Quarterly Report: US Fixed Income, 2Q23
August 2023

Key Takeaways from the Quarter

- **Total**
  - Issuance $2,489.4B, +8.7% Y/Y
  - Trading $1,016.9B, +3.7% Y/Y
- **UST**
  - Issuance $1,256.5B, +20.6% Y/Y
  - Trading $715.2B, +4.4% Y/Y
- **MBS**
  - Issuance $352.9B, -39.0% Y/Y
  - Trading $242.3B, +4.1% Y/Y
- **Corporates**
  - Issuance $391.2B, +26.5% Y/Y
  - Trading $40.7B, -1.5% Y/Y
- **Agency**
  - Issuance $318.8B, +118.1% Y/Y
  - Trading $3.6B, +38.1% Y/Y
- **Munis**
  - Issuance $102.2B, -11.0% Y/Y
  - Trading $12.4B, -21.8% Y/Y
- **ABS**
  - Issuance $67.8B, -32.4% Y/Y
  - Trading $1.6B, -4.9% Y/Y
- **ESG**
  - Global Issuance $237.0B, +27.6% Y/Y
  - US Issuance $33.9B, +133.9% Y/Y
Contents

Executive Summary................................................................................................................................. 4
US Fixed Income Markets Are the Largest in the World .............................................................................. 4
Quarter & Annual Highlights ....................................................................................................................... 5
Total US Fixed Income .............................................................................................................................. 6
Total US Fixed Income: Review of Quarterly Statistics .............................................................................. 6
Total US Fixed Income: Monthly Trends .................................................................................................. 7
Total US Fixed Income: Annual Statistics Update ...................................................................................... 7
US Treasury Securities (UST) .................................................................................................................... 8
UST: Review of Quarterly Statistics .......................................................................................................... 8
UST: Monthly Trends ............................................................................................................................... 10
UST: Annual Statistics Update .................................................................................................................. 11
Mortgage-Backed Securities (MBS) .......................................................................................................... 12
MBS: Review of Quarterly Statistics ......................................................................................................... 12
MBS: Monthly Trends ............................................................................................................................. 13
MBS: Annual Statistics Update ................................................................................................................ 13
Corporate Bonds (Corporates) .................................................................................................................. 14
Corporates: Review of Quarterly Statistics ................................................................................................. 14
Corporates: Monthly Trends .................................................................................................................... 16
Corporates: Annual Statistics Update ....................................................................................................... 16
Federal Agency Securities (Agency) .......................................................................................................... 17
Agency: Review of Quarterly Statistics ...................................................................................................... 17
Agency: Monthly Trends .......................................................................................................................... 18
Agency: Annual Statistics Update ............................................................................................................. 18
Municipal Bonds (Munis) .......................................................................................................................... 19
Munis: Review of Quarterly Statistics ....................................................................................................... 19
Munis: Monthly Trends ............................................................................................................................ 21
Munis: Annual Statistics Update ............................................................................................................... 21
Asset-Backed Securities (ABS) ................................................................................................................ 22
ABS: Review of Quarterly Statistics ......................................................................................................... 22
ABS: Monthly Trends ............................................................................................................................... 23
ABS: Annual Statistics Update ................................................................................................................ 23
Environmental, Social & Governance (ESG) ............................................................................................ 24
ESG: Review of Quarterly Issuance Statistics ............................................................................................. 24
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESG: Monthly Issuance Trends</td>
<td>25</td>
</tr>
<tr>
<td>ESG: Annual Issuance Update</td>
<td>25</td>
</tr>
<tr>
<td>Quarterly Rates Review</td>
<td>26</td>
</tr>
<tr>
<td>Volatility (MOVE Index)</td>
<td>26</td>
</tr>
<tr>
<td>UST Rates</td>
<td>27</td>
</tr>
<tr>
<td>Other Rates</td>
<td>30</td>
</tr>
<tr>
<td>Curves &amp; Spreads</td>
<td>31</td>
</tr>
<tr>
<td>Appendix: Historical Trends</td>
<td>32</td>
</tr>
<tr>
<td>Total Fixed Income Securities</td>
<td>32</td>
</tr>
<tr>
<td>US Treasury Securities</td>
<td>33</td>
</tr>
<tr>
<td>Mortgage-Backed Securities</td>
<td>34</td>
</tr>
<tr>
<td>Corporate Bonds</td>
<td>35</td>
</tr>
<tr>
<td>Federal Agency Securities</td>
<td>36</td>
</tr>
<tr>
<td>Municipal Bonds</td>
<td>37</td>
</tr>
<tr>
<td>Asset-Backed Securities</td>
<td>38</td>
</tr>
<tr>
<td>Environmental, Social, and Governance (ESG)</td>
<td>39</td>
</tr>
<tr>
<td>Appendix: Definitions &amp; Purpose</td>
<td>40</td>
</tr>
<tr>
<td>Appendix: Terms to Know</td>
<td>42</td>
</tr>
<tr>
<td>Appendix: SIFMA Research Reports</td>
<td>43</td>
</tr>
<tr>
<td>Authors</td>
<td>44</td>
</tr>
</tbody>
</table>
Executive Summary

US Fixed Income Markets Are the Largest in the World

The U.S. fixed income markets are the largest in the world, comprising 40.0% of the $130 trillion securities outstanding across the globe, or $52 trillion (as of FY22). This is 2.3x the next largest market, the EU. U.S. market share has averaged 38.9% over the last 10 years, troughing at 37.5% in 2013 and peaking at 40.4% in 2016.

US Fixed Income Market Share – Year End

US Fixed Income Market Share – Historical Trends

Source: Bank for International Settlements (4Q22, BIS data for all countries has a lag)
Note: Country classification based on World Bank list of economies, DM = developed markets, EM = emerging markets, EU = 27 member states, HK = Hong Kong, UK = United Kingdom
Quarter & Annual Highlights

In this report, we utilized SIFMA Research’s comprehensive fixed income and securitized products databases (www.sifma.org/statistics) to recap statistics for total U.S. fixed income markets, U.S. Treasuries (UST), mortgage-backed securities (MBS), corporate bonds (corporates), municipal securities (munis), federal agency securities (agency), asset-backed securities (ABS), money markets (MM), repurchase agreements (repos) and the secured overnight financing rate (SOFR). We also analyze trends in ESG issuance for green, social, and sustainability bonds.

We highlight the following for quarterly and annual metrics:

<table>
<thead>
<tr>
<th>Issuance ($B)</th>
<th>2Q23</th>
<th>1Q23</th>
<th>2Q22</th>
<th>Q/Q</th>
<th>Y/Y</th>
<th>YTD23</th>
<th>YTD22</th>
<th>Y/Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Market</td>
<td>2,489.4</td>
<td>2,352.1</td>
<td>2,291.0</td>
<td>5.8%</td>
<td>8.7%</td>
<td>4,680.5</td>
<td>5,381.6</td>
<td>-13.0%</td>
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<tr>
<td>UST</td>
<td>1,256.5</td>
<td>986.2</td>
<td>1,041.5</td>
<td>27.4%</td>
<td>20.6%</td>
<td>1,859.5</td>
<td>2,191.8</td>
<td>-15.2%</td>
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<tr>
<td>MBS</td>
<td>352.9</td>
<td>272.6</td>
<td>578.8</td>
<td>29.4%</td>
<td>-39.0%</td>
<td>748.2</td>
<td>1,508.1</td>
<td>-50.4%</td>
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<td>Corporates</td>
<td>391.2</td>
<td>454.4</td>
<td>309.4</td>
<td>-13.9%</td>
<td>26.5%</td>
<td>845.6</td>
<td>841.5</td>
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<tr>
<td>Agency</td>
<td>318.8</td>
<td>497.3</td>
<td>146.2</td>
<td>-35.9%</td>
<td>118.1%</td>
<td>873.2</td>
<td>378.8</td>
<td>130.3%</td>
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<td>Munis</td>
<td>102.2</td>
<td>78.6</td>
<td>114.8</td>
<td>29.9%</td>
<td>-11.0%</td>
<td>207.6</td>
<td>246.5</td>
<td>-15.8%</td>
</tr>
<tr>
<td>ABS</td>
<td>67.8</td>
<td>62.8</td>
<td>100.4</td>
<td>7.9%</td>
<td>-32.4%</td>
<td>147.3</td>
<td>214.9</td>
<td>-31.4%</td>
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<tr>
<td>Trading (ADV, $B)</td>
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<td></td>
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<tr>
<td>Total Market</td>
<td>1,016.9</td>
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<td>804.1</td>
<td>684.8</td>
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<td>4.4%</td>
<td>759.7</td>
<td>734.5</td>
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<td>MBS - Agency</td>
<td>242.3</td>
<td>251.3</td>
<td>232.7</td>
<td>-3.6%</td>
<td>4.1%</td>
<td>246.8</td>
<td>255.4</td>
<td>-3.4%</td>
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<td>MBS - Non Agency</td>
<td>1.2</td>
<td>1.7</td>
<td>1.5</td>
<td>-33.1%</td>
<td>-21.1%</td>
<td>1.5</td>
<td>1.5</td>
<td>-0.6%</td>
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<td>Corporates</td>
<td>40.7</td>
<td>48.3</td>
<td>41.3</td>
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<td>-1.5%</td>
<td>44.5</td>
<td>42.3</td>
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<td>Agency</td>
<td>3.6</td>
<td>3.8</td>
<td>2.6</td>
<td>-4.6%</td>
<td>38.1%</td>
<td>3.7</td>
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<td>Munis</td>
<td>12.4</td>
<td>12.9</td>
<td>15.8</td>
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<td>-21.8%</td>
<td>12.2</td>
<td>14.0</td>
<td>-12.7%</td>
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<tr>
<td>ABS</td>
<td>1.6</td>
<td>1.8</td>
<td>1.7</td>
<td>-12.1%</td>
<td>-4.9%</td>
<td>1.7</td>
<td>1.7</td>
<td>-2.3%</td>
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ESG Issuance ($B)

<table>
<thead>
<tr>
<th>ESG Issuance ($B)</th>
<th>2Q23</th>
<th>1Q23</th>
<th>2Q22</th>
<th>Q/Q</th>
<th>Y/Y</th>
<th>YTD23</th>
<th>YTD22</th>
<th>Y/Y</th>
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<tr>
<td>Global</td>
<td>237.0</td>
<td>224.2</td>
<td>185.8</td>
<td>5.7%</td>
<td>27.6%</td>
<td>461.2</td>
<td>391.3</td>
<td>17.9%</td>
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<tr>
<td>Green</td>
<td>165.2</td>
<td>145.5</td>
<td>127.5</td>
<td>13.5%</td>
<td>29.5%</td>
<td>310.8</td>
<td>247.5</td>
<td>25.6%</td>
</tr>
<tr>
<td>Social</td>
<td>32.2</td>
<td>36.0</td>
<td>26.5</td>
<td>-10.6%</td>
<td>21.4%</td>
<td>68.2</td>
<td>62.8</td>
<td>8.6%</td>
</tr>
<tr>
<td>Sustainability</td>
<td>39.6</td>
<td>42.6</td>
<td>31.7</td>
<td>-7.1%</td>
<td>24.9%</td>
<td>82.3</td>
<td>81.0</td>
<td>1.5%</td>
</tr>
<tr>
<td>US</td>
<td>33.9</td>
<td>26.8</td>
<td>14.5</td>
<td>26.4%</td>
<td>133.9%</td>
<td>60.7</td>
<td>50.9</td>
<td>19.2%</td>
</tr>
<tr>
<td>Green</td>
<td>15.3</td>
<td>11.1</td>
<td>3.5</td>
<td>38.0%</td>
<td>335.6%</td>
<td>26.4</td>
<td>16.0</td>
<td>65.3%</td>
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<tr>
<td>Social</td>
<td>0.6</td>
<td>0.4</td>
<td>1.5</td>
<td>30.3%</td>
<td>-63.0%</td>
<td>1.0</td>
<td>5.9</td>
<td>-83.1%</td>
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<tr>
<td>Sustainability</td>
<td>18.0</td>
<td>15.3</td>
<td>9.4</td>
<td>17.8%</td>
<td>90.6%</td>
<td>33.2</td>
<td>29.0</td>
<td>14.8%</td>
</tr>
</tbody>
</table>


Note: Issuance = Long-term securities only, UST = U.S. Treasury securities, MBS = mortgage-backed securities, Corporates = corporate bonds, Agency = federal agency securities, Munis = municipal bonds, ABS = asset-backed securities

Source: Dealogic, SIFMA estimates
Total US Fixed Income: Review of Quarterly Statistics

- Issuance: $2.5T; +5.6% Q/Q, +8.4% Y/Y
- ADV $1,016.9B; -9.5% Q/Q, +3.7% Y/Y

Note: Issuance = Long-term securities only, UST = U.S. Treasury securities, MBS = mortgage-backed securities, Corporates = corporate bonds, Agency = federal agency securities, Munis = municipal bonds, ABS = asset-backed securities
Total US Fixed Income: Monthly Trends

- Issuance: $0.6T; -39.0% M/M, -10.5% Y/Y
- ADV: $1,003.0B; -7.2% M/M, +10.0% Y/Y


Note: Issuance = Long-term securities only, UST = U.S. Treasury securities, MBS = mortgage-backed securities, Corporates = corporate bonds, Agency = federal agency securities, Munis = municipal bonds, ABS = asset-backed securities

Total US Fixed Income: Annual Statistics Update

- Issuance: $4.5T; -12.7% Y/Y
- ADV: $1,070.1B; +1.7% Y/Y


Note: Issuance = Long-term securities only, UST = U.S. Treasury securities, MBS = mortgage-backed securities, Corporates = corporate bonds, Agency = federal agency securities, Munis = municipal bonds, ABS = asset-backed securities
UST: Review of Quarterly Statistics

- Issuance
  - Long Term: $1,256.5B; +27.4% Q/Q, +20.6% Y/Y
  - All: $5,646.5; +14.7% Q/Q, +47.4% Y/Y

Source: US Treasury, SIFMA estimates
Note: FRN = floating rate note, TIPS = Treasury inflation-protected securities
- ADV $715.2B; -11.1% Q/Q, +4.4% Y/Y

Source: FINRA, SIFMA estimates
Note: FRN = floating rate note, TIPS = Treasury inflation-protected securities
UST: Monthly Trends

- Issuance
  - Long Term: $263.0B; -46.7% M/M, -12.7% Y/Y
  - All: $1,905.2; +1.6% M/M, +54.4% Y/Y
- ADV $698.0; -9.9% M/M, +18.8% Y/Y

Source: FINRA, US Treasury, SIFMA estimates

Note: FRN = floating rate note, TIPS = Treasury inflation-protected securities
UST: Annual Statistics Update

- Issuance
  - Long Term: $1,859.5B; -15.2% Y/Y
  - All: $9,907.0B; +18.5% Y/Y
- ADV $759.7B; +3.4% Y/Y

Source: FINRA, NY Fed, US Treasury, SIFMA estimates
Note: FRN = floating rate note, TIPS = Treasury inflation-protected securities, FY18 UST trading is sourced from the NY Fed primary dealer reporting, data for FY19 to present is sourced from FINRA
MBS: Review of Quarterly Statistics

- Issuance: $352.9B; +29.4% Q/Q, -39.0% Y/Y
- ADV: $243.5B; -3.8% Q/Q, +3.9% Y/Y

Source: Bloomberg, US Agencies, FINRA, SIFMA estimates
Note: CMO = collateralized mortgage obligation
MBS: Monthly Trends

- Issuance: $130.8B; +8.8% M/M, -27.2% Y/Y
- ADV: $254.6B; +5.8% M/M, +8.3% Y/Y

Source: Bloomberg, US Agencies, FINRA, SIFMA estimates
Note: CMO = collateralized mortgage obligation

MBS: Annual Statistics Update

- Issuance: $625.5B; -53.7% Y/Y
- ADV: $248.2B; -3.4% Y/Y

Source: Bloomberg, US Agencies, FINRA, SIFMA estimates
Note: CMO = collateralized mortgage obligation
Corporate Bonds (Corporates)

Corporates: Review of Quarterly Statistics

- Issuance: $391.2B; -13.9% Q/Q, +26.5% Y/Y
- ADV: $40.7B; -15.8% Q/Q, -1.5% Y/Y

Source: Refinitiv, FINRA, SIFMA estimates
Note: IG = investment grade, HY = high yield
**US Corporate Issuance by Industry**

- Financials: 52.2%
- Energy and Power: 14.8%
- High Technology: 6.1%
- Healthcare: 4.8%
- Industrials: 4.3%
- Materials: 3.2%
- Consumer Staples: 2.9%
- Other: 11.8%

**US Corporate Bond Defaults**

- Q3 2021: 4
- Q4 2021: 3
- Q1 2022: 5
- Q2 2022: 7
- Q3 2022: 8
- Q4 2022: 7
- Q1 2023: 24
- Q2 2023: 6

**US Corporates Average Maturity at Issuance (# Years)**

- Q3 2021: 17.4
- Q4 2021: 17.6
- Q1 2022: 19.7
- Q2 2022: 18.0
- Q3 2022: 18.9
- Q4 2022: 19.9
- Q1 2023: 20.1
- Q2 2023: 14.0

**US Corporate Bond Index Yield to Maturity (%)**

- IG Spread
- IG
- HY

Source: ICE Data Indices, Refinitiv, S&P Global Ratings, SIFMA estimates

Note: IG = investment grade, HY = high yield
**Corporates: Monthly Trends**

- Issuance: $117.2B; -35.4% M/M, +37.0% Y/Y
- ADV: $40.9B; -2.6% M/M, +0.4% Y/Y

**Corporates: Annual Statistics Update**

- Issuance: $845.6B; +0.5% Y/Y
- ADV: $44.5B; +5.2% Y/Y
Federal Agency Securities (Agency)

Agency: Review of Quarterly Statistics

- Issuance: $318.8B; -35.9% Q/Q, +118.1% Y/Y
- ADV: $3.6B; -4.6% Q/Q, +38.1% Y/Y

Source: FINRA, US Agencies, SIFMA estimates
Note: FHLB = The Federal Home Loan Banks, FHLMC = The Federal Home Loan Mortgage Corporation (Freddie Mac), FNMA = The Federal National Mortgage Association (Fannie Mae), TVA = The Tennessee Valley Authority
Agency: Monthly Trends

- Issuance: $53.2B; -67.5% M/M, -7.5% Y/Y
- ADV: $3.2B; -6.7% M/M, +8.5% Y/Y

Source: FINRA, US Agencies, SIFMA estimates

Note: FHLB = The Federal Home Loan Banks, FHLMC = The Federal Home Loan Mortgage Corporation (Freddie Mac), FNMA = The Federal National Mortgage Association (Fannie Mae), TVA = The Tennessee Valley Authority

Agency: Annual Statistics Update

- Issuance: $816.1B; +161.6% Y/Y
- ADV: $3.7B; +43.8% Y/Y

Source: FINRA, US Agencies, SIFMA estimates

Note: FHLB = The Federal Home Loan Banks, FHLMC = The Federal Home Loan Mortgage Corporation (Freddie Mac), FNMA = The Federal National Mortgage Association (Fannie Mae), TVA = The Tennessee Valley Authority
Munis: Review of Quarterly Statistics

- Issuance: $102.2B; +29.9% Q/Q, -9.0% Y/Y
- ADV: $12.4B; -4.0% Q/Q, -21.8% Y/Y
### US Municipal Issuance by Use of Proceeds

<table>
<thead>
<tr>
<th>Use of Proceeds</th>
<th>Percent</th>
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<tbody>
<tr>
<td>General Purpose</td>
<td>30.0%</td>
</tr>
<tr>
<td>Education</td>
<td>27.9%</td>
</tr>
<tr>
<td>Utilities</td>
<td>11.3%</td>
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<tr>
<td>Transportation</td>
<td>8.8%</td>
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<tr>
<td>Housing</td>
<td>7.8%</td>
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<tr>
<td>Electric Power</td>
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<tr>
<td>Healthcare</td>
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<tr>
<td>Other</td>
<td>4.9%</td>
</tr>
</tbody>
</table>

### US Municipal Average Maturity at Issuance (# Years)

- 3Q21: 18.5
- 4Q21: 18.3
- 1Q22: 18.8
- 2Q22: 18.6
- 3Q22: 19.6
- 4Q22: 20.6
- 1Q23: 20.1
- 2Q23: 18.3

### US Municipal Bond Index Yield to Maturity (%)

- 3Q21: 2.35
- 4Q21: 2.34
- 1Q22: 2.33
- 2Q22: 3.24
- 3Q22: 3.67
- 4Q22: 4.33
- 1Q23: 3.98
- 2Q23: 3.77

Source: ICE Data Indices, Refinitiv, SIFMA estimates
Munis: Monthly Trends

- Issuance: $39.3B; +32.4% M/M, +4.0% Y/Y
- ADV: $12.5B; +3.8% M/M, -14.4% Y/Y

Munis: Annual Statistics Update

- Issuance: 207.6B; -19.2% Y/Y
- ADV: $12.2B; -12.7% Y/Y
Asset-Backed Securities (ABS)

ABS: Review of Quarterly Statistics

- Issuance: $67.8B; +7.9% Q/Q, -32.4% Y/Y
- ADV: $1.6B; -12.1% Q/Q, -4.9% Y/Y

Source: Bloomberg, FINRA, Refinitiv, SIFMA estimates
Note: CDO = collateralized debt obligation, CLO = collateralized loan obligation
### ABS: Monthly Trends

- **Issuance:** $21.2B; -17.6% M/M, -28.4% Y/Y
- **ADV:** $1.8B; +16.9% M/M, +18.6% Y/Y

Source: Bloomberg, FINRA, Refinitiv, SIFMA estimates

Note: CDO = collateralized debt obligation, CLO = collateralized loan obligation

### ABS: Annual Statistics Update

- **Issuance:** $130.6B; -32.8% Y/Y
- **ADV:** $1.7B; -2.3% Y/Y

Source: Bloomberg, FINRA, Refinitiv, SIFMA estimates

Note: CDO = collateralized debt obligation, CLO = collateralized loan obligation
ESG: Review of Quarterly Issuance Statistics

- Global: $237.0B; +5.7% Q/Q, +27.6% Y/Y
- US: $33.9B; +26.4% Q/Q, 133.9% Y/Y

Source: Dealogic, SIFMA estimates
ESG: Monthly Issuance Trends

- Global: $67.6B; -21.9% M/M, +28.1% Y/Y
- US: $6.0B; -51.6% M/M, +83.1% Y/Y

ESG: Annual Issuance Update

- Global: $461.2B; +17.9% Y/Y
- US: $60.7B; +19.2% Y/Y
Quarterly Rates Review

Volatility (MOVE Index)

- Quarter end: 110.64
- Quarter average: 125.08
- Quarter Peak: 153.90 on 4/5/23

Source: Bloomberg, SIFMA estimates
UST Rates

Federal Funds Rate (Fed Funds)

- Current: 5.00% (Lower Bound) - 5.25% (Upper Bound, shown in the chart)
  (The chart is as of 2Q23 and does not depict the 25 bps hike at the July FOMC meeting; current rate 5.25-5.50%)
- Next FOMC meeting: September 19-20, 2023

Source: Bloomberg, SIFMA estimates
UST by Tenor

- 10 Year Benchmark
  - Quarter end: 3.81%
  - Quarter average: 3.60%
  - Quarter Peak: 3.85% on 6/29/23
Source: Bloomberg, SIFMA estimates
Other Rates

30-Year Mortgage Rate

- Quarter end: 6.70%
- Quarter average: 6.56%
- Quarter Peak: 6.93% week of 6/1/23

Source: Bloomberg, SIFMA estimates

![30Y Mortgage Rate](chart)

Secured Overnight Financing Rate (SOFR)

- Quarter end (90 day rolling average): 417.22bps
- Fed Volumes: $1,549B

Source: Federal Reserve Bank of New York, SIFMA estimates

![Historical SOFR Volumes & 90-Day Rolling Average Rate](chart)
Curves & Spreads

10Y UST vs 2Y UST Spread

10Y UST vs 3M T-Bill Spread

TED Spread (3M Eurodollar vs 3M T-Bill)

IG Corporate vs 10Y UST Spread

HY Corporate vs 10Y UST Spread

Source: Bloomberg, SIFMA estimates
Appendix: Historical Trends

Total Fixed Income Securities

Note: Issuance = Long-term securities only, UST = U.S. Treasury securities, MBS = mortgage-backed securities, Corporates = corporate bonds, Agency = federal agency securities, Munis = municipal bonds, ABS = asset-backed securities
Source: FINRA, NY Fed, US Treasury, SIFMA estimates
Note: FRN = floating rate note, TIPS = Treasury inflation-protected securities, UST Trading data pre-FY19 sourced from NY Fed (primary dealer reporting), data for FY19 and on sourced from FINRA
Mortgage-Backed Securities

US MBS Issuance ($B)
- Agency MBS
- Agency CMO
- Non-Agency

US MBS Trading, ADV ($B)
- Agency
- Non-Agency

Source: Bloomberg, FINRA, Refinitiv, SIFMA estimates
Note: CMO = collateralized mortgage obligation
Corporate Bonds

US Corporate Issuance ($B)

Source: Refinitiv, FINRA, SIFMA estimates
Note: IG = investment grade, HY = high yield

US Corporate Trading, ADV ($B)

Source: Refinitiv, FINRA, SIFMA estimates
Note: IG = investment grade, HY = high yield
Federal Agency Securities

**US Agency Issuance ($B)**

<table>
<thead>
<tr>
<th>FY08</th>
<th>FY09</th>
<th>FY10</th>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
<th>FY16</th>
<th>FY17</th>
<th>FY18</th>
<th>FY19</th>
<th>FY20</th>
<th>FY21</th>
<th>FY22</th>
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</thead>
<tbody>
<tr>
<td>925</td>
<td>1,244</td>
<td>1,362</td>
<td>1,025</td>
<td>926</td>
<td>653</td>
<td>559</td>
<td>645</td>
<td>928</td>
<td>731</td>
<td>654</td>
<td>989</td>
<td>1,251</td>
<td>693</td>
<td>846</td>
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</table>

**US Agency Trading, ADV ($B)**

<table>
<thead>
<tr>
<th>FY10</th>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
<th>FY16</th>
<th>FY17</th>
<th>FY18</th>
<th>FY19</th>
<th>FY20</th>
<th>FY21</th>
<th>FY22</th>
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</thead>
<tbody>
<tr>
<td>11.1</td>
<td>9.6</td>
<td>9.7</td>
<td>6.6</td>
<td>5.3</td>
<td>4.5</td>
<td>5.4</td>
<td>4.1</td>
<td>3.5</td>
<td>4.1</td>
<td>5.1</td>
<td>2.8</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Source: FINRA, US Agencies, SIFMA estimates
Note: FHLB = The Federal Home Loan Banks, FHLMC = The Federal Home Loan Mortgage Corporation (Freddie Mac), FNMA = The Federal National Mortgage Association (Fannie Mae), TVA = The Tennessee Valley Authority
Municipal Bonds

US Municipal Issuance ($B)
- Revenue
- GO
- Private Placement

US Municipal Trading, ADV ($B)
- Revenue
- GO
- Other

Source: Municipal Securities Rulemaking Board, Refinitiv, SIFMA estimates
Note: GO = general obligation
Asset-Backed Securities

Source: Bloomberg, FINRA, Refinitiv, SIFMA estimates
Note: CDO = collateralized debt obligation, CLO = collateralized loan obligation
Environmental, Social, and Governance (ESG)

**Global ESG Issuance ($B)**
- Green
- Social
- Sustainability

**US ESG Issuance ($B)**
- Green
- Social
- Sustainability

Source: Dealogic, SIFMA estimates
Appendix: Definitions & Purpose

In general, fixed income securities are borrowed capital for the issuer to fund government operations, public projects or corporate investments, thereby fueling economic growth. The diversity of fixed income products both increases the amount of funds available to borrow and spreads credit risk across multiple market participants.

- **U.S. Treasury Securities (UST)** – UST are debt obligations of the federal government used to fund its operations. Since UST are backed by the full faith and credit of the U.S. government, these securities are considered by market participants as the benchmark credit. The U.S. government has a AAA rating, meaning it has essentially no credit risk and can easily meet its financial obligations on time and in full. In light of this, UST show a diversity of holders, in both institutional type and foreign holders.

- **Mortgage-Backed Securities (MBS)** – Since mortgages (a debt instrument collateralized by a specified real estate property) are less liquid than other investment vehicles, they can be securitized into MBS, whether in pass-throughs or collateralized mortgage obligations (CMOs).

- **Corporate Bonds (Corporates)** – Corporates are debt securities issued by public and private corporations. They are issued to raise money to fund investments or expansion plans. Corporates are considered riskier than UST, and receive ratings by credit ratings agencies to determine creditworthiness, i.e. probability of repayment of debt in a timely manner.

- **Municipal Bonds (Munis)** – Munis are debt securities issued by state/local governments or government agencies and public entities (utilities, school districts) to fund public projects, predominantly infrastructure related. Efficient muni markets enable states and municipalities to borrow at low rates and finance capital expenditures over a longer time period.

- **Federal Agency Securities (Agency)** – Agency securities are issued by quasi-governmental agencies (federal government, government sponsored enterprises) to fund operations. Unlike UST or munis, these securities are not always fully guaranteed by the U.S. or a municipal government. As such, they can hold credit and default risk.

- **Asset-Backed Securities (ABS)** – ABS are financial securities collateralized by a pool of typically illiquid assets such as auto loans, student loans, credit cards, etc. Pooling these assets creates a more liquid investment vehicle, with a valuation based on the cash flows of the underlying and the structure of the transaction.

- **Money Markets (MM)** – MMs involve highly liquid, short maturity (typically overnight to less than one year) financial instruments (certificates of deposit/CDs, bankers’ acceptances, commercial paper/CP, etc.), used by investors to borrow and lend in the short term. Transactions in the money markets are wholesale, taking place only between institutional investors (no individual investors) and for large denominations.
Repurchase Agreements (Repos) – Repos are financial transactions in which one party sells an asset to another party with a promise to repurchase the asset at a pre-specified later date (a reverse repo is the same transaction seen from the perspective of the security buyer). Repos can be overnight (duration one day) or term (duration up to one year, albeit some are up to two years and the majority are three months or less). The repo market enables market participants to provide collateralized loans to one another, and financial institutions predominantly use repos to manage short-term fluctuations in cash holdings, rather than general balance sheet funding. Repos aid secondary market liquidity for the cash markets (ex: UST), allowing dealers to act as market makers in a very efficient manner.

Secured Overnight Financing Rate (SOFR) – In the U.S., the transition away from London Interbank Offered Rate (LIBOR) to its chosen alternative reference rate, SOFR, is underway. While LIBOR is not fully transaction based, SOFR is based on the overnight repo markets with ~ $1 trillion transactions per day. Publication of the SOFR rate began in April 2018. Trading and clearing of SOFR based swaps and futures began in May 2018.

Environmental, Social, and Governance (ESG) – Dealogic classifies ESG bonds by:

- Green – Any type of bond instrument where the proceeds will be exclusively applied to finance or refinance, in part or in full, new and/or existing eligible Green Projects and which are aligned with the four core components of the Green Bond Principles (GBP)
- Social – Any type of bond instrument where the proceeds will be exclusively applied to finance or refinance in part or in full new and/or existing eligible Social Projects and which are aligned with the four core components of the Social Bond Principles (SBP)
- Sustainability – Bonds where the proceeds are exclusively applied to finance or refinance a combination of both Green and Social Projects
- Region – Deal nationality is a calculated nationality that looks at the business nationality of the issuing entity with the exception of securitizations that are categorized using the nationality of business of the originator or if undisclosed the nationality of risk
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>Y/Y</td>
<td>Year-over-Year</td>
</tr>
<tr>
<td>Q/Q</td>
<td>Quarter-over-Quarter</td>
</tr>
<tr>
<td>YTD</td>
<td>Year-to-Date</td>
</tr>
<tr>
<td>BPS</td>
<td>Basis Points</td>
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<tr>
<td>PPS</td>
<td>Percentage Points</td>
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<tr>
<td>CAGR</td>
<td>Compound Annual Growth Rate</td>
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<tr>
<td>CUSIP</td>
<td>Committee on Uniform Securities Identification Procedures</td>
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<tr>
<td>CFTC</td>
<td>Commodity Futures Trading Commission</td>
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<tr>
<td>SEC</td>
<td>Securities and Exchange Commission</td>
</tr>
<tr>
<td>Fed</td>
<td>Federal Reserve System</td>
</tr>
<tr>
<td>FRB</td>
<td>Federal Reserve Bank</td>
</tr>
<tr>
<td>NY Fed</td>
<td>Federal Reserve Bank of New York</td>
</tr>
<tr>
<td>ARRC</td>
<td>Alternative Reference Rates Committee</td>
</tr>
<tr>
<td>ADV</td>
<td>Average Daily Trading Volume</td>
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<tr>
<td>Algo</td>
<td>Algorithm (algorithmic trading)</td>
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<tr>
<td>AT</td>
<td>Automated Trading</td>
</tr>
<tr>
<td>ATS</td>
<td>Alternative Trading System</td>
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<tr>
<td>AUM</td>
<td>Assets Under Management</td>
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<tr>
<td>Best Ex</td>
<td>Best Execution</td>
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<tr>
<td>CLOB</td>
<td>Central Limit Order Book</td>
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<tr>
<td>D2C</td>
<td>Dealer-to-Client</td>
</tr>
<tr>
<td>D2D</td>
<td>Dealer-to-Dealer</td>
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<tr>
<td>ECN</td>
<td>Electronic Communications Network</td>
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<tr>
<td>ETP</td>
<td>Electronic Trading Platforms</td>
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<td>ETD</td>
<td>Exchange Traded Derivative</td>
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<tr>
<td>FI</td>
<td>Fixed Income</td>
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<tr>
<td>FICC</td>
<td>Fixed Income, Currencies and Commodities</td>
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<td>GCF</td>
<td>General Collateral Financing</td>
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<tr>
<td>IDB</td>
<td>Inter-Dealer Broker</td>
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<tr>
<td>IVI</td>
<td>Intraday Indicative Value</td>
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<tr>
<td>IOI</td>
<td>Indication of Interest</td>
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<td>MM</td>
<td>Market Maker</td>
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<tr>
<td>OI</td>
<td>Open Interest</td>
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<tr>
<td>OTC</td>
<td>Over-the-Counter</td>
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<tr>
<td>VWAP</td>
<td>Volume Weighted Average Price</td>
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<tr>
<td>IBOR</td>
<td>Interbank Offered Rate</td>
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<tr>
<td>LIBOR</td>
<td>London Inter-bank Offered Rate</td>
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<tr>
<td>RFR</td>
<td>Risk Free Rate</td>
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<tr>
<td>SOFR</td>
<td>Secured Overnight Financing Rate</td>
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<tr>
<td>DV01</td>
<td>Dollar Value of Basis Point</td>
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<tr>
<td>DVP</td>
<td>Delivery-versus-Payment</td>
</tr>
<tr>
<td>EFFR</td>
<td>Effective Fed Funds Rate</td>
</tr>
<tr>
<td>PAI</td>
<td>Price Alignment Interest</td>
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<tr>
<td>Repo</td>
<td>Repurchase Agreement</td>
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<td>UST</td>
<td>U.S. Treasury Securities</td>
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<td>MBS</td>
<td>Mortgage-Backed Security</td>
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<td>Munis</td>
<td>Municipal Securities</td>
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<td>MM</td>
<td>Money Markets</td>
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<td>FRN</td>
<td>Floating Rate Note</td>
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<td>FRA</td>
<td>Forward Rate Agreement</td>
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<td>T-Bill</td>
<td>U.S. Treasury Bill</td>
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<td>T-Note</td>
<td>U.S. Treasury Note</td>
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<td>T-Bond</td>
<td>U.S. Treasury Bond</td>
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<td>TIPS</td>
<td>Treasury Inflation Protected Securities</td>
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<td>ABS</td>
<td>Asset-Backed Security</td>
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<td>CMO</td>
<td>Collateralized Mortgage Obligation</td>
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<tr>
<td>MBS</td>
<td>Mortgage-Backed Security</td>
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<tr>
<td>CMBS</td>
<td>Commercial MBS</td>
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<tr>
<td>RMBS</td>
<td>Residential MBS</td>
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<tr>
<td>HY</td>
<td>High Yield Bond</td>
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<tr>
<td>IG</td>
<td>Investment Grade Bond</td>
</tr>
<tr>
<td>GO</td>
<td>General Obligation Bond</td>
</tr>
<tr>
<td>Revenue</td>
<td>Revenue Bond</td>
</tr>
<tr>
<td>CD</td>
<td>Certificate of Deposit</td>
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<tr>
<td>CDO</td>
<td>Collateralized Debt Obligation</td>
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<td>CLO</td>
<td>Collateralized Loan Obligation</td>
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<td>CP</td>
<td>Commercial Paper</td>
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<tr>
<td>ABCP</td>
<td>Asset-Backed Commercial Paper</td>
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<td>MMF</td>
<td>Money Market Mutual Funds</td>
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<tr>
<td>FAMC</td>
<td>Farmer Mac/Federal Agricultural Mortgage Corporation</td>
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<td>FCS</td>
<td>Farm Credit System</td>
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<tr>
<td>FHLB</td>
<td>Federal Home Loan Banks</td>
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<td>FHLMC</td>
<td>Freddie Mac/Federal Home Loan Mortgage Corporation</td>
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<td>FNMA</td>
<td>Fannie Mae/Federal National Mortgage Association</td>
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<td>GNMA</td>
<td>Ginnie Mae/Government National Mortgage Association</td>
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<td>TVA</td>
<td>Tennessee Valley Authority</td>
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<tr>
<td>IR</td>
<td>Interest Rate</td>
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<tr>
<td>IRS</td>
<td>Interest Rate Swap</td>
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<td>OIS</td>
<td>Overnight Index Swap</td>
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<td>TRS</td>
<td>Total Return Swap</td>
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<td>STIR</td>
<td>Short-Term Interest Rate</td>
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Appendix: SIFMA Research Reports

SIFMA Research: www.sifma.org/research

- **Quarterly Reports**
  - Equity and related: capital formation (IPOs, other issuance statistics); market performance (index prices); volatility (VIX); cash equities, ETFs, and multi-listed options volumes; exchange market shares and landscapes; equity market cap and number of listed companies
  - Fixed Income – Issuance & Trading: issuance and trading metrics for U.S. Treasuries, mortgage-backed securities, corporate bonds, municipal securities, federal agency securities, asset-backed securities, and secured overnight financing rate (SOFR), as well as statistics on fixed income ESG issuance for green, social, and sustainability bonds
  - Fixed Income – Outstanding: outstanding balances for U.S. Treasuries, mortgage-backed securities, corporate bonds, municipal securities, federal agency securities, asset-backed securities, money markets, repurchase agreements, and secured overnight financing rate (SOFR)
  - Financial Institutions: financial (income statement and balance sheet metrics) and regulatory (ratios such as capital levels) data for CCAR firms, essentially a proxy for the financial services industry

- **Capital Markets Fact Book**: a comprehensive look at capital markets, including
  - Global equity and fixed income markets (outstanding, issuance, volumes); investment banking landscape; international securities transactions
  - U.S. equity, fixed income, derivatives and private placement markets (outstanding, issuance, volumes, index prices); investment banking landscape; mutual fund and ETF statistics
  - U.S. investor participation showing household liquid financial asset breakout; household equity ownership; and holders of equities
  - U.S. savings & investment metrics on retirement asset breakout and mix across asset classes; savings rates and other economic indicators; and federal balance sheet overview
  - U.S. securities industry statistics on number of broker-dealers, registered representatives, registered investment advisors, and branch offices; industry financial overview; and state maps showing number firms/reps

- **U.S. Repo Market Chart Book**: a detailed description of the U.S. repurchase agreement (repo) markets and outstanding and collateral statistics for repo and reverse repo securities in the bilateral, general collateral finance (GCF), and tri-party repo markets