0.2	0.6	1.0

<sup>1</sup> Based on data submitted to the MSRB's Short-Term Obligation Rate Transparency (SHORT) System. May exclude submissions that could not be categorized based on available data.

Auction Rate Securities<sup>1</sup> Trade Type and Size, 2019–2023

Average daily number of trades

	2019	2020	2021	2022	2023	2023:Q1	2023:Q2	2023:Q3	2023:Q4
<b>Total</b>	<b>49</b>	<b>41</b>	<b>25</b>	<b>33</b>	<b>31</b>	<b>30</b>	<b>29</b>	<b>33</b>	<b>31</b>
0–\$25,000	8	10	8	6	7	6	5	10	7
\$25,001–\$50,000	6	5	3	3	4	4	3	4	5
\$50,001–\$75,000	3	2	2	2	2	2	2	2	2
\$75,001–\$100,000	5	4	2	4	3	3	3	3	3
\$100,001–\$500,000	19	13	7	13	11	12	11	11	11
\$500,001–\$1,000,000	4	3	1	3	2	3	3	2	2
\$1,000,001–\$2,000,000	2	2	1	1	1	1	1	1	1
More than \$2,000,000	2	2	0	1	<1	<1	<1	<1	1
<b>Customer Bought Total</b>	<b>17</b>	<b>13</b>	<b>8</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>9</b>	<b>14</b>	<b>11</b>
0–\$25,000	4	3	3	2	3	3	2	5	3
\$25,001–\$50,000	2	2	1	1	2	2	1	2	3
\$50,001–\$75,000	1	1	1	1	1	1	1	1	1
\$75,001–\$100,000	2	1	1	1	1	1	1	1	1
\$100,001–\$500,000	6	4	2	4	3	4	3	3	3
\$500,001–\$1,000,000	1	1	<1	1	1	1	1	1	1
\$1,000,001–\$2,000,000	1	1	<1	<1	<1	<1	<1	<1	<1
More than \$2,000,000	1	1	<1	<1	<1	<1	<1	<1	<1
<b>Customer Sold Total</b>	<b>17</b>	<b>15</b>	<b>9</b>	<b>9</b>	<b>9</b>	<b>9</b>	<b>9</b>	<b>9</b>	<b>9</b>
0–\$25,000	3	5	3	1	2	1	2	2	2
\$25,001–\$50,000	2	2	1	1	1	1	1	1	1
\$50,001–\$75,000	1	1	1	1	0	0	1	0	1
\$75,001–\$100,000	2	2	1	1	1	1	1	1	1
\$100,001–\$500,000	7	4	2	4	4	4	4	4	4
\$500,001–\$1,000,000	1	1	<1	1	1	1	1	<1	<1
\$1,000,001–\$2,000,000	1	1	<1	<1	<1	<1	<1	<1	<1
More than \$2,000,000	<1	1	<1	<1	<1	<1	<1	<1	<1
<b>Inter-Dealer Total</b>	<b>14</b>	<b>13</b>	<b>8</b>	<b>12</b>	<b>11</b>	<b>10</b>	<b>11</b>	<b>11</b>	<b>11</b>
0–\$25,000	2	3	2	2	2	2	1	2	2
\$25,001–\$50,000	1	1	1	1	1	1	1	1	1
\$50,001–\$75,000	1	1	1	1	1	1	1	1	1
\$75,001–\$100,000	1	1	1	1	1	1	2	1	1
\$100,001–\$500,000	6	5	3	5	4	4	4	5	4
\$500,001–\$1,000,000	1	1	<1	1	1	1	2	1	1
\$1,000,001–\$2,000,000	1	1	<1	<1	<1	<1	<1	<1	<1
More than \$2,000,000	1	1	<1	<1	<1	<1	<1	<1	<1

<sup>1</sup> Based on data submitted to the MSRB's Short-Term Obligation Rate Transparency (SHORT) System. May exclude submissions that could not be categorized based on available data.

# Part Eight

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## Yield Distributions, 2021–2023

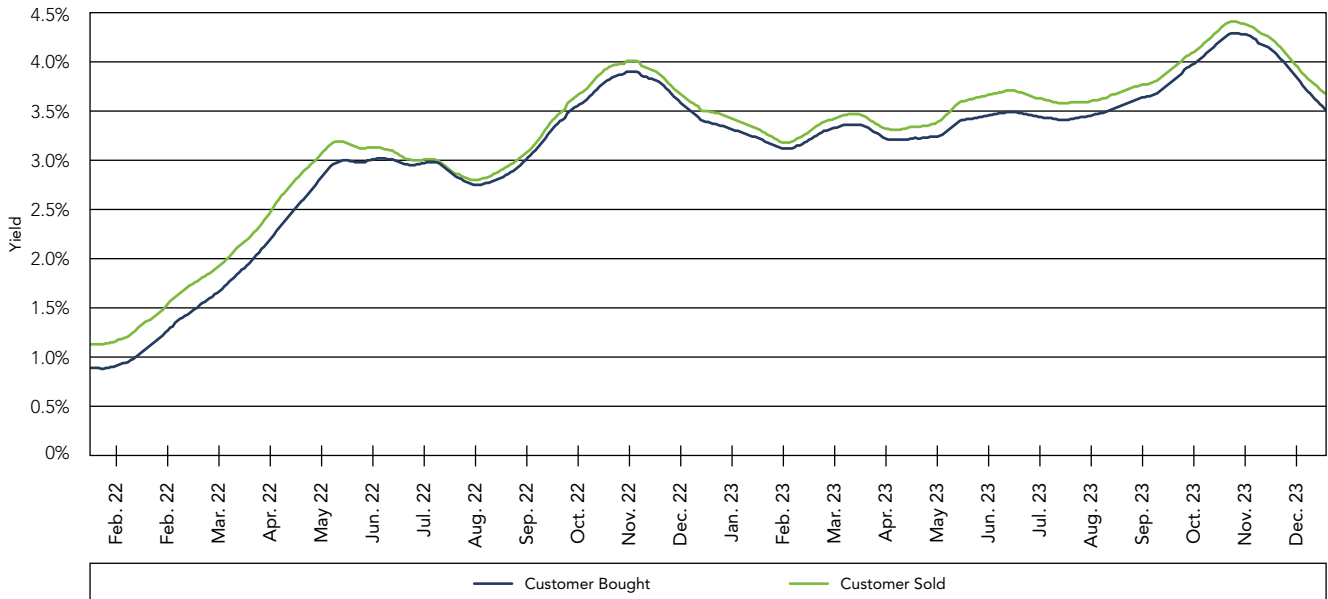
### Customer Trade and Size of Tax Exempt, Fixed Rate Securities, 2021–2023

Average daily yields

	2021	2022	2023	2023:Q1	2023:Q2	2023:Q3	2023:Q4
<b>All Trades</b>							
<b>Total</b>	<b>0.98</b>	<b>3.01</b>	<b>3.72</b>	<b>3.35</b>	<b>3.52</b>	<b>3.75</b>	<b>4.06</b>
0–\$25,000	1.02	3.03	3.77	3.39	3.57	3.80	4.13
\$25,001–\$50,000	0.92	3.02	3.70	3.33	3.49	3.73	4.04
\$50,001–\$75,000	0.84	2.91	3.61	3.23	3.39	3.64	3.93
\$75,001–\$100,000	0.89	3.00	3.69	3.34	3.48	3.73	4.02
\$100,001–\$500,000	0.92	2.91	3.60	3.26	3.41	3.65	3.92
\$500,001–\$1,000,000	1.23	2.98	3.62	3.28	3.44	3.67	3.97
\$1,000,001–\$2,000,000	1.30	3.05	3.67	3.38	3.49	3.71	4.02
More than \$2,000,000	1.43	3.27	3.82	3.59	3.58	3.86	4.18
<b>Customer Bought</b>							
<b>Total</b>	<b>0.86</b>	<b>2.92</b>	<b>3.59</b>	<b>3.25</b>	<b>3.37</b>	<b>3.63</b>	<b>3.94</b>
0–\$25,000	0.85	2.96	3.64	3.30	3.42	3.68	4.01
\$25,001–\$50,000	0.78	2.94	3.59	3.25	3.37	3.62	3.93
\$50,001–\$75,000	0.70	2.80	3.48	3.13	3.25	3.53	3.80
\$75,001–\$100,000	0.77	2.89	3.57	3.24	3.36	3.61	3.89
\$100,001–\$500,000	0.86	2.75	3.46	3.11	3.25	3.51	3.77
\$500,001–\$1,000,000	1.23	2.86	3.50	3.16	3.32	3.57	3.85
\$1,000,001–\$2,000,000	1.33	3.00	3.60	3.30	3.39	3.65	3.97
More than \$2,000,000	1.48	3.26	3.78	3.55	3.53	3.82	4.15
<b>Customer Sold</b>							
<b>Total</b>	<b>1.06</b>	<b>3.02</b>	<b>3.74</b>	<b>3.32</b>	<b>3.55</b>	<b>3.78</b>	<b>4.06</b>
0–\$25,000	1.18	3.07	3.79	3.38	3.61	3.83	4.14
\$25,001–\$50,000	0.98	2.99	3.72	3.28	3.53	3.75	4.03
\$50,001–\$75,000	0.89	2.92	3.63	3.19	3.43	3.65	3.93
\$75,001–\$100,000	0.87	2.94	3.71	3.27	3.49	3.74	4.02
\$100,001–\$500,000	0.83	2.88	3.61	3.19	3.41	3.64	3.90
\$500,001–\$1,000,000	1.05	2.97	3.62	3.26	3.46	3.67	3.97
\$1,000,001–\$2,000,000	1.14	3.04	3.69	3.36	3.55	3.75	4.03
More than \$2,000,000	1.32	3.29	3.87	3.61	3.65	3.90	4.23



### Daily Yield of Customer Trades of Tax Exempt, Fixed Rate Securities, 2022–2023 30-day trailing average



**DATA AVAILABLE FROM THE MSRB**

## See the Latest Aggregate Data with the MSRB’s Quarterly Statistical Summaries

The MSRB’s free Quarterly Statistical Summaries include aggregate municipal bond market information on:

- Trading activity,
- The number of interest rate resets for variable rate demand obligations and auction rate securities, and
- Statistics about the continuing disclosure documents received through the MSRB’s EMMA® website.

[View the quarterly statistical summaries.](#)

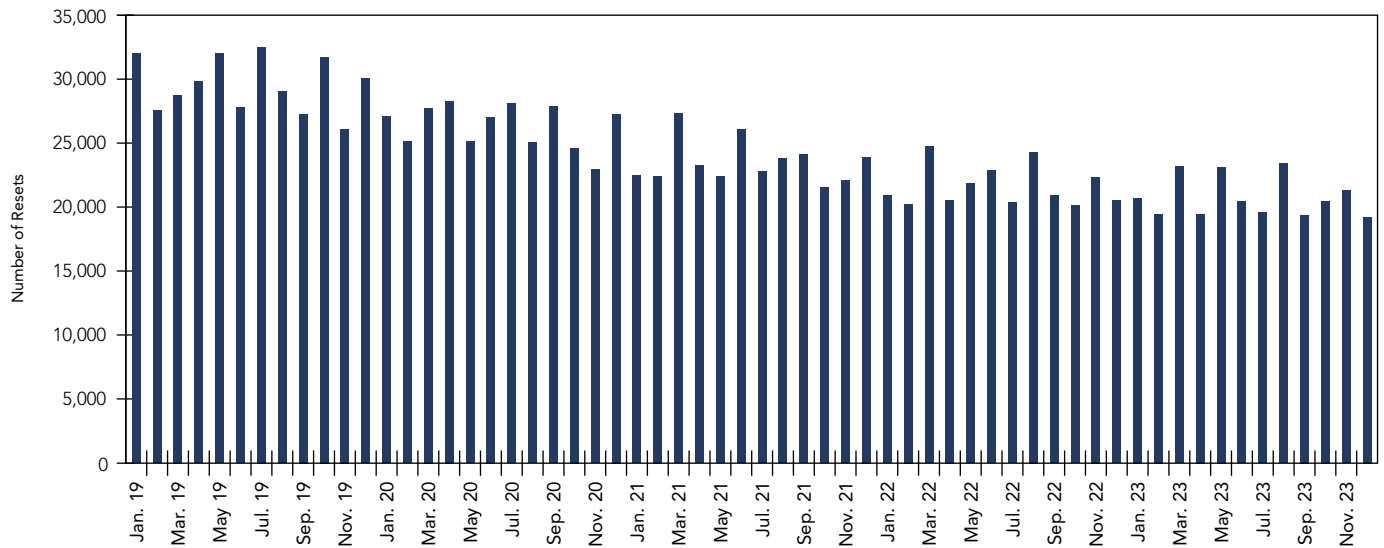


## Part Nine

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# Municipal Market Variable Securities Rate Resets, 2019–2023

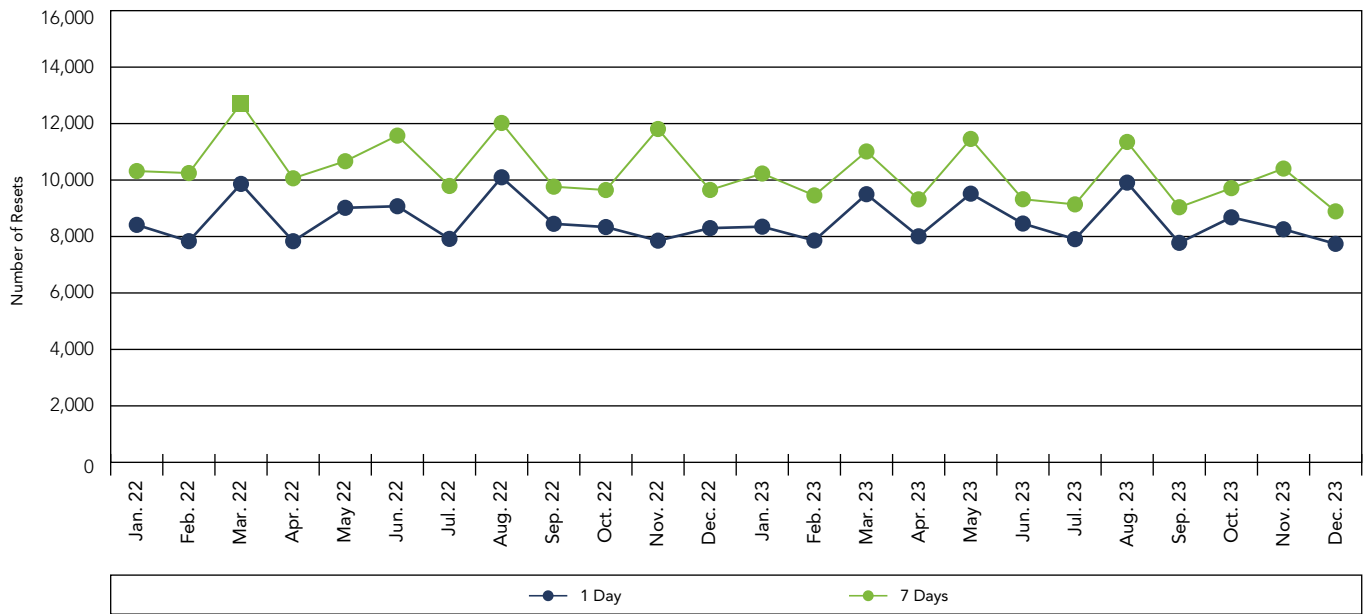
### Number of Variable Rate Demand Obligations Rate Resets<sup>1</sup>, 2019–2023



	2019	2020	2021	2022	2023
January	32,017	27,103	22,515	20,927	20,739
February	27,555	25,157	22,448	20,250	19,470
March	28,787	27,767	27,353	24,774	23,220
April	29,853	28,313	23,297	20,573	19,475
May	32,045	25,148	22,404	21,885	23,170
June	27,793	27,056	26,098	22,879	20,479
July	32,541	28,113	22,797	20,399	19,613
August	29,059	25,077	23,845	24,338	23,425
September	27,313	27,869	24,144	20,905	19,415
October	31,768	24,638	21,563	20,156	20,510
November	26,132	22,986	22,124	22,364	21,295
December	30,060	27,302	23,928	20,534	19,253

<sup>1</sup> Based on data submitted to the MSRB's Short-Term Obligation Rate Transparency (SHORT) System. May exclude submissions that could not be categorized based on available data.

### Number of Variable Rate Demand Obligations Rate Resets by Period<sup>1</sup>, 2022–2023

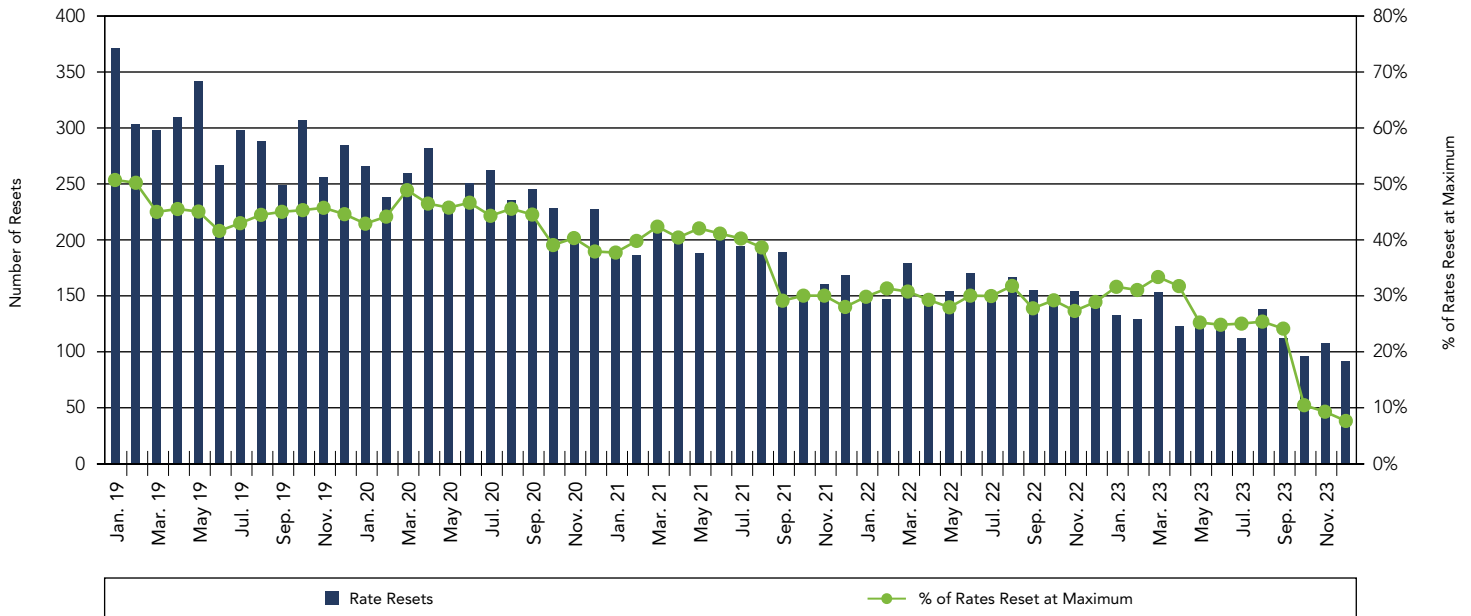


	1 Day	7 Days
Jan. 22	8,467	10,385
Feb. 22	7,886	10,314
Mar. 22	9,927	12,795
Apr. 22	7,884	10,127
May 22	9,075	10,736
Jun. 22	9,131	11,649
Jul. 22	7,967	9,854
Aug. 22	10,163	12,100
Sep. 22	8,504	9,828
Oct. 22	8,389	9,709
Nov. 22	7,904	11,885
Dec. 22	8,351	9,711

	1 Day	7 Days
Jan. 23	8,402	10,297
Feb. 23	7,909	9,517
Mar. 23	9,560	11,084
Apr. 23	8,059	9,376
May 23	9,579	11,531
Jun. 23	8,514	9,381
Jul. 23	7,957	9,197
Aug. 23	9,973	11,423
Sep. 23	7,826	9,095
Oct. 23	8,736	9,776
Nov. 23	8,310	10,474
Dec. 23	7,790	8,948

<sup>1</sup> Based on data submitted to the MSRB's Short-Term Obligation Rate Transparency (SHORT) System. May exclude submissions that could not be categorized based on available data. The remaining 27,239 resets were for securities with other periodic reset frequencies.

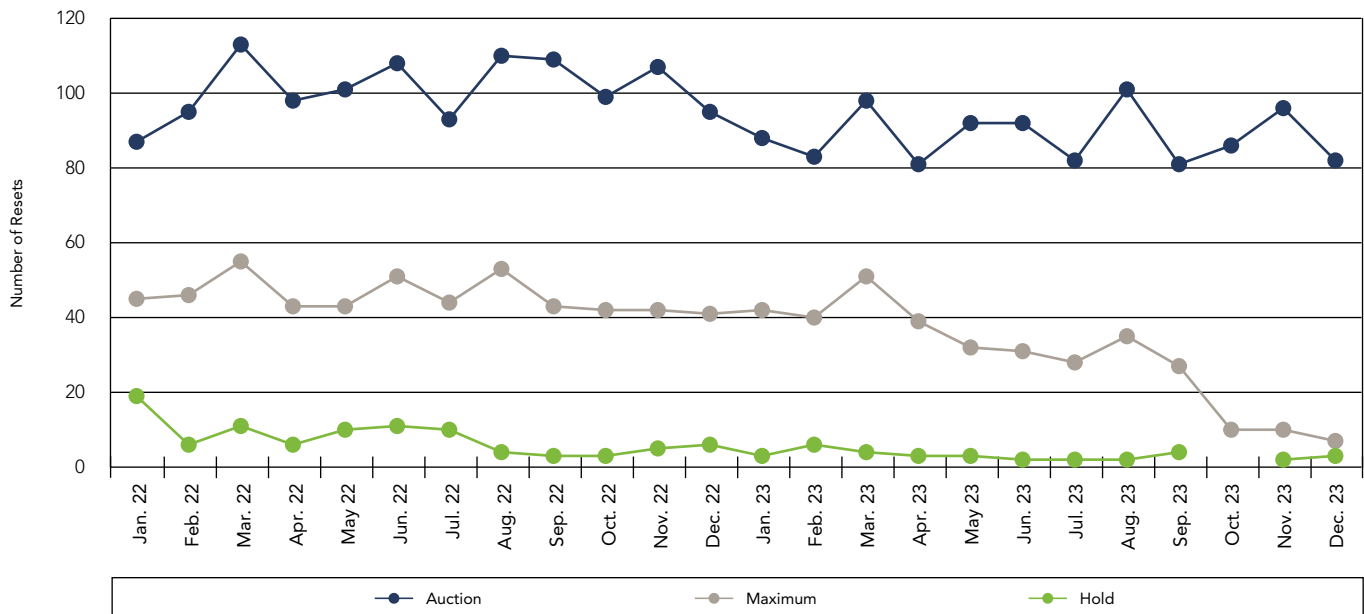
### Number of Auction Rate Securities Rate Resets<sup>1</sup>, 2019–2023



	2019	2020	2021	2022	2023
January	371	266	191	151	133
February	303	238	186	147	129
March	298	260	215	179	153
April	310	282	203	147	123
May	342	234	188	154	127
June	267	251	202	170	125
July	298	262	194	147	112
August	288	235	189	167	138
September	249	245	189	155	112
October	307	228	150	144	96
November	256	206	160	154	108
December	285	227	168	142	92

<sup>1</sup> Based on data submitted to the MSRB's Short-Term Obligation Rate Transparency (SHORT) System. May exclude submissions that could not be categorized based on available data.

### Number of Auction Rate Securities Rate Resets by Type<sup>1</sup>, 2021–2022

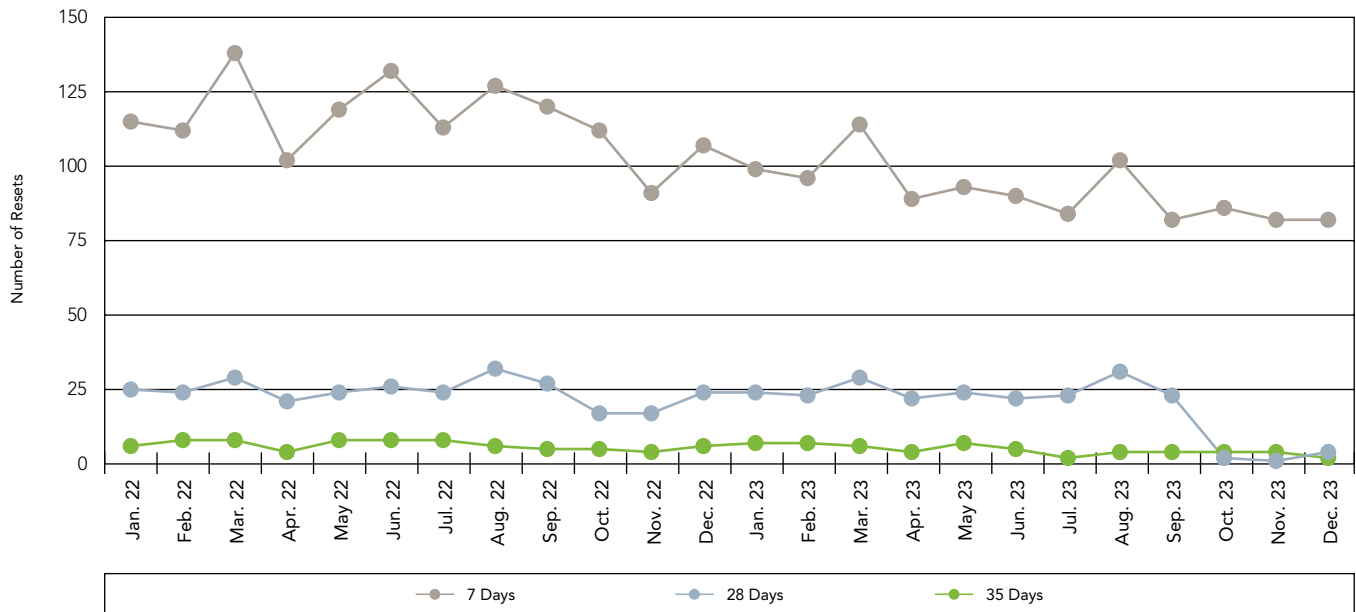


	Auction	Maximum	Hold
Jan. 22	87	45	19
Feb. 22	95	46	6
Mar. 22	113	55	11
Apr. 22	98	43	6
May 22	101	43	10
Jun. 22	108	51	11
Jul. 22	93	44	10
Aug. 22	110	53	4
Sep. 22	109	43	3
Oct. 22	99	42	3
Nov. 22	107	42	5
Dec. 22	95	41	6

	Auction	Maximum	Hold
Jan. 23	88	42	3
Feb. 23	83	40	6
Mar. 23	98	51	4
Apr. 23	81	39	3
May 23	92	32	3
Jun. 23	92	31	2
Jul. 23	82	28	2
Aug. 23	101	35	2
Sep. 23	81	27	4
Oct. 23	86	10	4
Nov. 23	96	10	2
Dec. 23	82	7	3

<sup>1</sup> Based on data submitted to the MSRB's Short-Term Obligation Rate Transparency (SHORT) System. May exclude submissions that could not be categorized based on available data.

### Number of Auction Rate Securities Rate Resets by Period<sup>1</sup>, 2022–2023



	7 Days	28 Days	35 Days
Jan. 22	115	25	6
Feb. 22	112	24	8
Mar. 22	138	29	8
Apr. 22	102	21	4
May 22	119	24	8
Jun. 22	132	26	8
Jul. 22	113	24	8
Aug. 22	127	32	6
Sep. 22	120	27	5
Oct. 22	112	17	5
Nov. 22	91	17	4
Dec. 22	107	24	6

	7 Days	28 Days	35 Days
Jan. 23	99	24	7
Feb. 23	96	23	7
Mar. 23	114	29	6
Apr. 23	89	22	4
May 23	93	24	7
Jun. 23	90	22	5
Jul. 23	84	23	2
Aug. 23	102	31	4
Sep. 23	82	23	4
Oct. 23	86	2	4
Nov. 23	82	1	4
Dec. 23	82	4	2

<sup>1</sup> Based on data submitted to the MSRB's Short-Term Obligation Rate Transparency (SHORT) System. May exclude submissions that could not be categorized based on available data.

# Part Ten

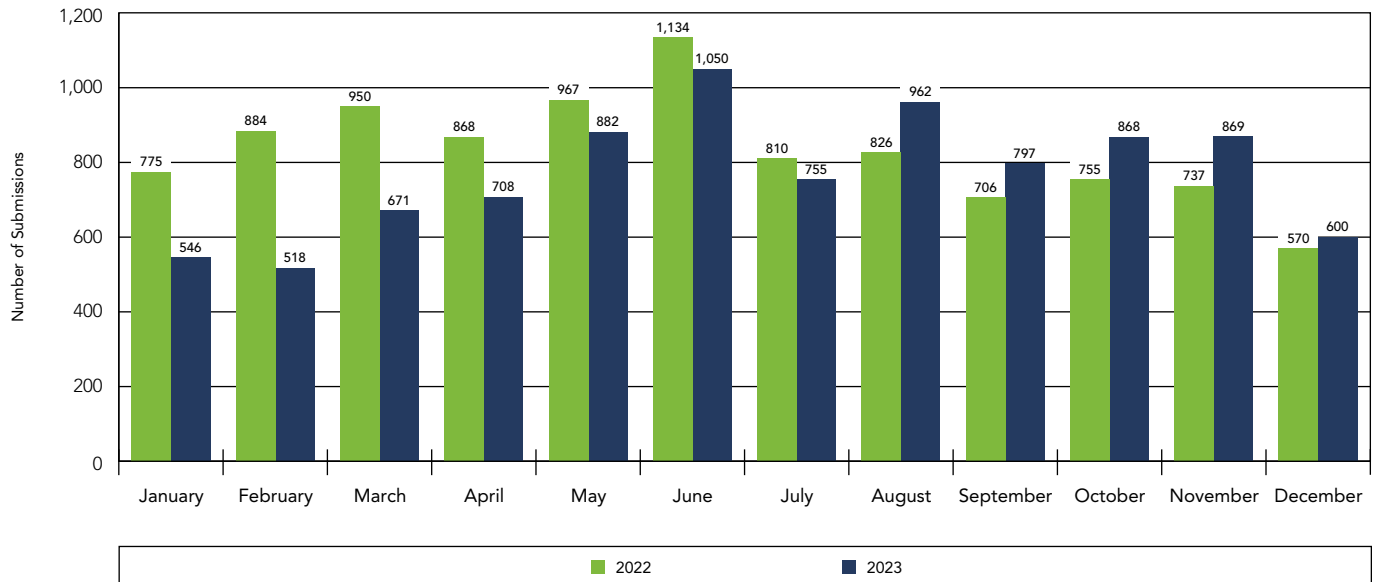
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## Municipal Market Disclosures, 2019–2023



### Number of Primary Market Submissions<sup>1</sup>, 2022–2023

By number of submissions

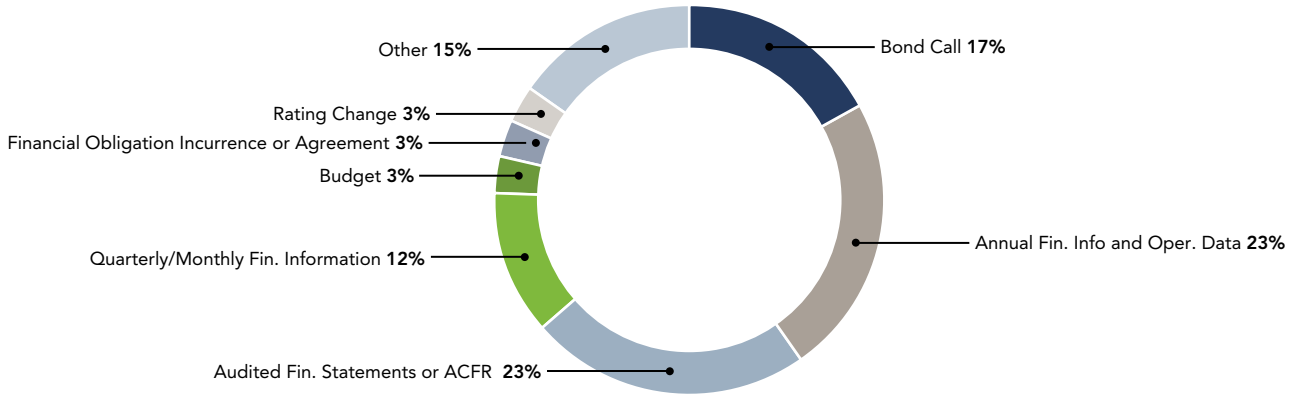


	2022	2023
January	775	546
February	884	518
March	950	671
April	868	708
May	967	882
June	1,134	1,050
July	810	755
August	826	962
September	706	797
October	755	868
November	737	869
December	570	600
Total	9,982	9,226

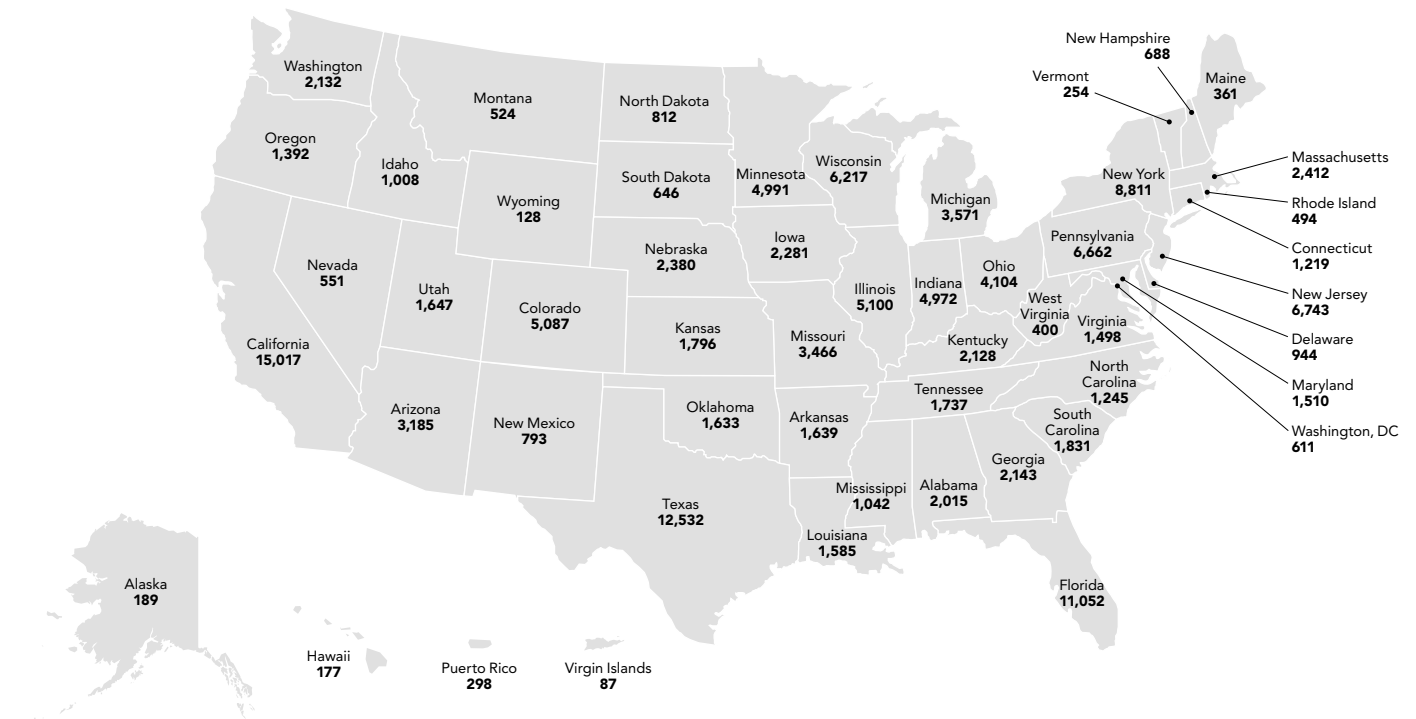
<sup>1</sup> Excludes remarketings.

## Continuing Disclosures Submissions, 2023

By number of documents



By state<sup>1</sup>



<sup>1</sup> Based on information derived from the CUSIP Service Bureau

### Number of Continuing Disclosure Submissions, 2019–2023

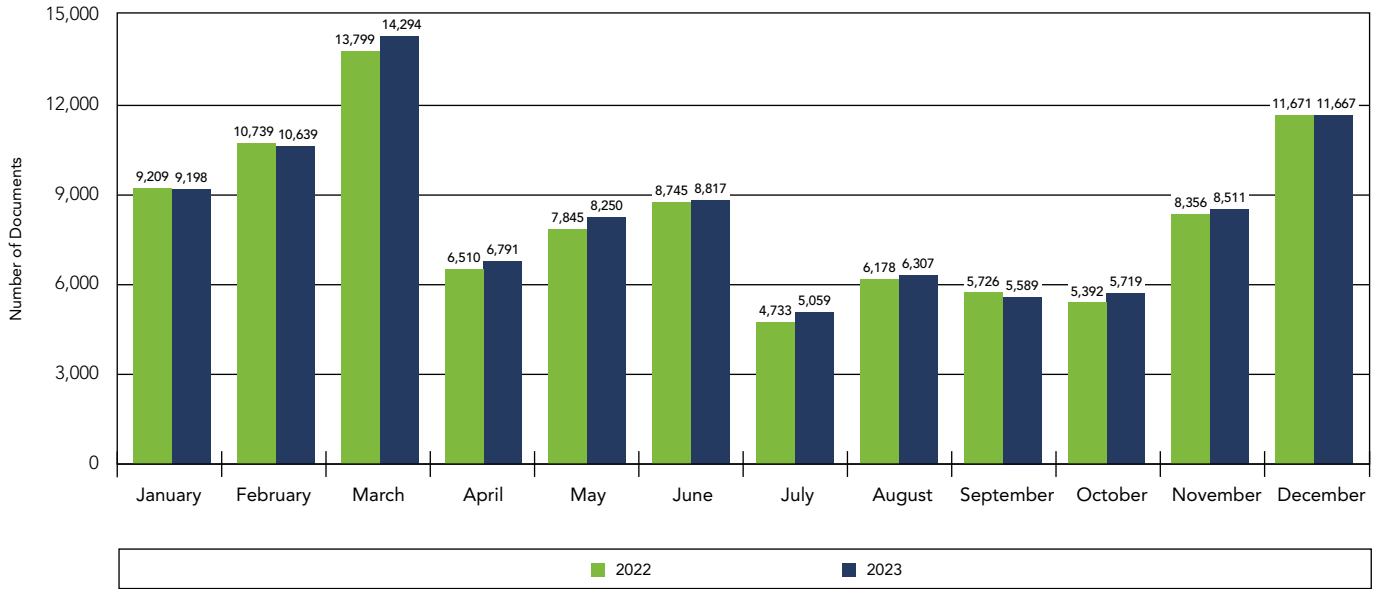


	Financial Submissions	Event Submissions
2019	98,925	51,660
2020	97,326	59,521
2021	98,505	57,779
2022	98,903	50,125
2023	100,841	41,971

<sup>1</sup> CUSIP Global Services.

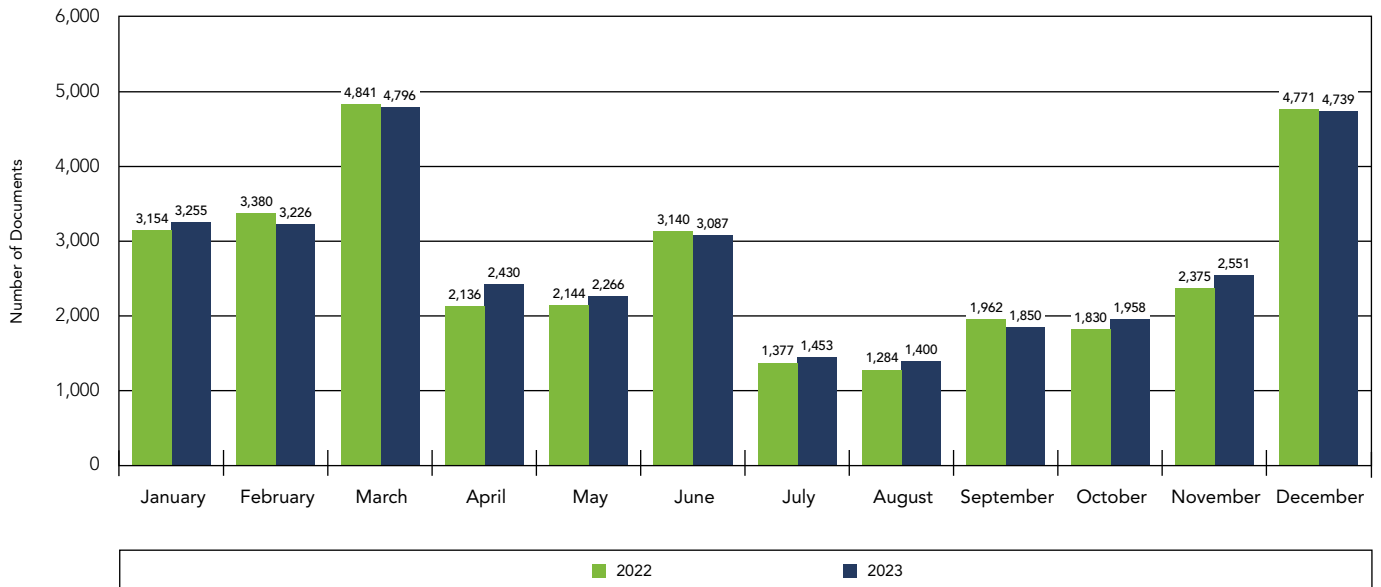
### All Financial Disclosures, 2022–2023

By number of documents



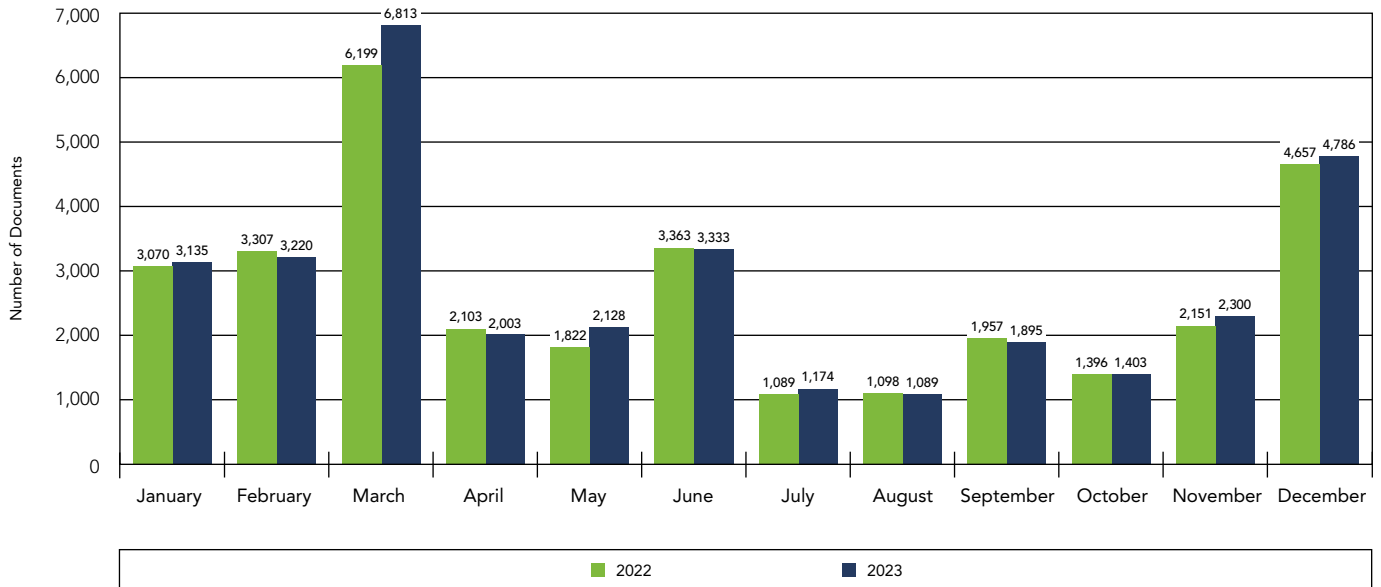
### Audited Financial Statements or ACFR Submissions, 2022–2023

By number of documents



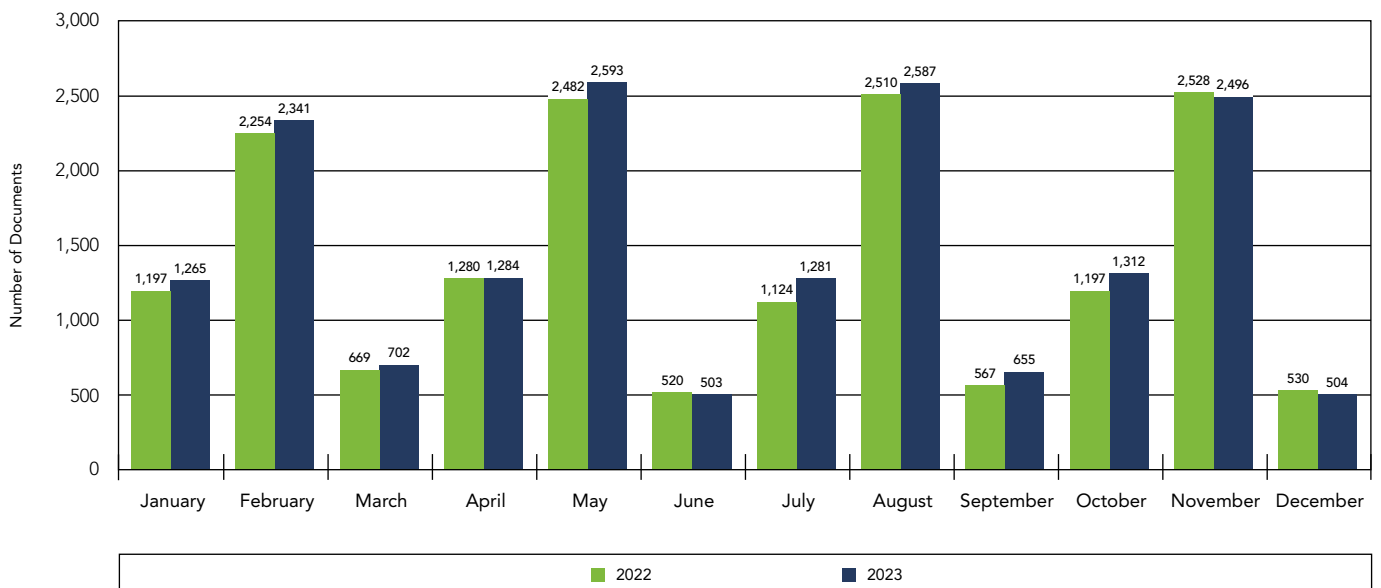
### Annual Financial Information and Operating Data Submissions, 2022–2023

By number of documents



### Quarterly/Monthly Financial Information Submissions, 2021–2022

By number of documents



## Other Financial Disclosures, 2022–2023

Financial disclosures

By Number of Documents	2022	2023
BUDGET	4,424	4,465
CHANGE IN ACCOUNTING STANDARD	3	2
CHANGE IN FISCAL YEAR/TIMING OF ANNUAL DISCLOSURE	28	18
CONSULTANT REPORTS	234	286
FAILURE TO PROVIDE ANNUAL FINANCIAL INFORMATION	2,782	2,930
INFORMATION PROVIDED TO RATING AGENCY, CREDIT/LIQUIDITY PROVIDER OR OTHER THIRD PARTY	198	193
INTERIM/ADDITIONAL FINANCIAL INFORMATION/OPERATING DATA	1,720	1,613
INVESTMENT/DEBT/FINANCIAL POLICY	61	55
OTHER FINANCIAL/OPERATING DATA	7,989	7,466



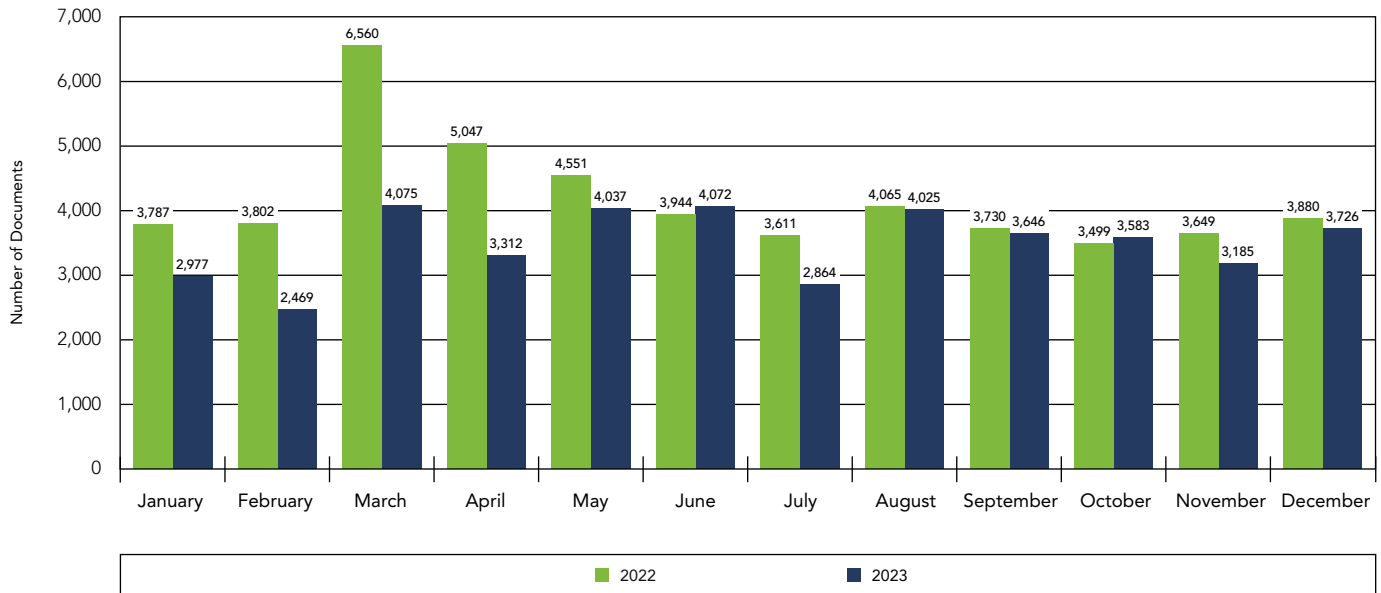
## EMMALabs Pioneering the future of market transparency

- EMMA Labs is the MSRB's innovation sandbox—a proving ground for functional prototypes that could ultimately be deployed on the EMMA website.
- Work with us to co-create the future of municipal bond market transparency. Create a free EMMA Labs account to test these prototypes, or Active Labs, provide feedback and offer ideas for future Active Labs, tools and partnerships.

Get started at [EMMALabs.msrb.org](https://EMMALabs.msrb.org)

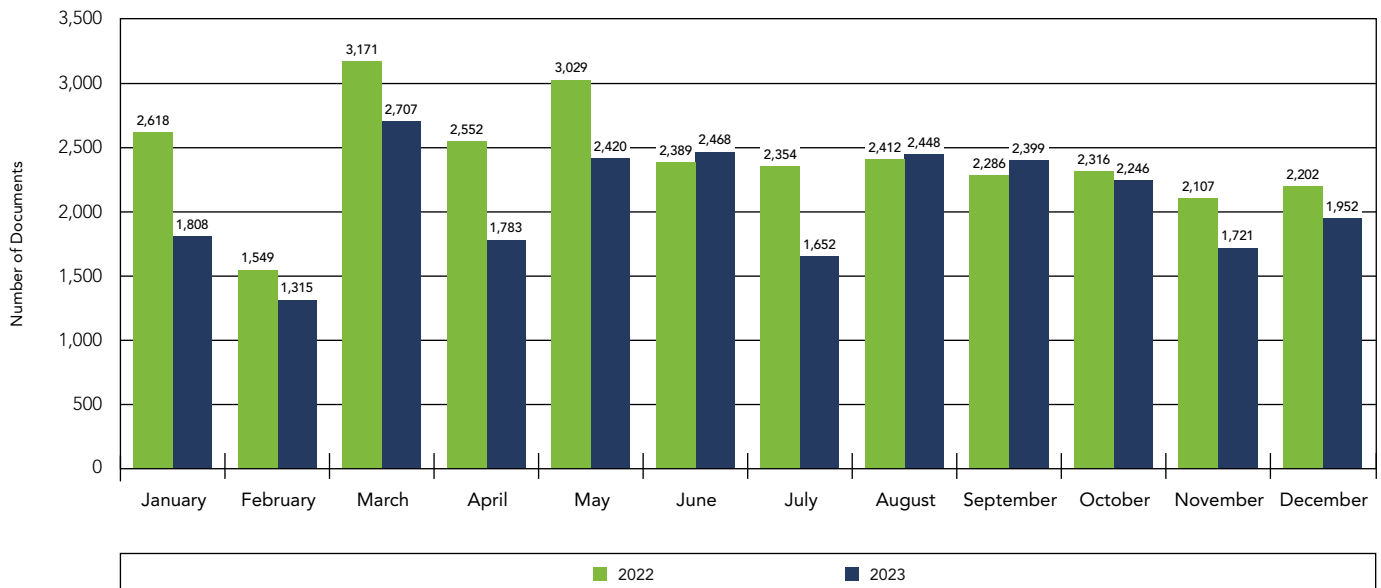
### All Event Disclosures, 2022–2023

By number of documents



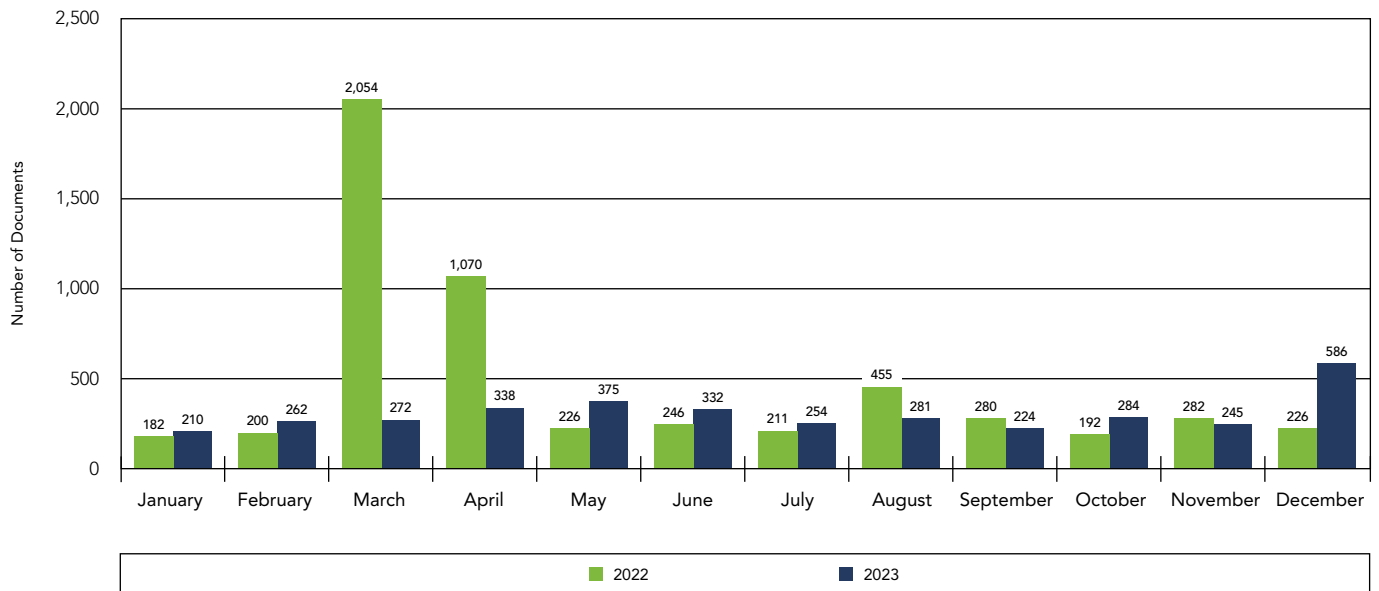
### Bond Call Submissions, 2022–2023

By number of documents



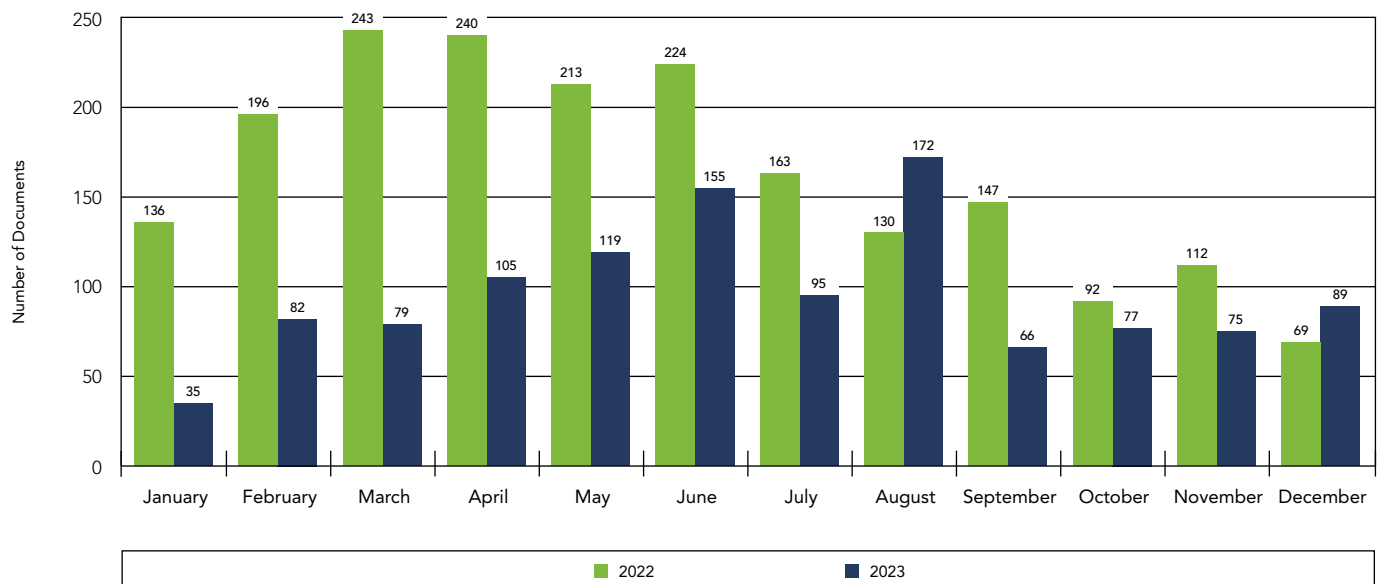
### Rating Change Submissions, 2022–2023

By number of documents



### Defeasance Submissions, 2022–2023

By number of documents





## Other Event Disclosures, 2022–2023

## Event disclosures

By Number of Documents	2022	2023
ADVERSE TAX OPINION OR EVENT AFFECTING TAX-EXEMPT STATUS	7	3
AMENDMENT TO CONTINUING DISCLOSURE UNDERTAKING	36	40
BANKRUPTCY, INSOLVENCY, RECEIVERSHIP	58	64
BID FOR AUCTION RATE OR OTHER SECURITIES	103	104
CAPITAL OR OTHER FINANCING PLAN	45	41
CHANGE IN OBLIGATED PERSON	51	59
CHANGE OF TENDER AGENT, REMARKETING AGENT, OR OTHER ON-GOING PARTY	85	60
COMMUNICATION FROM THE INTERNAL REVENUE SERVICE	4	3
DERIVATIVE OR OTHER SIMILAR TRANSACTION	4	5
FAILURE TO PROVIDE EVENT FILING INFORMATION	797	814
FINANCIAL OBLIGATION - EVENT REFLECTING FINANCIAL DIFFICULTIES	14	61
FINANCIAL OBLIGATION - INCURRENCE OR AGREEMENT	4,520	4,177
LITIGATION/ENFORCEMENT ACTION	47	54
MERGER, CONSOLIDATION, ACQUISITION AND SALE OF ASSETS	76	118
MODIFICATION TO THE RIGHTS OF SECURITY HOLDERS	41	56
NON-PAYMENT RELATED DEFAULT	53	81
NOTICE TO INVESTOR PURSUANT TO BOND DOCUMENTS	1,139	1,419
OTHER EVENT-BASED DISCLOSURES	4,339	3,894
P&I PAYMENT DELINQUENCY	319	239
RELEASE, SUBSTITUTION OR SALE OF PROPERTY	52	59
SUBSTITUTION OF CREDIT OR LIQUIDITY PROVIDER OR ITS FAILURE TO PERFORM	47	41
SUCCESSOR, ADDITIONAL OR CHANGE IN TRUSTEE	1,295	203
TENDER OFFER/SECONDARY MARKET PURCHASES	308	542
UNSCHEDULED DRAW ON CREDIT ENHANCEMENT	29	6
UNSCHEDULED DRAW ON DEBT SERVICE RESERVE	82	97

# Part Eleven

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## Definitions of Terms Used

**Alternative Minimum Tax (AMT) Municipal Security—**

A tax-exempt bond, interest on which is subject to the alternative minimum tax.

**Auction Rate Securities (ARS)**—Variable rate bonds whose interest rate is reset periodically under the Dutch auction process.

**Bond**—A security with two years or more in maturity (maturity date less dated date) with fixed or zero interest rate.

**Commercial Paper**—Short-term, unsecured promissory notes, usually backed by a line of credit with a bank, that mature within 270 days.

**CUSIP number (Committee on Uniform Securities Identification Procedures)**—An identification number assigned to each maturity of an issue intended to help facilitate the identification and clearance of securities.

**Customer Bought**—A municipal trade in which a customer bought the security from a broker-dealer or bank.

**Customer Sold**—A municipal trade in which a customer sold the security to a broker-dealer or bank.

**Customer Trade**—A municipal securities trade between a broker-dealer (including a dealer bank or broker's broker), acting as agent in an agency trade or as purchaser or seller in a principal trade, and a contra-party that is not a broker-dealer (including a dealer bank or broker's broker).

**Dated Date**—The date of an issue from which interest on the issue usually starts to accrue, even though the issue may actually be delivered at some later date.

**Double Barrel Municipal Security**—A security with characteristics of both revenue and general obligation instruments.

**Event Disclosure**—A type of continuing disclosure that is filed following a primary offering of municipal securities. See [Selecting Event Disclosure Categories on EMMA Dataport](#) for explanations of each category of event disclosure.

**Final Maturity**—Time remaining between original issue date and the stated final maturity date of the security. Final maturity does not take into account possible call and put options and rate reset frequencies as is the case with certain types of variable rate securities, such as auction rate securities and variable rate demand obligations.

**Financial/Operating Disclosure**—A type of continuing disclosure that is filed following a primary offering of municipal securities. See [Selecting Financial/Operating Disclosure Categories on EMMA Dataport](#) for explanations of each category of financial/operating disclosure.

**Fixed Rate**—An interest rate on a security that does not change for the remaining life of the security.

**General Obligation Municipal Security**—A security that is secured by the full faith, credit and taxing power of an issuer. General obligation securities issued by local units of government are typically secured by a pledge of the

issuer's "ad valorem" taxing power; general obligation securities issued by states are generally based upon appropriations made by the state legislature for the purposes specified.

**Inter-Dealer**—A municipal securities trade between two broker-dealers, including dealer banks or broker's brokers.

**Long Note**—A security with over nine months in maturity, but under two years in maturity (maturity date less dated date) with fixed or zero interest rate.

**Remaining Maturity**—Time remaining between the trade date and the stated final maturity date of the security. Remaining maturity does not take into account possible call and put options and rate reset frequencies as is the case with certain types of variable rate securities, such as auction rate securities and variable rate demand obligations.

**Revenue Municipal Security**—A security that is payable from a specific source of revenue and to which the full faith and credit of an issuer with taxing power is not pledged. Revenue bonds are payable from identified sources of revenue and do not permit the bondholders to compel taxation or legislative appropriation of funds not pledged for payment of debt service.

**Rule 15c2-12**—An SEC rule under the Securities Exchange Act of 1934 setting forth certain obligations of (i) underwriters to receive, review and disseminate official statements prepared by issuers of most primary offerings of municipal securities, (ii) underwriters to obtain continuing disclosure agreements from issuers and other obligated persons to provide material event disclosures and annual financial information on a continuing basis, and (iii) broker-dealers to have access to such continuing disclosure in order to make recommendations of municipal securities in the secondary market.

**Sale Date or Award**—The official acceptance by the issuer of a bid or offer to purchase a new issue of municipal securities by an underwriter. The date of the award is generally considered the "sale date" of an issue.

**Sector**—Transactions according to the security's use of proceeds, i.e., issuer's intended use of the capital raised by the offering, according to definitions provided by Standard & Poor's Securities Evaluations, Inc. The top seven most active sectors based on par amount are displayed, as well as an "Other" category that includes the remaining sectors and trades for which the sector information was not available.

**Short Note**—A security with nine months or less in maturity (maturity date less dated date) with fixed or zero interest rate.

**Tax Exempt**—Interest on most municipal securities is excluded from gross income for federal income tax purposes and may or may not be exempt from state income or personal property taxation in the jurisdiction where issued or in other jurisdictions. If the bond is exempt from state income tax, it possesses "double exemption" status. "Triple exemption" bonds are exempt from municipal, local income or other special taxes, as well as from federal and state income tax.

**Taxable**—Bonds or other securities issued by a municipal issuer for which interest or other investment return is included in gross income for federal income tax purposes. A municipal security may be issued on a taxable basis because the intended use of proceeds does not meet federal tax law requirements for the exclusion from gross income (e.g., private activity bonds that are not qualified bonds) or because certain other federal tax law requirements are not met (e.g., insufficient volume cap).

**Variable (Long and Short)**—Variable interest rate securities with interest reset periods. Over 99 percent of these securities are short variable (interest reset period of nine months or less) as opposed to long variables (interest reset period longer than nine months).

**Variable Rate**—An interest rate, sometimes referred to as a “floating rate,” on a security that changes at intervals according to market conditions or a predetermined index or formula.

**Variable Rate Demand Obligation (VRDO)**—Floating rate obligations that have a nominal long-term maturity but have a coupon rate that is reset periodically (e.g., daily or weekly). The investor has the option to put the issue back to the trustee or tender agent at any time with specified (e.g., seven days’) notice.

**Zero Coupon**—An original issue discount bond on which no periodic interest payments are made but which is issued at a deep discount from par, accreting (at the rate represented by the offering yield at issuance) to its full value at maturity.



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