



Municipal Securities Rulemaking Board

## Municipal Securities Market Trading Summary

*Last Updated: November 14, 2022*

The Municipal Securities Rulemaking Board (MSRB) is publishing this data analysis to provide insight regarding trading activity in the municipal securities market.

### Methodology and Definitions

The data reflect aggregate trading activity at the end of each month as submitted to the MSRB's Real-Time Transaction Reporting System (RTRS). The MSRB may update trade statistics periodically to account for modifications, cancellations, trades reported late or any other changes to the underlying characteristics of the securities.

The data in *Part I: Overall Market Trading Activity* include trades of bonds and notes (fixed, variable and zero coupon) disseminated by the MSRB through its free Electronic Municipal Market Access (EMMA<sup>®</sup>) website at [emma.msrb.org](http://emma.msrb.org) and subscription products. *Part II: Municipal Fixed-Rate Market Trading Activity* includes trades of fixed-rate and zero-coupon securities. *Part III: Municipal Variable-Rate Market Trading Activity* includes trades of all types of variable rate securities, including, among others, variable rate demand obligations (VRDO) and auction rate securities (ARS).

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## Municipal Securities Market Trading Summary

### Part I: Overall Market Trading Activity (Including Fixed, Variable and Zero Coupon)

#### **October 2022: 10/01/2022 – 10/31/2022**

##### Daily Averages

Number of Trades: 62,431

Par Amount: \$16,660 Million

| Trade Type           | Number of Trades | Par Amount (\$ Millions) |
|----------------------|------------------|--------------------------|
| Customer Purchases   | 458,002          | 166,099                  |
| Customer Sales       | 306,990          | 111,673                  |
| Inter- Dealer Trades | 483,624          | 55,424                   |
| All Trades           | 1,248,616        | 333,197                  |

#### **2022: 01/01/2022 - 10/31/2022**

##### Daily Averages

Number of Trades: 48,625

Par Amount: \$14,047 Million

| Trade Type           | Number of Trades | Par Amount (\$ Millions) |
|----------------------|------------------|--------------------------|
| Customer Purchases   | 3,677,567        | 1,472,482                |
| Customer Sales       | 2,548,549        | 966,086                  |
| Inter- Dealer Trades | 3,887,940        | 483,181                  |
| All Trades           | 10,114,056       | 2,921,749                |

#### **2021: 01/01/2021—12/31/2021**

##### Daily Averages

Number of Trades: 30,560

Par Amount: \$8,894 Million

| Trade Type           | Number of Trades | Par Amount (\$ Millions) |
|----------------------|------------------|--------------------------|
| Customer Purchases   | 2,741,482        | 1,216,320                |
| Customer Sales       | 2,121,262        | 602,414                  |
| Inter- Dealer Trades | 2,777,246        | 404,654                  |
| All Trades           | 7,639,990        | 2,223,388                |

#### **2020: 01/01/2020 – 12/31/2020**

##### Daily Averages

Number of Trades: 33,801

Par Amount: \$12,077 Million

| Trade Type           | Number of Trades | Par Amount (\$ Millions) |
|----------------------|------------------|--------------------------|
| Customer Purchases   | 3,145,003        | 1,603,396                |
| Customer Sales       | 2,163,533        | 940,616                  |
| Inter- Dealer Trades | 3,175,586        | 487,415                  |
| All Trades           | 8,484,122        | 3,031,428                |

## Municipal Securities Market Trading Summary

### Part II: Municipal Fixed-Rate Market Trading Activity

Annual Averages 2019 – 2022

January 1, 2019 – October 31, 2022

#### Customer Purchases: Fixed-Rate Trades

| Daily Averages | Number of Trades  |                                    |                                      |                       |        | Par Traded (\$ Millions) |                                    |                                      |                       |       |
|----------------|-------------------|------------------------------------|--------------------------------------|-----------------------|--------|--------------------------|------------------------------------|--------------------------------------|-----------------------|-------|
|                | \$100,000 or less | More than \$100,000 to \$1 Million | More than \$1 Million to \$5 Million | More than \$5 Million | Total  | \$100,000 or less        | More than \$100,000 to \$1 Million | More than \$1 Million to \$5 Million | More than \$5 Million | Total |
| 2019           | 9,944             | 2,181                              | 460                                  | 132                   | 12,718 | 333                      | 751                                | 1,092                                | 1,814                 | 3,990 |
| 2020           | 9,145             | 2,242                              | 545                                  | 154                   | 12,086 | 293                      | 827                                | 1,308                                | 2,134                 | 4,561 |
| 2021           | 8,109             | 2,038                              | 474                                  | 126                   | 10,747 | 258                      | 738                                | 1,106                                | 1,768                 | 3,870 |
| 2022           | 13,974            | 2,556                              | 568                                  | 192                   | 17,290 | 455                      | 842                                | 1,384                                | 2,585                 | 5,266 |
| Apr 2020       | 11,819            | 2,406                              | 575                                  | 172                   | 14,971 | 372                      | 851                                | 1,401                                | 2,231                 | 4,856 |
| May 2020       | 9,876             | 2,388                              | 569                                  | 159                   | 12,992 | 313                      | 878                                | 1,374                                | 2,023                 | 4,589 |
| Jun 2020       | 8,785             | 2,388                              | 604                                  | 142                   | 11,919 | 280                      | 921                                | 1,409                                | 1,989                 | 4,599 |
| Jul 2020       | 8,197             | 2,159                              | 542                                  | 146                   | 11,044 | 259                      | 825                                | 1,301                                | 2,097                 | 4,482 |
| Aug 2020       | 7,557             | 2,014                              | 501                                  | 142                   | 10,214 | 238                      | 764                                | 1,160                                | 2,151                 | 4,313 |
| Sep 2020       | 8,229             | 2,217                              | 557                                  | 143                   | 11,145 | 262                      | 845                                | 1,325                                | 1,945                 | 4,377 |
| Oct 2020       | 9,107             | 2,591                              | 757                                  | 202                   | 12,656 | 294                      | 1,002                              | 1,807                                | 2,621                 | 5,724 |
| Nov 2020       | 7,885             | 1,922                              | 403                                  | 97                    | 10,307 | 254                      | 686                                | 949                                  | 1,230                 | 3,119 |
| Dec 2020       | 7,876             | 2,025                              | 441                                  | 98                    | 10,440 | 254                      | 734                                | 1,042                                | 1,402                 | 3,433 |
| Jan 2021       | 8,345             | 2,278                              | 489                                  | 126                   | 11,239 | 267                      | 835                                | 1,151                                | 1,658                 | 3,911 |
| Feb 2021       | 9,123             | 2,316                              | 549                                  | 152                   | 12,139 | 291                      | 863                                | 1,292                                | 2,191                 | 4,638 |
| Mar 2021       | 8,755             | 2,287                              | 508                                  | 133                   | 11,683 | 281                      | 840                                | 1,196                                | 1,678                 | 3,995 |
| Apr 2021       | 8,225             | 2,176                              | 461                                  | 118                   | 10,979 | 264                      | 789                                | 1,070                                | 1,627                 | 3,750 |
| May 2021       | 8,316             | 2,213                              | 468                                  | 114                   | 11,112 | 265                      | 793                                | 1,055                                | 1,551                 | 3,664 |
| Jun 2021       | 8,137             | 2,093                              | 512                                  | 136                   | 10,879 | 259                      | 769                                | 1,172                                | 1,933                 | 4,133 |
| Jul 2021       | 7,189             | 1,802                              | 440                                  | 113                   | 9,546  | 224                      | 653                                | 1,029                                | 1,523                 | 3,429 |
| Aug 2021       | 7,238             | 1,759                              | 439                                  | 118                   | 9,554  | 228                      | 648                                | 1,022                                | 1,571                 | 3,468 |
| Sep 2021       | 7,478             | 1,816                              | 446                                  | 128                   | 9,868  | 237                      | 660                                | 1,048                                | 1,786                 | 3,731 |
| Oct 2021       | 8,415             | 2,065                              | 555                                  | 145                   | 11,181 | 269                      | 750                                | 1,313                                | 1,871                 | 4,204 |
| Nov 2021       | 8,225             | 1,945                              | 468                                  | 127                   | 10,765 | 259                      | 687                                | 1,097                                | 1,722                 | 3,764 |
| Dec 2021       | 8,015             | 1,788                              | 371                                  | 111                   | 10,284 | 257                      | 607                                | 878                                  | 2,203                 | 3,945 |
| Jan 2022       | 9,718             | 1,965                              | 435                                  | 148                   | 12,266 | 307                      | 660                                | 1,058                                | 1,996                 | 4,022 |
| Feb 2022       | 10,879            | 2,245                              | 524                                  | 156                   | 13,805 | 345                      | 776                                | 1,242                                | 1,891                 | 4,255 |
| Mar 2022       | 11,927            | 2,231                              | 523                                  | 201                   | 14,883 | 376                      | 759                                | 1,298                                | 2,716                 | 5,149 |
| Apr 2022       | 15,119            | 2,737                              | 669                                  | 228                   | 18,753 | 484                      | 923                                | 1,652                                | 2,940                 | 5,998 |
| May 2022       | 16,887            | 3,111                              | 679                                  | 234                   | 20,912 | 550                      | 1,027                              | 1,659                                | 3,021                 | 6,256 |
| Jun 2022       | 15,769            | 2,761                              | 613                                  | 204                   | 19,348 | 520                      | 906                                | 1,471                                | 2,740                 | 5,636 |
| Jul 2022       | 12,863            | 2,359                              | 500                                  | 165                   | 15,887 | 428                      | 751                                | 1,208                                | 2,166                 | 4,552 |
| Aug 2022       | 13,113            | 2,385                              | 517                                  | 151                   | 16,166 | 433                      | 794                                | 1,238                                | 2,181                 | 4,646 |
| Sep 2022       | 15,154            | 2,556                              | 537                                  | 200                   | 18,447 | 500                      | 812                                | 1,339                                | 2,905                 | 5,557 |
| Oct 2022       | 18,294            | 3,231                              | 687                                  | 234                   | 22,446 | 611                      | 1,018                              | 1,682                                | 3,260                 | 6,571 |

## Municipal Securities Market Trading Summary

### Customer Sales: Fixed-Rate Trades

| Daily Averages | Number of Trades  |                                    |                                      |                       |        | Par Traded (\$ Millions) |                                    |                                      |                       |       |
|----------------|-------------------|------------------------------------|--------------------------------------|-----------------------|--------|--------------------------|------------------------------------|--------------------------------------|-----------------------|-------|
|                | \$100,000 or less | More than \$100,000 to \$1 Million | More than \$1 Million to \$5 Million | More than \$5 Million | Total  | \$100,000 or less        | More than \$100,000 to \$1 Million | More than \$1 Million to \$5 Million | More than \$5 Million | Total |
| 2019           | 6,179             | 1,107                              | 225                                  | 56                    | 7,567  | 192                      | 372                                | 556                                  | 659                   | 1,779 |
| 2020           | 6,586             | 1,178                              | 251                                  | 72                    | 8,086  | 207                      | 388                                | 634                                  | 877                   | 2,107 |
| 2021           | 6,909             | 1,078                              | 198                                  | 48                    | 8,233  | 207                      | 343                                | 484                                  | 570                   | 1,605 |
| 2022           | 9,694             | 1,700                              | 375                                  | 123                   | 11,892 | 300                      | 527                                | 929                                  | 1,418                 | 3,174 |
| Apr 2020       | 7,745             | 1,628                              | 348                                  | 109                   | 9,830  | 257                      | 528                                | 873                                  | 1,279                 | 2,937 |
| May 2020       | 6,660             | 1,291                              | 296                                  | 83                    | 8,330  | 215                      | 436                                | 753                                  | 900                   | 2,304 |
| Jun 2020       | 6,000             | 1,069                              | 243                                  | 48                    | 7,360  | 185                      | 370                                | 590                                  | 534                   | 1,679 |
| Jul 2020       | 5,782             | 985                                | 195                                  | 44                    | 7,006  | 178                      | 328                                | 486                                  | 562                   | 1,555 |
| Aug 2020       | 5,437             | 874                                | 191                                  | 46                    | 6,548  | 166                      | 295                                | 474                                  | 575                   | 1,510 |
| Sep 2020       | 5,920             | 975                                | 206                                  | 41                    | 7,142  | 181                      | 326                                | 504                                  | 476                   | 1,487 |
| Oct 2020       | 6,111             | 1,047                              | 232                                  | 52                    | 7,443  | 190                      | 345                                | 582                                  | 573                   | 1,690 |
| Nov 2020       | 5,932             | 923                                | 205                                  | 53                    | 7,113  | 183                      | 299                                | 518                                  | 567                   | 1,567 |
| Dec 2020       | 6,539             | 1,199                              | 207                                  | 43                    | 7,989  | 204                      | 390                                | 504                                  | 491                   | 1,588 |
| Jan 2021       | 7,343             | 1,245                              | 242                                  | 59                    | 8,890  | 221                      | 414                                | 589                                  | 727                   | 1,952 |
| Feb 2021       | 7,343             | 1,182                              | 253                                  | 66                    | 8,844  | 225                      | 388                                | 641                                  | 852                   | 2,106 |
| Mar 2021       | 7,485             | 1,267                              | 222                                  | 53                    | 9,027  | 231                      | 402                                | 546                                  | 588                   | 1,767 |
| Apr 2021       | 7,057             | 1,208                              | 206                                  | 48                    | 8,519  | 215                      | 395                                | 497                                  | 616                   | 1,722 |
| May 2021       | 6,857             | 1,067                              | 179                                  | 45                    | 8,149  | 207                      | 330                                | 431                                  | 578                   | 1,546 |
| Jun 2021       | 6,483             | 1,033                              | 193                                  | 46                    | 7,755  | 195                      | 338                                | 463                                  | 534                   | 1,530 |
| Jul 2021       | 6,019             | 848                                | 155                                  | 34                    | 7,056  | 175                      | 272                                | 375                                  | 403                   | 1,225 |
| Aug 2021       | 5,943             | 820                                | 168                                  | 36                    | 6,966  | 173                      | 259                                | 411                                  | 395                   | 1,237 |
| Sep 2021       | 6,466             | 954                                | 177                                  | 45                    | 7,642  | 190                      | 304                                | 433                                  | 508                   | 1,434 |
| Oct 2021       | 7,370             | 1,111                              | 218                                  | 56                    | 8,755  | 224                      | 344                                | 527                                  | 635                   | 1,730 |
| Nov 2021       | 7,399             | 1,105                              | 200                                  | 50                    | 8,754  | 219                      | 342                                | 488                                  | 618                   | 1,667 |
| Dec 2021       | 7,291             | 1,118                              | 179                                  | 38                    | 8,625  | 221                      | 340                                | 438                                  | 469                   | 1,468 |
| Jan 2022       | 8,982             | 1,283                              | 239                                  | 77                    | 10,581 | 264                      | 387                                | 597                                  | 876                   | 2,125 |
| Feb 2022       | 9,368             | 1,367                              | 305                                  | 96                    | 11,135 | 280                      | 431                                | 752                                  | 1,052                 | 2,514 |
| Mar 2022       | 9,266             | 1,410                              | 317                                  | 122                   | 11,115 | 275                      | 435                                | 809                                  | 1,466                 | 2,985 |
| Apr 2022       | 11,137            | 1,872                              | 443                                  | 161                   | 13,614 | 338                      | 571                                | 1,111                                | 1,941                 | 3,961 |
| May 2022       | 11,253            | 2,031                              | 464                                  | 167                   | 13,915 | 347                      | 619                                | 1,143                                | 1,946                 | 4,055 |
| Jun 2022       | 10,138            | 1,801                              | 396                                  | 124                   | 12,459 | 319                      | 559                                | 970                                  | 1,448                 | 3,297 |
| Jul 2022       | 8,296             | 1,616                              | 332                                  | 93                    | 10,337 | 267                      | 497                                | 815                                  | 1,041                 | 2,621 |
| Aug 2022       | 7,610             | 1,466                              | 333                                  | 79                    | 9,489  | 235                      | 478                                | 795                                  | 828                   | 2,336 |
| Sep 2022       | 9,325             | 1,768                              | 395                                  | 138                   | 11,627 | 296                      | 552                                | 995                                  | 1,649                 | 3,492 |
| Oct 2022       | 11,843            | 2,427                              | 526                                  | 173                   | 14,968 | 388                      | 749                                | 1,312                                | 1,961                 | 4,411 |

## Municipal Securities Market Trading Summary

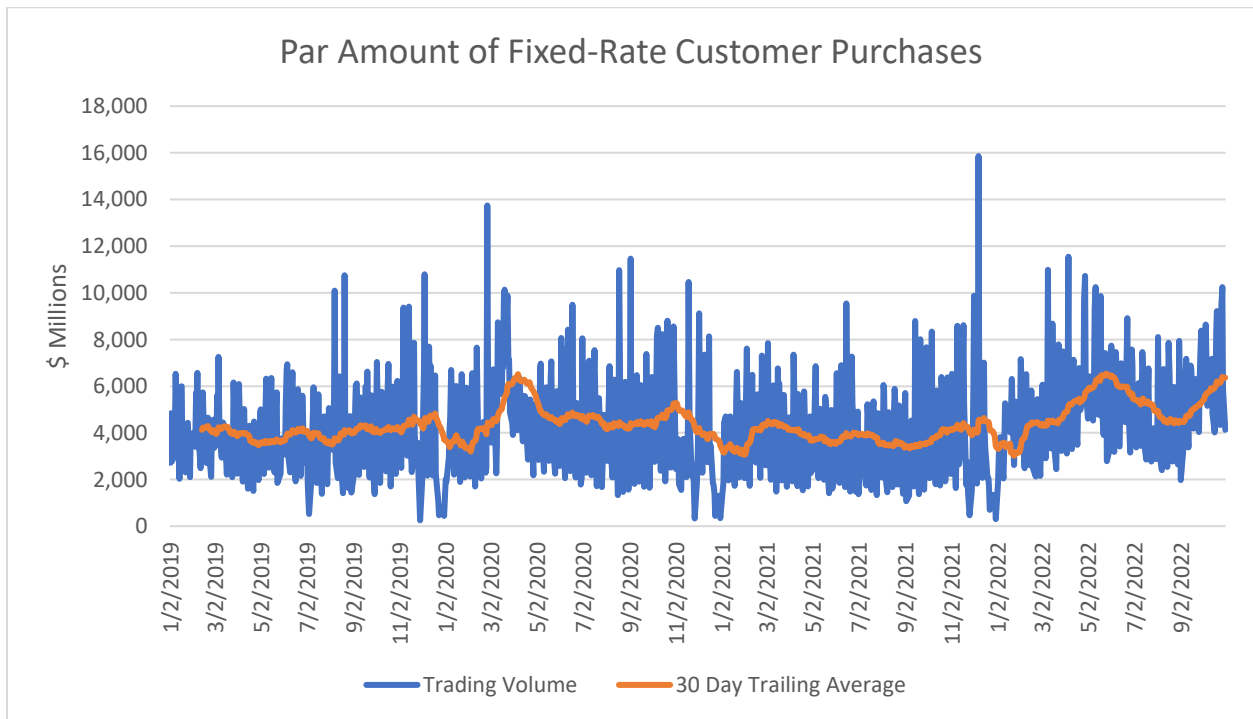
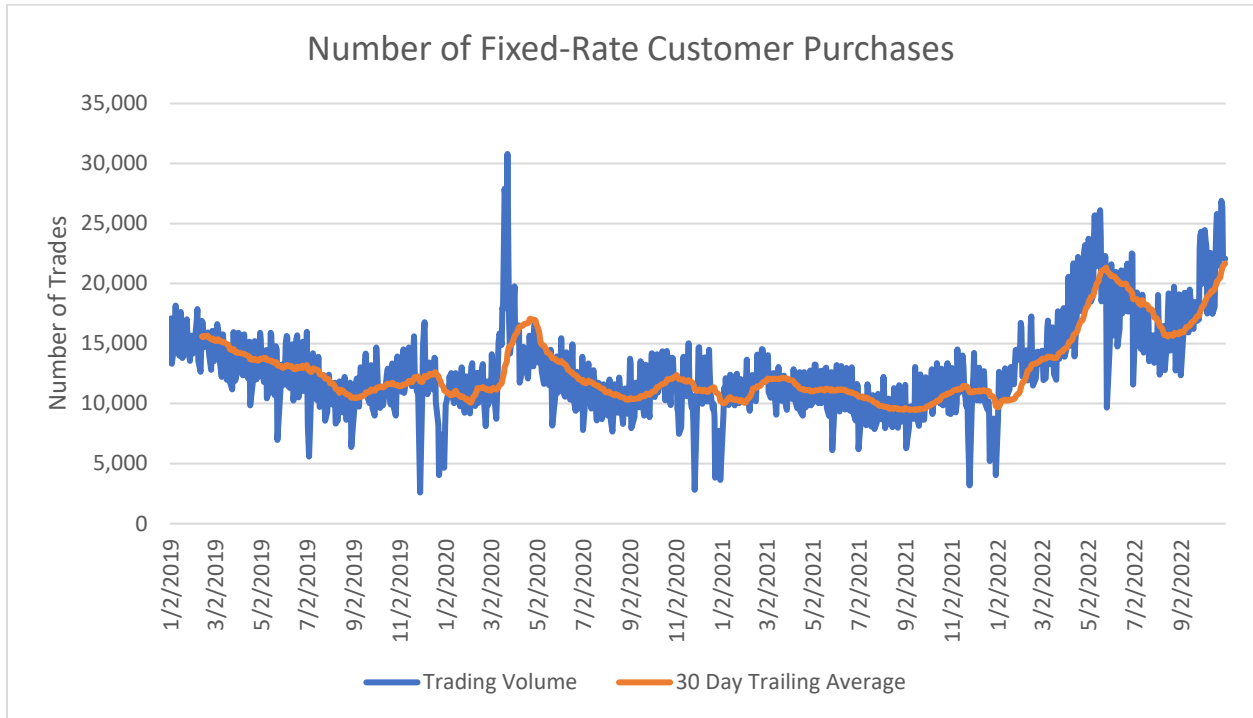
### Customer Purchases to Sale Net: Fixed-Rate Trades

| Daily Averages | Number of Trades  |                                    |                                      |                       |       | Par Traded (\$ Millions) |                                    |                                      |                       |       |
|----------------|-------------------|------------------------------------|--------------------------------------|-----------------------|-------|--------------------------|------------------------------------|--------------------------------------|-----------------------|-------|
|                | \$100,000 or less | More than \$100,000 to \$1 Million | More than \$1 Million to \$5 Million | More than \$5 Million | Total | \$100,000 or less        | More than \$100,000 to \$1 Million | More than \$1 Million to \$5 Million | More than \$5 Million | Total |
| 2019           | 3,766             | 1,073                              | 236                                  | 76                    | 5,151 | 142                      | 378                                | 536                                  | 1,155                 | 2,211 |
| 2020           | 2,559             | 1,065                              | 294                                  | 82                    | 4,000 | 86                       | 438                                | 674                                  | 1,256                 | 2,455 |
| 2021           | 1,200             | 960                                | 275                                  | 79                    | 2,514 | 50                       | 395                                | 622                                  | 1,197                 | 2,265 |
| 2022           | 4,280             | 856                                | 193                                  | 70                    | 5,398 | 155                      | 315                                | 455                                  | 1,167                 | 2,092 |
| Apr 2020       | 4,073             | 777                                | 227                                  | 63                    | 5,141 | 116                      | 323                                | 527                                  | 952                   | 1,918 |
| May 2020       | 3,216             | 1,097                              | 272                                  | 77                    | 4,662 | 98                       | 442                                | 621                                  | 1,123                 | 2,285 |
| Jun 2020       | 2,785             | 1,319                              | 362                                  | 93                    | 4,559 | 95                       | 551                                | 819                                  | 1,455                 | 2,920 |
| Jul 2020       | 2,415             | 1,174                              | 347                                  | 102                   | 4,038 | 81                       | 496                                | 815                                  | 1,535                 | 2,927 |
| Aug 2020       | 2,120             | 1,139                              | 310                                  | 97                    | 3,666 | 72                       | 469                                | 686                                  | 1,576                 | 2,803 |
| Sep 2020       | 2,309             | 1,241                              | 351                                  | 102                   | 4,003 | 81                       | 519                                | 821                                  | 1,469                 | 2,890 |
| Oct 2020       | 2,996             | 1,543                              | 525                                  | 149                   | 5,213 | 104                      | 656                                | 1,226                                | 2,048                 | 4,034 |
| Nov 2020       | 1,953             | 999                                | 198                                  | 43                    | 3,193 | 70                       | 388                                | 431                                  | 663                   | 1,552 |
| Dec 2020       | 1,337             | 826                                | 234                                  | 54                    | 2,451 | 50                       | 344                                | 539                                  | 911                   | 1,844 |
| Jan 2021       | 1,002             | 1,032                              | 248                                  | 67                    | 2,349 | 46                       | 421                                | 561                                  | 930                   | 1,958 |
| Feb 2021       | 1,779             | 1,134                              | 296                                  | 86                    | 3,295 | 66                       | 476                                | 651                                  | 1,340                 | 2,532 |
| Mar 2021       | 1,270             | 1,020                              | 286                                  | 80                    | 2,656 | 50                       | 438                                | 650                                  | 1,090                 | 2,228 |
| Apr 2021       | 1,167             | 968                                | 255                                  | 70                    | 2,460 | 49                       | 394                                | 574                                  | 1,010                 | 2,027 |
| May 2021       | 1,459             | 1,146                              | 289                                  | 69                    | 2,963 | 59                       | 463                                | 624                                  | 973                   | 2,118 |
| Jun 2021       | 1,654             | 1,061                              | 319                                  | 90                    | 3,124 | 64                       | 431                                | 709                                  | 1,399                 | 2,603 |
| Jul 2021       | 1,171             | 954                                | 285                                  | 79                    | 2,489 | 49                       | 382                                | 654                                  | 1,120                 | 2,204 |
| Aug 2021       | 1,296             | 939                                | 271                                  | 82                    | 2,587 | 55                       | 389                                | 611                                  | 1,176                 | 2,231 |
| Sep 2021       | 1,012             | 862                                | 269                                  | 83                    | 2,226 | 47                       | 356                                | 615                                  | 1,278                 | 2,296 |
| Oct 2021       | 1,045             | 954                                | 338                                  | 89                    | 2,426 | 46                       | 406                                | 787                                  | 1,235                 | 2,474 |
| Nov 2021       | 826               | 841                                | 268                                  | 77                    | 2,011 | 40                       | 345                                | 609                                  | 1,103                 | 2,097 |
| Dec 2021       | 724               | 670                                | 192                                  | 73                    | 1,659 | 36                       | 268                                | 440                                  | 1,734                 | 2,477 |
| Jan 2022       | 736               | 682                                | 196                                  | 71                    | 1,685 | 43                       | 274                                | 461                                  | 1,120                 | 1,897 |
| Feb 2022       | 1,511             | 878                                | 220                                  | 61                    | 2,670 | 66                       | 346                                | 490                                  | 839                   | 1,741 |
| Mar 2022       | 2,661             | 821                                | 206                                  | 80                    | 3,767 | 101                      | 325                                | 488                                  | 1,250                 | 2,163 |
| Apr 2022       | 3,981             | 865                                | 226                                  | 67                    | 5,139 | 146                      | 352                                | 541                                  | 999                   | 2,037 |
| May 2022       | 5,634             | 1,081                              | 215                                  | 67                    | 6,996 | 203                      | 408                                | 516                                  | 1,075                 | 2,201 |
| Jun 2022       | 5,632             | 959                                | 216                                  | 81                    | 6,889 | 200                      | 347                                | 501                                  | 1,292                 | 2,339 |
| Jul 2022       | 4,567             | 743                                | 168                                  | 72                    | 5,551 | 160                      | 254                                | 392                                  | 1,124                 | 1,931 |
| Aug 2022       | 5,503             | 919                                | 184                                  | 72                    | 6,677 | 198                      | 316                                | 443                                  | 1,353                 | 2,310 |
| Sep 2022       | 5,829             | 788                                | 142                                  | 61                    | 6,821 | 204                      | 260                                | 344                                  | 1,257                 | 2,066 |
| Oct 2022       | 6,451             | 804                                | 161                                  | 61                    | 7,477 | 223                      | 269                                | 370                                  | 1,299                 | 2,160 |

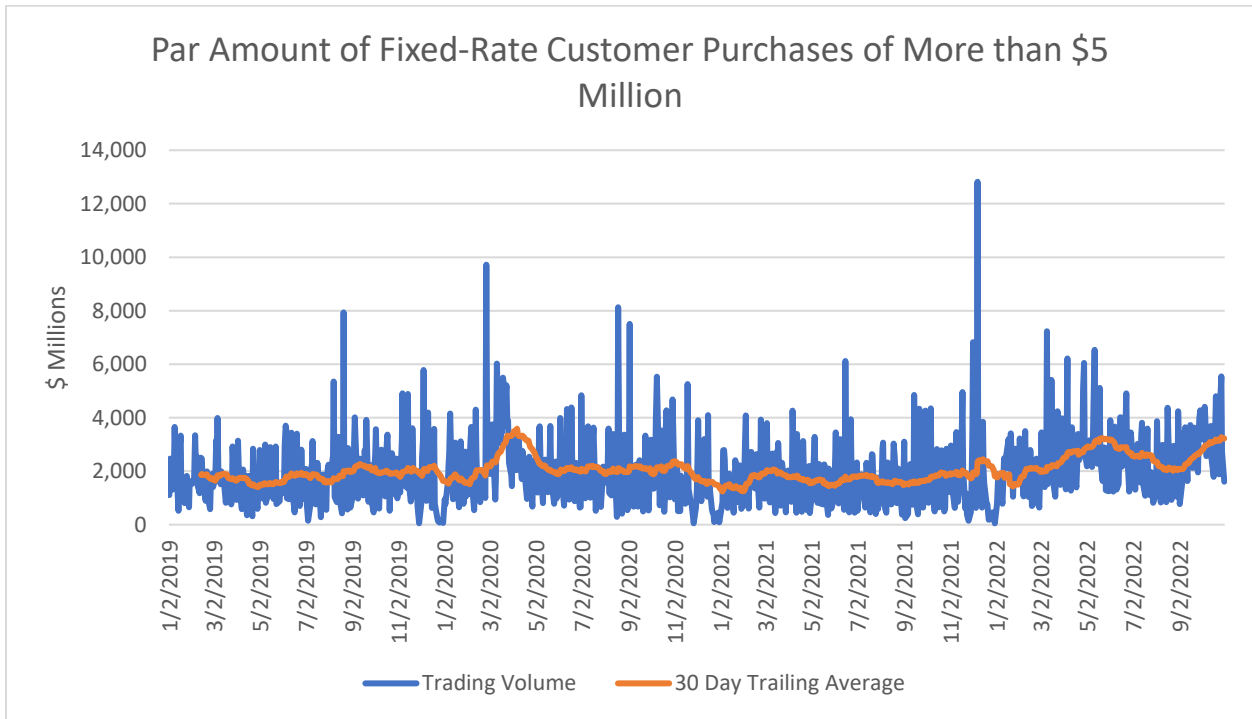
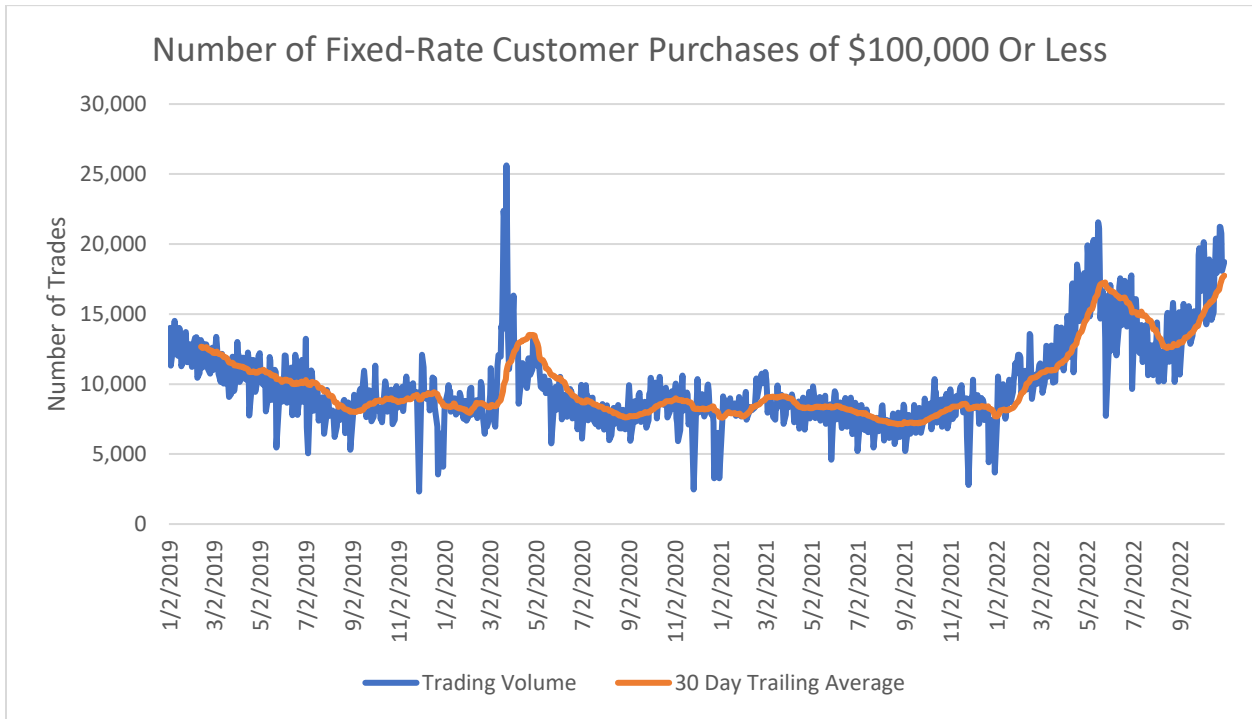
# Municipal Securities Market Trading Summary

## 2019 – 2022 Daily Trade Activity

### Customer Purchases: Fixed-Rate Trades January 1, 2019 – October 31, 2022



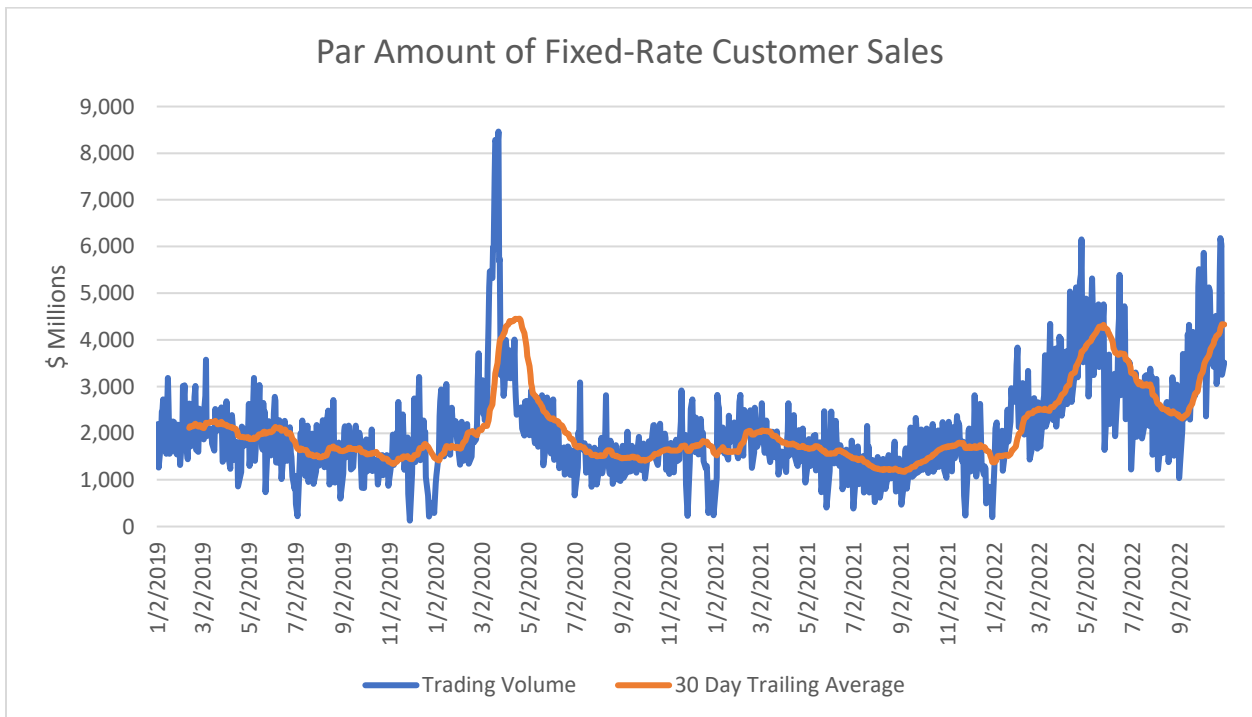
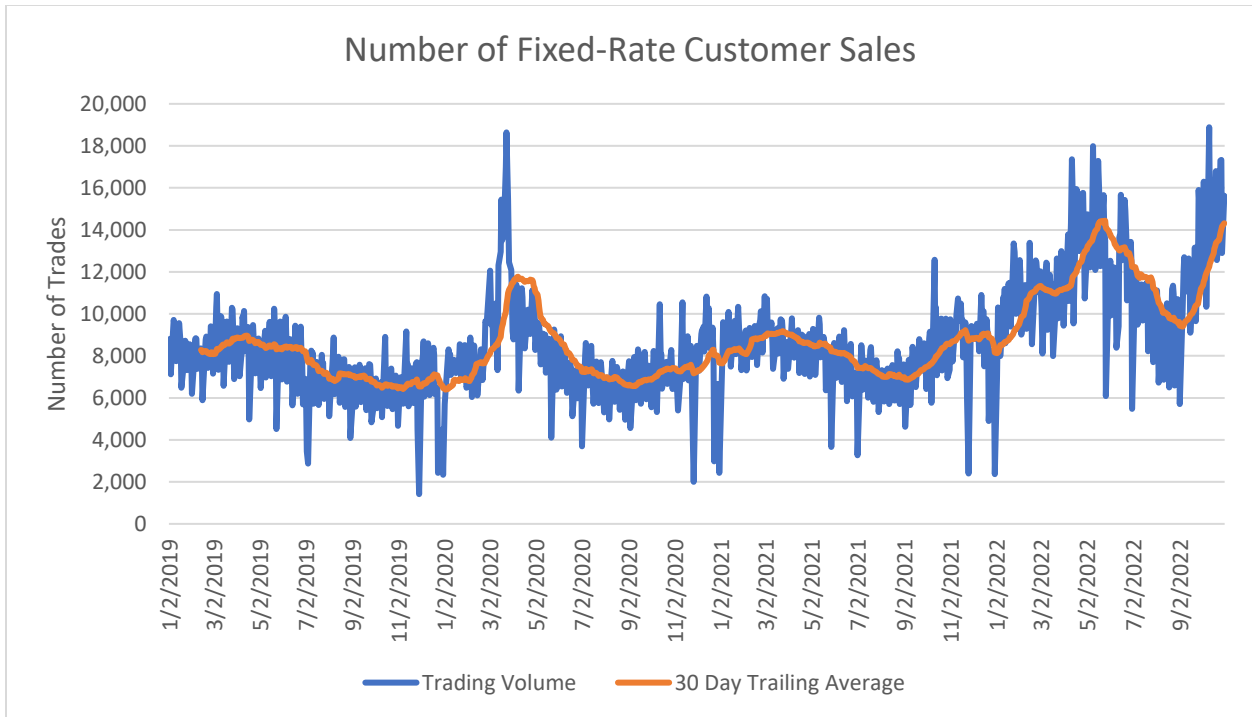
## Municipal Securities Market Trading Summary



# Municipal Securities Market Trading Summary

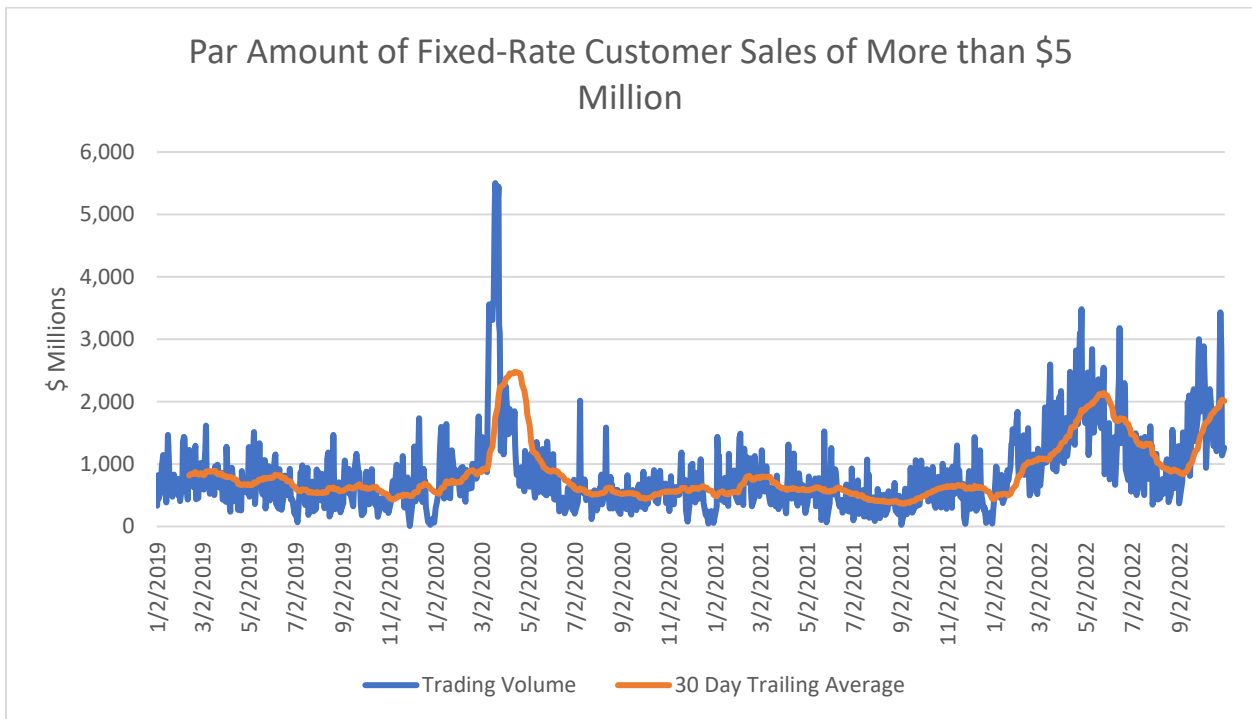
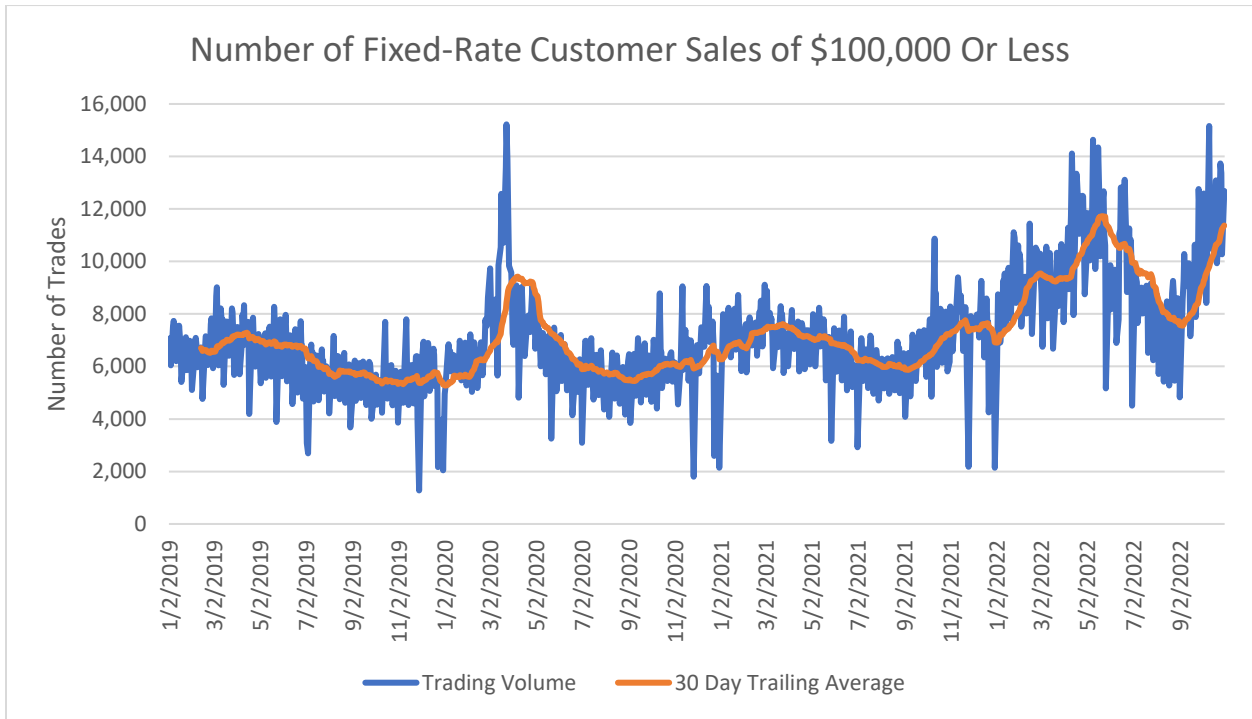
## Customer Sales: Fixed-Rate Trades

January 1, 2019 – October 31, 2022





## Municipal Securities Market Trading Summary



## Municipal Securities Market Trading Summary

### Part III: Municipal Variable-Rate Market Trading Activity

**Annual Averages 2019 – 2022**

**January 1, 2019 – October 31, 2022**

#### Customer Purchases: Variable-Rate Trades

| Daily Averages | Number of Trades  |                            |                       |       | Par Traded (\$ Millions) |                            |                       |       |
|----------------|-------------------|----------------------------|-----------------------|-------|--------------------------|----------------------------|-----------------------|-------|
|                | Under \$1 Million | \$1 Million to \$5 Million | More than \$5 Million | Total | Under \$1 Million        | \$1 Million to \$5 Million | More than \$5 Million | Total |
| 2019           | 301               | 151                        | 97                    | 549   | 85                       | 356                        | 1,503                 | 1,944 |
| 2020           | 214               | 135                        | 90                    | 439   | 64                       | 322                        | 1,390                 | 1,776 |
| 2021           | 118               | 75                         | 50                    | 243   | 32                       | 182                        | 762                   | 975   |
| 2022           | 196               | 107                        | 81                    | 385   | 48                       | 262                        | 1,324                 | 1,634 |
| Apr 2020       | 316               | 161                        | 85                    | 562   | 94                       | 375                        | 1,238                 | 1,707 |
| May 2020       | 213               | 144                        | 84                    | 440   | 64                       | 338                        | 1,191                 | 1,593 |
| Jun 2020       | 156               | 118                        | 84                    | 358   | 48                       | 288                        | 1,261                 | 1,597 |
| Jul 2020       | 167               | 125                        | 91                    | 382   | 49                       | 304                        | 1,394                 | 1,747 |
| Aug 2020       | 167               | 113                        | 58                    | 339   | 52                       | 261                        | 880                   | 1,193 |
| Sep 2020       | 131               | 104                        | 70                    | 305   | 38                       | 256                        | 1,135                 | 1,429 |
| Oct 2020       | 155               | 101                        | 75                    | 332   | 46                       | 244                        | 1,039                 | 1,330 |
| Nov 2020       | 161               | 98                         | 59                    | 318   | 47                       | 233                        | 811                   | 1,090 |
| Dec 2020       | 168               | 106                        | 62                    | 336   | 51                       | 247                        | 852                   | 1,150 |
| Jan 2021       | 167               | 60                         | 40                    | 267   | 48                       | 137                        | 609                   | 793   |
| Feb 2021       | 139               | 69                         | 42                    | 251   | 38                       | 163                        | 612                   | 813   |
| Mar 2021       | 122               | 85                         | 64                    | 272   | 32                       | 207                        | 976                   | 1,215 |
| Apr 2021       | 129               | 98                         | 63                    | 291   | 34                       | 238                        | 883                   | 1,155 |
| May 2021       | 135               | 90                         | 59                    | 283   | 38                       | 218                        | 747                   | 1,003 |
| Jun 2021       | 122               | 76                         | 44                    | 243   | 34                       | 183                        | 753                   | 970   |
| Jul 2021       | 97                | 55                         | 39                    | 191   | 26                       | 132                        | 646                   | 803   |
| Aug 2021       | 111               | 52                         | 25                    | 188   | 29                       | 122                        | 365                   | 516   |
| Sep 2021       | 91                | 72                         | 51                    | 214   | 25                       | 181                        | 889                   | 1,095 |
| Oct 2021       | 96                | 72                         | 55                    | 224   | 24                       | 181                        | 786                   | 992   |
| Nov 2021       | 100               | 77                         | 52                    | 229   | 25                       | 193                        | 751                   | 968   |
| Dec 2021       | 113               | 90                         | 69                    | 273   | 30                       | 222                        | 1,094                 | 1,346 |
| Jan 2022       | 114               | 67                         | 56                    | 237   | 27                       | 167                        | 852                   | 1,046 |
| Feb 2022       | 132               | 103                        | 91                    | 325   | 30                       | 260                        | 1,545                 | 1,835 |
| Mar 2022       | 153               | 115                        | 102                   | 369   | 41                       | 293                        | 1,588                 | 1,922 |
| Apr 2022       | 214               | 118                        | 82                    | 414   | 52                       | 286                        | 1,264                 | 1,602 |
| May 2022       | 234               | 128                        | 104                   | 466   | 59                       | 312                        | 1,742                 | 2,114 |
| Jun 2022       | 286               | 113                        | 80                    | 479   | 63                       | 277                        | 1,276                 | 1,617 |
| Jul 2022       | 179               | 94                         | 71                    | 344   | 43                       | 235                        | 1,267                 | 1,546 |
| Aug 2022       | 208               | 101                        | 65                    | 374   | 52                       | 242                        | 1,061                 | 1,355 |
| Sep 2022       | 192               | 105                        | 84                    | 382   | 47                       | 255                        | 1,428                 | 1,731 |
| Oct 2022       | 246               | 124                        | 78                    | 447   | 60                       | 292                        | 1,199                 | 1,550 |

## Municipal Securities Market Trading Summary

### Customer Sales: Variable-Rate Trades

| Daily Averages | Number of Trades  |                            |                       |       | Par Traded (\$ Millions) |                            |                       |       |
|----------------|-------------------|----------------------------|-----------------------|-------|--------------------------|----------------------------|-----------------------|-------|
|                | Under \$1 Million | \$1 Million to \$5 Million | More than \$5 Million | Total | Under \$1 Million        | \$1 Million to \$5 Million | More than \$5 Million | Total |
| 2019           | 354               | 137                        | 87                    | 578   | 97                       | 319                        | 1,343                 | 1,758 |
| 2020           | 329               | 124                        | 80                    | 533   | 89                       | 287                        | 1,257                 | 1,633 |
| 2021           | 171               | 63                         | 41                    | 275   | 36                       | 173                        | 708                   | 917   |
| 2022           | 197               | 90                         | 74                    | 360   | 46                       | 223                        | 1,189                 | 1,458 |
| Apr 2020       | 405               | 148                        | 75                    | 628   | 110                      | 340                        | 1,148                 | 1,598 |
| May 2020       | 361               | 117                        | 66                    | 544   | 96                       | 266                        | 983                   | 1,345 |
| Jun 2020       | 322               | 109                        | 69                    | 501   | 86                       | 254                        | 1,064                 | 1,404 |
| Jul 2020       | 275               | 111                        | 80                    | 466   | 75                       | 258                        | 1,257                 | 1,591 |
| Aug 2020       | 221               | 78                         | 45                    | 344   | 55                       | 177                        | 736                   | 968   |
| Sep 2020       | 270               | 103                        | 63                    | 436   | 73                       | 238                        | 1,042                 | 1,354 |
| Oct 2020       | 231               | 85                         | 65                    | 381   | 61                       | 205                        | 940                   | 1,205 |
| Nov 2020       | 206               | 86                         | 50                    | 341   | 55                       | 200                        | 687                   | 941   |
| Dec 2020       | 225               | 87                         | 52                    | 364   | 59                       | 197                        | 766                   | 1,022 |
| Jan 2021       | 198               | 50                         | 30                    | 278   | 48                       | 108                        | 486                   | 642   |
| Feb 2021       | 212               | 68                         | 42                    | 322   | 55                       | 159                        | 634                   | 848   |
| Mar 2021       | 223               | 76                         | 49                    | 348   | 56                       | 179                        | 770                   | 1,005 |
| Apr 2021       | 198               | 79                         | 52                    | 329   | 50                       | 186                        | 737                   | 973   |
| May 2021       | 201               | 72                         | 43                    | 316   | 51                       | 166                        | 562                   | 779   |
| Jun 2021       | 160               | 54                         | 34                    | 248   | 39                       | 127                        | 522                   | 689   |
| Jul 2021       | 130               | 47                         | 33                    | 210   | 30                       | 109                        | 582                   | 721   |
| Aug 2021       | 126               | 38                         | 17                    | 181   | 29                       | 91                         | 219                   | 339   |
| Sep 2021       | 159               | 72                         | 49                    | 280   | 41                       | 174                        | 777                   | 992   |
| Oct 2021       | 160               | 64                         | 40                    | 265   | 40                       | 156                        | 585                   | 781   |
| Nov 2021       | 151               | 69                         | 46                    | 266   | 35                       | 163                        | 669                   | 867   |
| Dec 2021       | 147               | 73                         | 56                    | 276   | 36                       | 177                        | 849                   | 1,061 |
| Jan 2022       | 155               | 70                         | 65                    | 290   | 35                       | 176                        | 1,036                 | 1,247 |
| Feb 2022       | 163               | 90                         | 73                    | 326   | 39                       | 223                        | 1,109                 | 1,371 |
| Mar 2022       | 171               | 89                         | 87                    | 347   | 40                       | 230                        | 1,406                 | 1,676 |
| Apr 2022       | 223               | 102                        | 76                    | 401   | 50                       | 249                        | 1,194                 | 1,493 |
| May 2022       | 201               | 94                         | 94                    | 390   | 46                       | 237                        | 1,625                 | 1,908 |
| Jun 2022       | 205               | 89                         | 69                    | 363   | 49                       | 222                        | 1,126                 | 1,396 |
| Jul 2022       | 204               | 99                         | 80                    | 383   | 51                       | 247                        | 1,310                 | 1,608 |
| Aug 2022       | 182               | 66                         | 45                    | 292   | 43                       | 159                        | 712                   | 914   |
| Sep 2022       | 233               | 113                        | 91                    | 436   | 58                       | 274                        | 1,490                 | 1,822 |
| Oct 2022       | 233               | 91                         | 56                    | 380   | 52                       | 219                        | 881                   | 1,151 |

## Municipal Securities Market Trading Summary

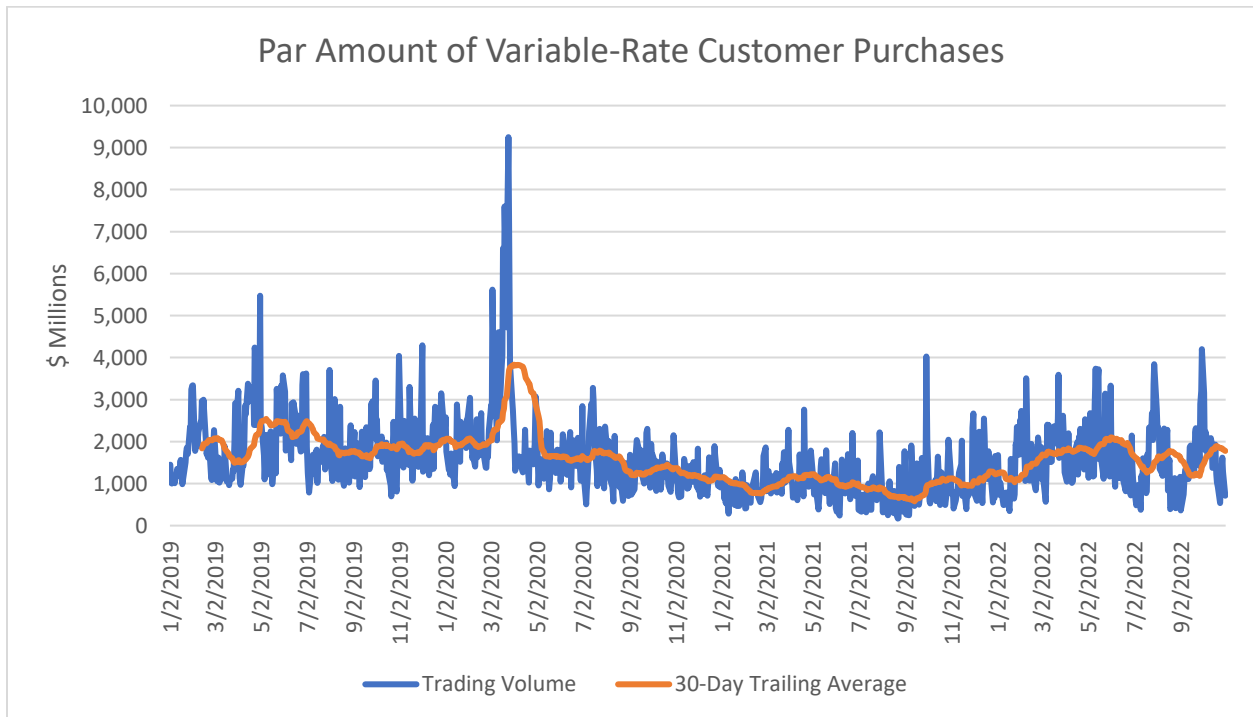
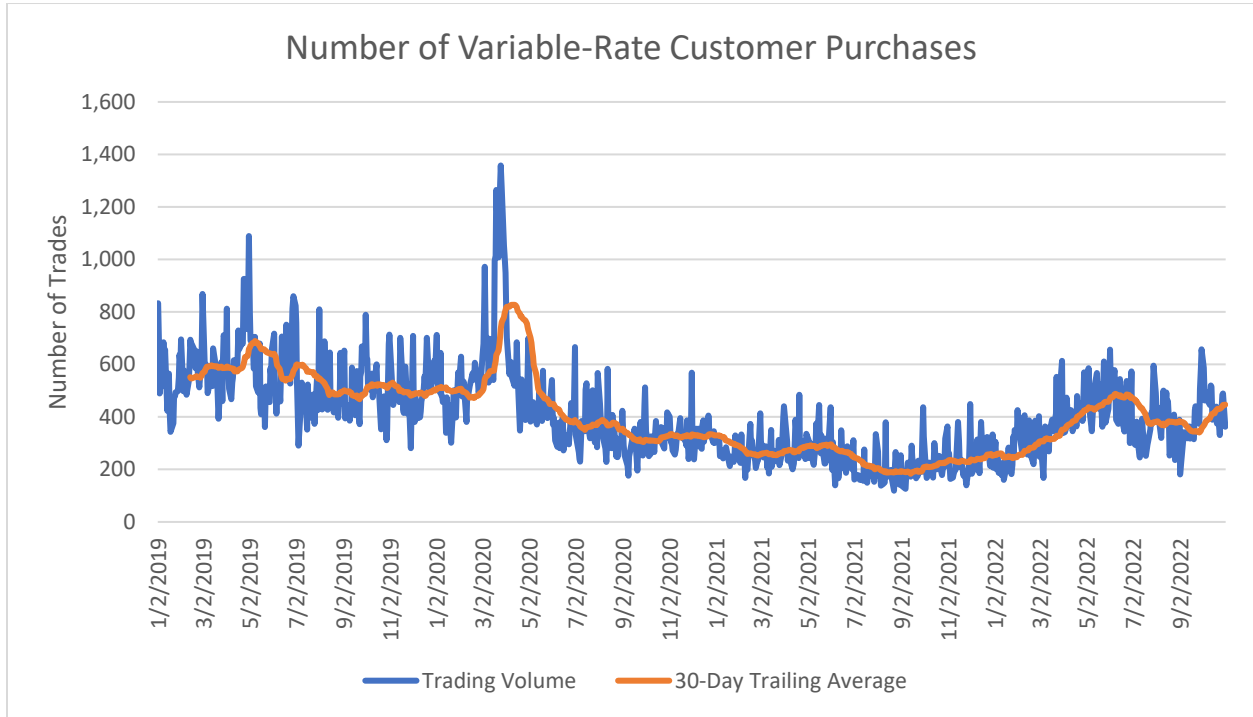
### Customer Purchases to Sale Net: Variable-Rate Trades

| Daily Averages | Number of Trades  |                            |                       |       | Par Traded (\$ Millions) |                            |                       |       |
|----------------|-------------------|----------------------------|-----------------------|-------|--------------------------|----------------------------|-----------------------|-------|
|                | Under \$1 Million | \$1 Million to \$5 Million | More than \$5 Million | Total | Under \$1 Million        | \$1 Million to \$5 Million | More than \$5 Million | Total |
| 2019           | -53               | 14                         | 10                    | -28   | -11                      | 37                         | 160                   | 186   |
| 2020           | -116              | 11                         | 10                    | -94   | -25                      | 35                         | 133                   | 142   |
| 2021           | -53               | 11                         | 10                    | -32   | -4                       | 9                          | 53                    | 58    |
| 2022           | -1                | 17                         | 8                     | 24    | 2                        | 40                         | 135                   | 176   |
| Apr 2020       | -88               | 14                         | 10                    | -65   | -16                      | 36                         | 90                    | 109   |
| May 2020       | -148              | 26                         | 18                    | -104  | -32                      | 72                         | 208                   | 248   |
| Jun 2020       | -166              | 9                          | 15                    | -142  | -38                      | 35                         | 197                   | 194   |
| Jul 2020       | -108              | 14                         | 11                    | -83   | -26                      | 45                         | 137                   | 157   |
| Aug 2020       | -54               | 36                         | 13                    | -5    | -3                       | 84                         | 144                   | 225   |
| Sep 2020       | -139              | 2                          | 7                     | -130  | -35                      | 18                         | 92                    | 75    |
| Oct 2020       | -76               | 16                         | 10                    | -49   | -15                      | 40                         | 100                   | 125   |
| Nov 2020       | -44               | 12                         | 9                     | -23   | -8                       | 33                         | 124                   | 149   |
| Dec 2020       | -57               | 19                         | 10                    | -28   | -8                       | 50                         | 85                    | 128   |
| Jan 2021       | -31               | 10                         | 10                    | -10   | -1                       | 29                         | 123                   | 151   |
| Feb 2021       | -73               | 1                          | 0                     | -71   | -16                      | 4                          | -23                   | -35   |
| Mar 2021       | -100              | 8                          | 15                    | -77   | -25                      | 28                         | 206                   | 210   |
| Apr 2021       | -69               | 19                         | 11                    | -39   | -16                      | 52                         | 146                   | 182   |
| May 2021       | -66               | 18                         | 16                    | -33   | -14                      | 52                         | 185                   | 224   |
| Jun 2021       | -38               | 22                         | 11                    | -5    | -5                       | 56                         | 231                   | 282   |
| Jul 2021       | -33               | 8                          | 7                     | -18   | -4                       | 23                         | 64                    | 82    |
| Aug 2021       | -15               | 14                         | 8                     | 7     | 0                        | 31                         | 146                   | 177   |
| Sep 2021       | -68               | 0                          | 2                     | -66   | -16                      | 7                          | 113                   | 103   |
| Oct 2021       | -64               | 7                          | 15                    | -41   | -15                      | 25                         | 201                   | 211   |
| Nov 2021       | -52               | 8                          | 6                     | -37   | -11                      | 30                         | 81                    | 101   |
| Dec 2021       | -34               | 17                         | 13                    | -3    | -6                       | 45                         | 245                   | 285   |
| Jan 2022       | -41               | -3                         | -10                   | -53   | -7                       | -9                         | -185                  | -200  |
| Feb 2022       | -32               | 13                         | 18                    | -1    | -9                       | 38                         | 435                   | 464   |
| Mar 2022       | -18               | 26                         | 15                    | 23    | 0                        | 64                         | 182                   | 246   |
| Apr 2022       | -9                | 16                         | 7                     | 13    | 2                        | 37                         | 70                    | 109   |
| May 2022       | 33                | 34                         | 10                    | 77    | 13                       | 75                         | 118                   | 206   |
| Jun 2022       | 80                | 25                         | 10                    | 116   | 14                       | 56                         | 151                   | 221   |
| Jul 2022       | -25               | -5                         | -8                    | -38   | -8                       | -12                        | -42                   | -62   |
| Aug 2022       | 26                | 35                         | 20                    | 81    | 10                       | 83                         | 349                   | 442   |
| Sep 2022       | -40               | -7                         | -7                    | -55   | -10                      | -19                        | -61                   | -91   |
| Oct 2022       | 13                | 32                         | 22                    | 67    | 8                        | 73                         | 318                   | 399   |

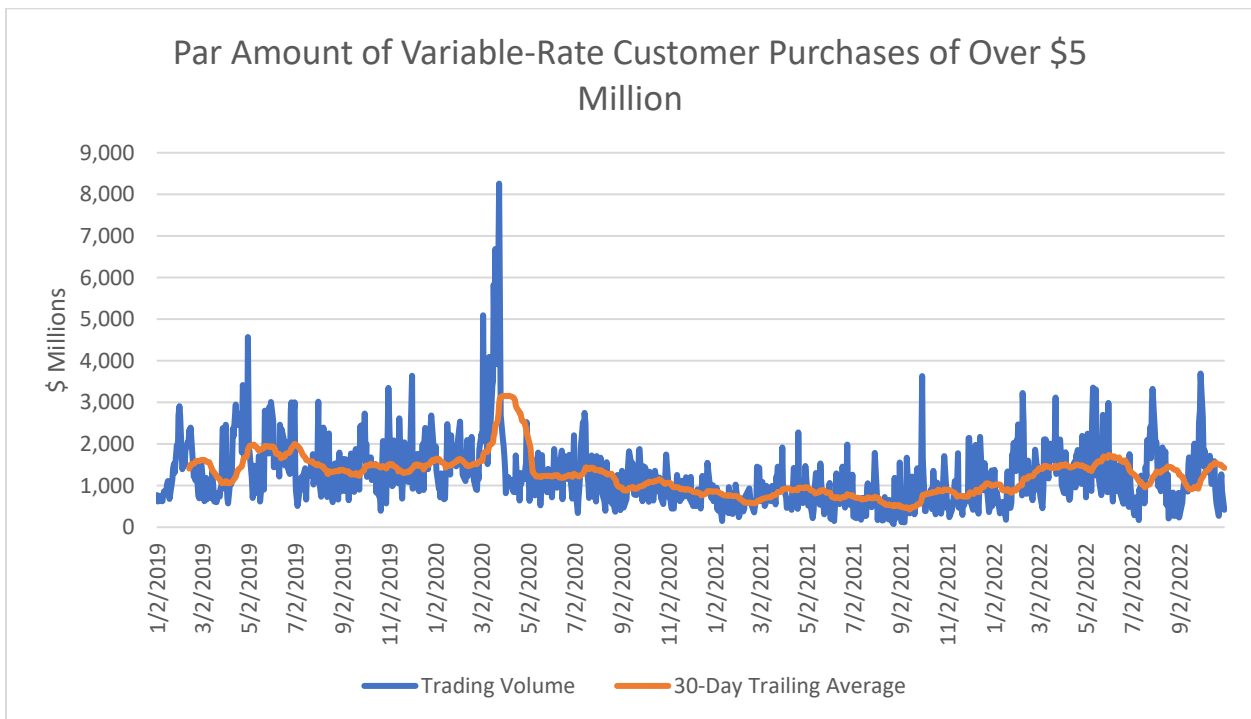
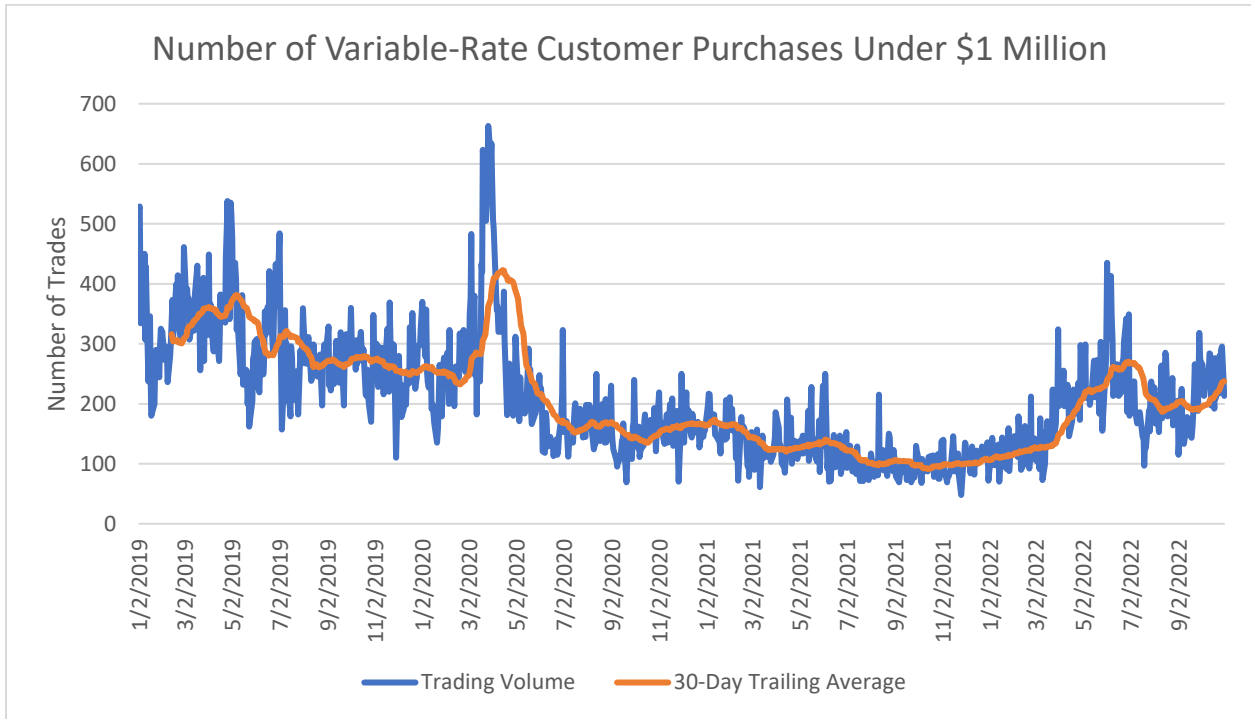
# Municipal Securities Market Trading Summary

## 2019 – 2022 Daily Trade Activity

### Customer Purchases: Variable-Rate Trades January 1, 2019 – October 31, 2022

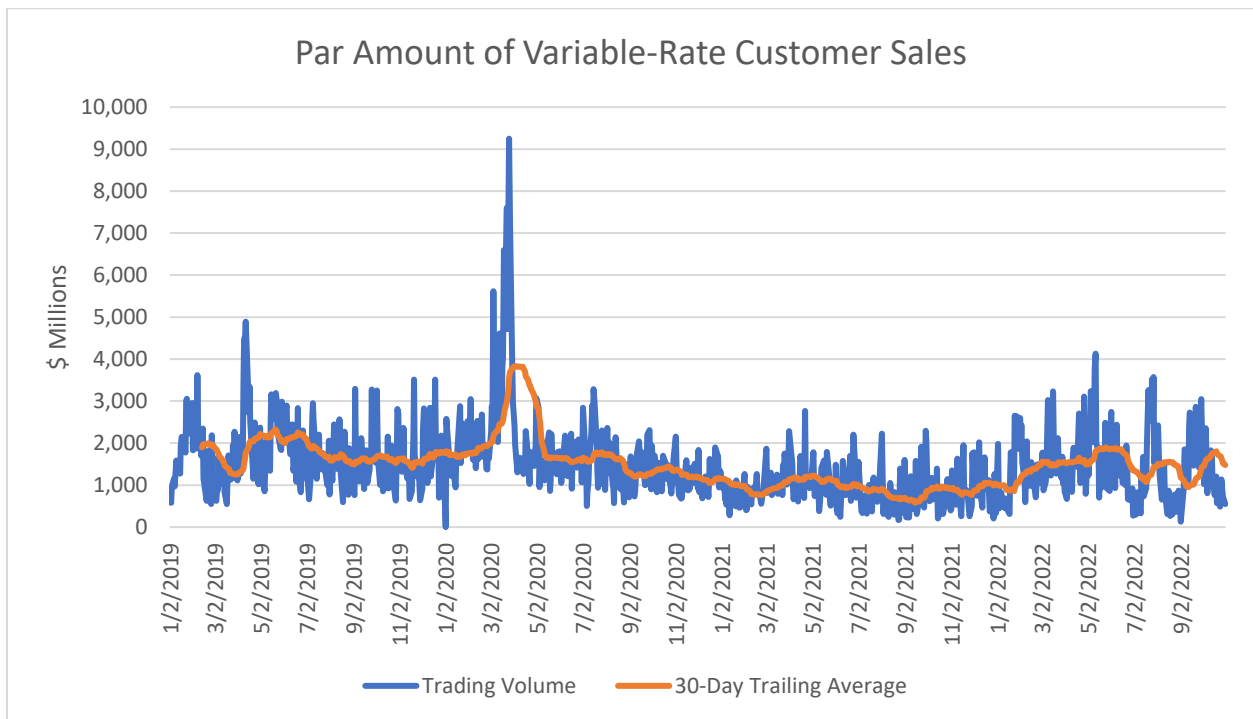
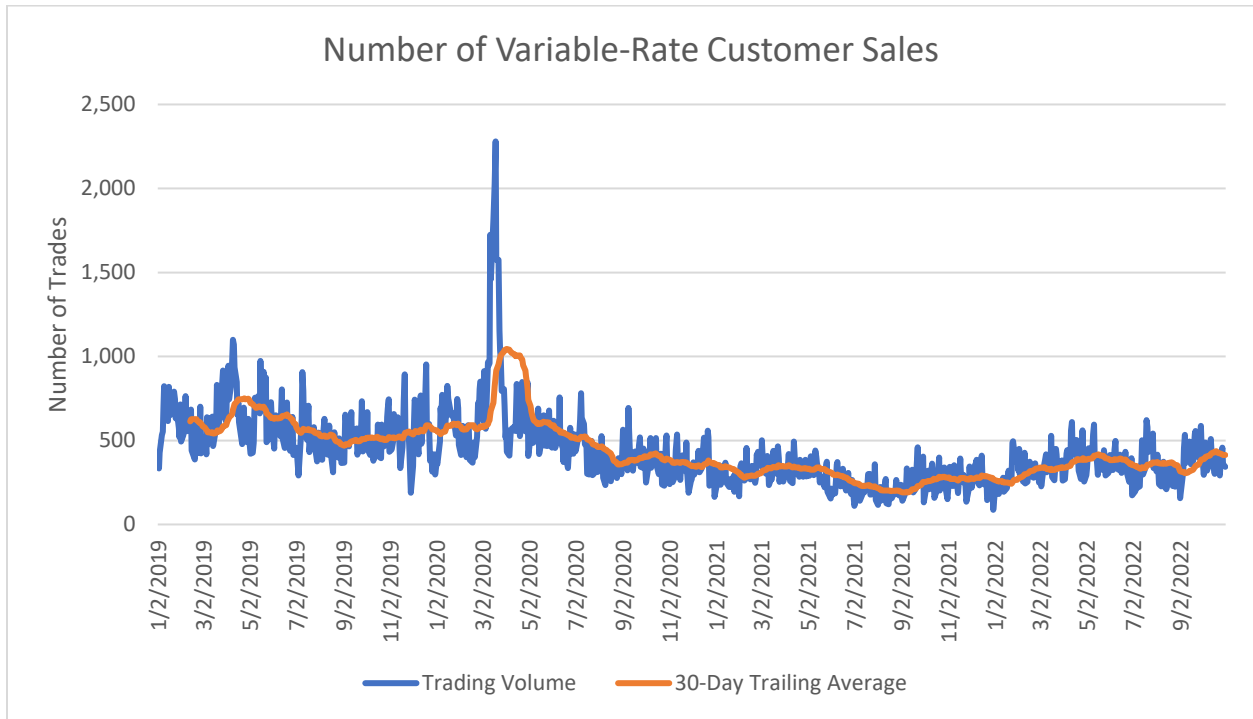


## Municipal Securities Market Trading Summary



## Municipal Securities Market Trading Summary

### Customer Sales: Variable-Rate Trades January 1, 2019 – October 31, 2022



## Municipal Securities Market Trading Summary

