

Market Transparency Report

Monthly Guide to the U.S. Retail Fixed Income Markets

November 2023

www.tradeweb.com

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Overview

About the Market Transparency Report

The data and analysis contained in this monthly report are intended to provide transparency into the dynamics of the U.S. Fixed Income markets for retail investors. The report presents the important trends in the market, including trade volumes, most active issuers, yield/spread movements and buy/sell ratios. Retail trades are defined as odd-lot transactions under 100 bonds (i.e. less than \$100,000 par value). The retail market is much smaller than the institutional market on a par value basis, but it accounts for more than 2/3 of the trades that occur in the marketplace.

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Market Commentary

Monthly Change Table for November 2023

	Median Yield (bps)	Daily Trade Volume	Buy/Sell Ratio
Agency	-32	-14.6%	-1.3
CD	-5	-1.5%	-1.0
Corp	-33	9.0%	0.1
Municipal	-25	-0.6%	-0.1
Treasury	-6	-12.8%	-1.4

For monthly security trend data, see slides 5, 6 and 7



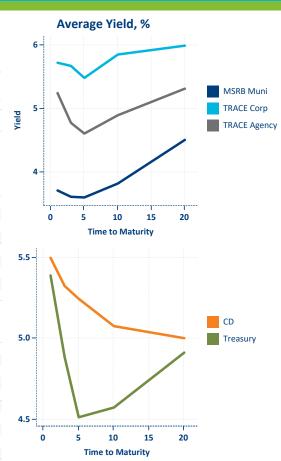
Yield Matrix

Average Yield, % for November 2023

			TTM			Median
Market	1	3	5	10	20	Maturity (Years)
MSRB Muni	3.7	3.6	3.6	3.8	4.5	9
TRACE Corp	5.7	5.7	5.5	5.9	6.0	3
TRACE Agency	5.3	4.8	4.6	4.9	5.3	5
CD	5.5	5.3	5.2	5.1	5.0	1
Treasury	5.4	4.9	4.5	4.6	4.9	1

Asset Class

								ivicalali
Market	Category (Filtered)	Rating Key	1	3	5	10	20	Maturity (Years)
		AA	5.5	5.4	5.3			5
	Financial	Α	5.5	5.2	5.2	5.3	5.7	3
	Financial	BBB	6.2	6.0	6.8	5.9	6.8	3
TRACE -		HY		11.0	11.9	9.9		4
Corp		AAA			4.7		5.1	16
Согр		AA	4.0	4.7	5.0	5.0	5.3	16
	Non-Financial	Α	5.0	5.0	5.0	5.4	5.8	5
		BBB	5.9	5.8	5.5	5.9	6.9	3
		HY	8.6	6.7	7.4			2
								Median
			1	3	5	10	20	Maturity (Years)
		AAA	3.6	3.5	3.4	3.7	4.2	7
		AA	3.7	3.6	3.6	3.8	4.4	8
	GO	A	3.9	3.8	3.8	4.1	4.8	8
		BBB	4.4	4.2	4.6	5.0	5.4	11
MSRB		HY			6.6	6.6	5.8	11
Muni		AAA	3.6	3.5	3.5	3.6	4.4	9
		AA	3.7	3.6	3.6	3.8	4.4	9



Median

12

13 9

WA Yield = "Weighted Average Yield"

Source: TRACE, RTRS (MSRB's Real-time Transactional Reporting System) and Tradeweb Direct

- -The yields in each cell for Corporate/Agency/Municipal are the weighted average yield based on odd-lot customer buy transcations reported in TRACE/MSRB.
- -The yields in each cell for Treasury/CD are the weighted average yield based on buy transactions on the Tradeweb Direct Platform.

3.9

4.6

9.7

- -The weights are based on transaction size.
- -Yield summaries for Corporate and Agency exclude transactions in callable or floating-rate coupon bonds.

BBB

HY

- -Yield summaries for Municipal exclude transactions in taxable bonds.
- -See appendix for the definition of maturity and rating buckets.

Revenue

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3.8

4.9

7.4

3.9

4.6

7.1



4.1

5.0

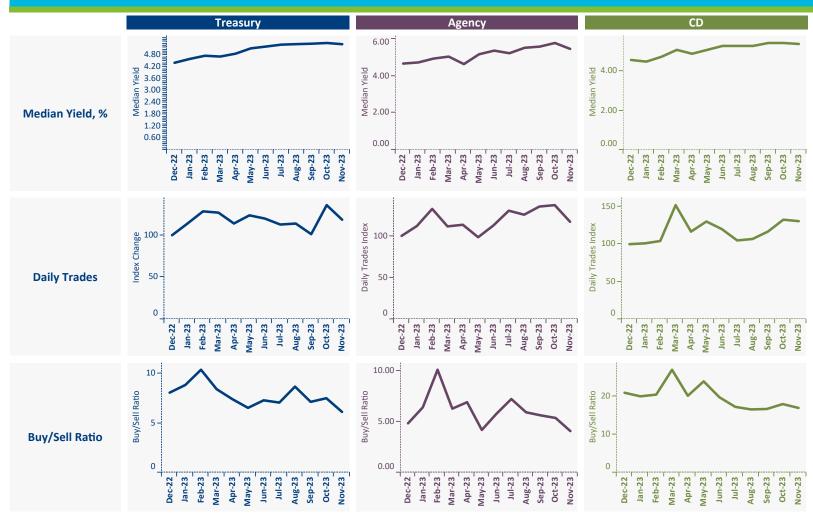
9.2

4.8

5.4

7.0

Treasury, Agency, CD Transaction Trend Summary



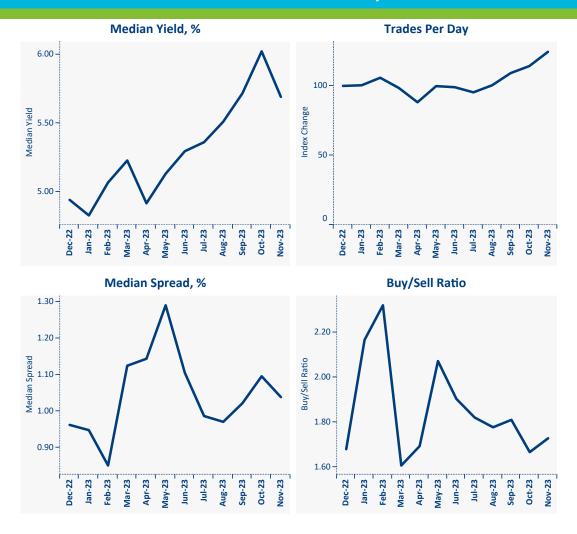
Daily Trades: First month = 100 Source: TRACE and Tradeweb Direct



⁻Treasury and CD are based on transactions on the Tradeweb Direct Platform. Median yields are based on all customer buy transactions.

⁻Agency is based on odd-lot customer transactions (<100M) reported in TRACE. Median yields are based on all odd-lot customer buy transactions.

Corporate Bonds: Odd-Lot Customer Transaction Trend Summary



Daily Trades: First month = 100 Source: TRACE and Tradeweb Direct



⁻Based on odd-lot customer transactions (<100M) reported in TRACE.

⁻Median yields and spreads are based on all odd-lot customer buy transactions...

Municipal Bonds: Odd-Lot Customer Transaction Trend Summary



Daily Trades: First month = 100

Source: RTRS (MSRB's Real-time Transaction Reporting System) and Tradeweb Direct



⁻Based on odd-lot customer transactions (<100M) reported in MSRB.

⁻Median yields and spreads are based on all odd-lot customer buy transactions.

⁻Spread for each transaction is calculated against the Treasury yield for the same maturity.

Corporate Bonds: Top 20 Most Active Issuers

November 2023

Index	Ticker	Company	Rating Key (Med)	Issues Traded	% of Total Trades	Trades	Buy/Sell Ratio	Dollar Vol. Traded (MM)	1Y Yield (Buy)	3Y Yield (Buy)	5Y Yield (Buy)	10Y Yield (Buy)	20Y Yield (Buy)
1	GS	GOLDMAN SACHS	Α	1,270	3.8%	40,073	1.4	584	5.8	5.7	5.8	6.0	5.9
2	WFC	WELLS FARGO	Α	205	3.0%	31,724	1.5	386	5.8	5.8	5.9	6.1	6.4
3	С	CITIGROUP	BBB	883	2.8%	29,369	1.9	519	5.8	5.8	6.0	6.0	6.2
4	JPM	JP MORGAN CHASE	Α	1,081	2.6%	27,396	1.4	510	5.7	5.5	5.7	6.2	5.8
5	CVS	CVS CAREMARK CORP	BBB	48	2.5%	26,952	4.2	211	5.8	5.5	5.4	5.6	6.2
6	BAC	BANK OF AMERICA	A	510	2.5%	26,905	1.7	585	6.0	5.7	5.8	6.0	6.0
7	PNC	PNC FDG CORP	Α	33	2.2%	23,025	7.8	209	6.2	5.5	5.9		
8	MS	MORGAN STANLEY	A	999	1.6%	17,119	1.2	315	5.8	5.7	5.8	5.6	6.0
9	Т	AT&T	BBB	106	1.6%	16,906	1.1	192	20.6	5.5	5.5	5.5	6.2
10	AAPL	APPLE INC	AA	53	1.1%	12,213	1.9	213	5.2	4.8	4.8	4.8	5.3
11	VZ	VERIZON	BBB	164	1.1%	12,100	1.3	176	5.7	5.3	5.4	5.6	6.0
12	GM	GENERAL MOTORS FINANCIAL COMPANY INC	BBB	92	1.0%	11,078	1.8	240	6.1	6.0	6.0	6.4	7.1
13	ORCL	ORACLE CORP	BBB	38	1.0%	10,521	1.5	190	5.8	5.5	5.5	5.7	6.2
14	BRK	BERKSHIRE HATHAWAY	Α	142	1.0%	10,464	2.7	213	5.5	5.1	5.4	5.8	6.0
15	DUK	DUKE ENERGY	BBB	126	1.0%	10,354	2.4	167	5.7	5.6	5.4	5.7	6.1
16	CMCS	COMCAST	Α	66	0.9%	10,064	1.4	164	5.3	5.2	5.1	5.4	5.8
17	AXP	AMERICAN EXPRESS	Α	34	0.9%	9,260	3.1	162	5.7	5.4	5.3		5.6
18	USB	U S BANCORP MEDIUM TERM NTS- BOOK ENTRY	Α	30	0.8%	8,880	1.9	133	6.0	5.8	6.1		
19	TD	TORONTO DOMINION BK SR MEDIUM TERM BK NT	A	275	0.8%	8,605	1.9	134	5.7	5.7	5.6	5.8	
20	COF	CAPITAL ONE FINL CORP	BBB	30	0.8%	8,541	2.1	137	6.3	6.3	6.3		

Source: TRACE and Tradeweb Direct





⁻Based on odd-lot customer transactions (<100M) reported in TRACE.

⁻Issuer ratings are based on median rating of traded bonds from each issuer. Bond ratings are from Moody's and S&P.

Corporate Bonds: Top 20 Issuers with Highest Buy/Sell Ratio

November 2023

Index	Ticker	Company	Rating Key (Med)	Issues Traded	% of Total Trades	Trades	Trades (Buy)	Trades (Sell)	Buy/Sell Ratio	Dollar Vol. Traded (MM)	1Y Yield (Buy)	3Y Yield (Buy)	5Y Yield (Buy)	10Y Yield (Buy)	20Y Yield (Buy)
1	PNC	PNC FDG CORP	Α	33	2.2%	23,025	20,400	2,625	7.8	209	6.2	5.5	5.9		
2	CVS	CVS CAREMARK CORP	BBB	48	2.5%	26,952	21,720	5,232	4.2	211	5.8	5.5	5.4	5.6	6.2
3	TMO	THERMO FISHER SCIENTIFIC INC	Α	16	0.4%	4,264	3,426	838	4.1	59	5.7	5.0	5.2	5.3	5.7
4	TRP	TRANSCANADA PIPELINES LTD	BBB	34	0.3%	3,508	2,802	706	4.0	60	6.0	5.9	5.7	6.0	6.3
5	F	FORD	BBB	169	0.8%	8,349	6,436	1,913	3.4	140	6.7	6.7	6.6	6.8	7.5
6	PM	PHILIP MORRIS INTL INC	Α	31	0.5%	5,282	4,027	1,255	3.2	118	5.6	5.3	5.5	5.8	6.2
7	AXP	AMERICAN EXPRESS	Α	34	0.9%	9,260	6,979	2,281	3.1	162	5.7	5.4	5.3		5.6
8	AEP	AMERICAN ELEC PWR CO INC	BBB	74	0.3%	2,714	2,043	671	3.0	57		5.5	5.5	5.9	6.1
9	ВХ	APRIA HEALTHCARE GROUP INC	BBB	35	0.4%	4,159	3,120	1,039	3.0	83	6.6	7.2	6.4	6.2	5.0
10	FB	Null	AA	10	0.3%	2,843	2,125	718	3.0	58		4.9	4.9	5.4	
11	MAR	MARRIOTT INTL INC NEW	BBB	22	0.3%	2,985	2,173	812	2.7	65	5.8	5.5	5.6	6.0	
12	NEE	FPL GROUP CAP INC	BBB	65	0.7%	7,428	5,408	2,020	2.7	136	5.9	5.5	5.6	5.5	5.7
13	BRK	BERKSHIRE HATHAWAY	Α	142	1.0%	10,464	7,607	2,857	2.7	213	5.5	5.1	5.4	5.8	6.0
14	MET	METLIFE	Α	21	0.4%	4,273	3,106	1,167	2.7	72	5.8	5.5		5.7	6.0
15	SAN	ABBEY NATL TREAS SVCS PLC	BBB	46	0.2%	2,653	1,905	748	2.6	71	6.3	6.4	6.2	7.1	
16	UTX	UNITED TECHNOLOGIES CORP	BBB	58	0.8%	8,524	6,090	2,434	2.5	126	5.8	5.5	5.7	5.6	6.0
17	TM	ТОУОТА	Α	75	0.5%	5,757	4,068	1,689	2.4	133	5.4	5.2	5.1	5.2	6.0
18	DWDP	Null	BBB	9	0.2%	2,514	1,773	741	2.4	26		5.6	5.3	5.6	6.0
19	EIX	EDISON MISSION	А	56	0.4%	4,094	2,888	1,206	2.4	78	6.2	5.5	5.6	5.8	6.2
20	DUK	DUKE ENERGY	BBB	126	1.0%	10,354	7,277	3,077	2.4	167	5.7	5.6	5.4	5.7	6.1

Source: TRACE and Tradeweb Direct



⁻Based on odd-lot customer transactions (<100M) reported in TRACE.

⁻The top 20 issuers are selected among the top 100 most active issuers in odd-lot TRACE.

⁻Issuer ratings are based on median rating of traded bonds from each issuer. Bond ratings are from Moody's and S&P.

Corporate Bonds: Top 20 Issuers with Lowest Buy/Sell Ratio

November 2023

Index	Ticker	Company	Rating Key (Med)	Issues Traded	% of Total Trades	Trades	Trades (Buy)	Trades (Sell)	Buy/Sell Ratio	Dollar Vol. Traded (MM)	1Y Yield (Sell)	3Y Yield (Sell)	5Y Yield (Sell)	10Y Yield (Sell)	20Y Yield (Sell)
1	MMC	MARSH & MCLENNAN COS INC	Α	18	0.4%	3,973	682	3,291	0.21	45	5.9	5.4	5.3	5.5	5.8
2	RDS	SHELL	AA	23	0.3%	3,176	1,481	1,695	0.87	49	5.4	5.0	5.1	5.4	5.6
3	BNS	BANK NOVA SCOTIA B C	Α	189	0.4%	3,737	1,787	1,950	0.92	71	5.9	5.8	5.8	6.0	
4	EDP	ENTERPRISE PRODS OPER LLC	Α	34	0.4%	3,966	1,903	2,063	0.92	60	5.7	5.3	5.4	5.5	5.8
5	CHTR	CCO HOLDINGS LLC	BBB	45	0.2%	2,559	1,317	1,242	1.06	55		5.8	6.2	7.4	7.4
6	FISV	FISERV INC	BBB	12	0.3%	3,363	1,779	1,584	1.12	45	6.1	5.5	5.6	5.9	
7	Т	AT&T	BBB	106	1.6%	16,906	8,917	7,989	1.12	192	25.2	5.1	5.5	5.9	6.3
8	ANTM	Null	Α	27	0.3%	3,122	1,682	1,440	1.17	46	5.9	5.5	5.3	5.6	6.0
9	ETP	ENERGY TRANSFER PARTNERS L P	BBB	28	0.3%	2,696	1,461	1,235	1.18	52	5.9	5.9	5.9	6.3	6.7
10	MS	MORGAN STANLEY	Α	999	1.6%	17,119	9,438	7,681	1.23	315	5.9	5.8	6.1	5.7	5.9
11	BUD	ANHEUSER BUSCH INBEV WORLDWIDE INC	Α	39	0.4%	4,752	2,644	2,108	1.25	68		5.2	5.0	5.5	5.8
12	VZ	VERIZON	BBB	164	1.1%	12,100	6,728	5,372	1.25	176	5.8	5.4	5.5	5.8	6.2
13	SPG	SIMON PPTY GROUP L P	Α	25	0.2%	2,455	1,368	1,087	1.26	50	6.1	5.7	5.7	6.0	6.4
14	AMT	AMERICAN TOWER CORP NEW	BBB	34	0.3%	3,542	1,989	1,553	1.28	64	6.2	5.9	5.9	6.0	
15	DELL	DELL	BBB	24	0.3%	3,270	1,835	1,435	1.28	77	6.0	5.7	5.6	5.9	6.3
16	EXC	EXELON GENERATION CO LLC	BBB	87	0.2%	2,306	1,308	998	1.31	50	5.9	5.4	5.4	5.7	6.1
17	ВР	BP	Α	28	0.6%	6,291	3,574	2,717	1.32	81		5.2	5.2	5.5	5.8
18	BTI	BAT INTERNATIONAL FINANCE PLC	BBB	34	0.3%	3,616	2,057	1,559	1.32	82	6.1	5.8	5.9	6.6	7.2
19	CAT	CATERPILLAR	Α	61	0.3%	2,882	1,641	1,241	1.32	60	5.6	5.1	5.1	5.5	5.6
20	CMCS	COMCAST	Α	66	0.9%	10,064	5,825	4,239	1.37	164	5.6	5.2	5.2	5.6	5.9

Source: TRACE and Tradeweb Direct



⁻Based on odd-lot customer transactions (<100M) reported in TRACE.

⁻The top 20 issuers are selected among top 100 most active issuers in odd-lot TRACE.

⁻Issuer ratings are based on median rating of traded bonds from each user. Bond ratings are from Moody's and S&P.

Corporate Bonds: Top 20 Most Bought Issues

November 2023

Index	Ticker	Company	Maturity	Rating Key (Med)	Coupon	Trades (Buy)	Trades (Sell)	Trades	Dollar Vol. Traded (MM)	Yield (Buy)	Yield (Sell)	Price (Buy)	Price (Sell)
1	PNC	PNC FDG CORP	Jun-29	Α	5.582	15,970	285	16,255	88			97.4	98.8
2	CVS	CVS CAREMARK CORP	Jan-29	BBB	5.000	15,711	328	16,039	44	5.4	5.4	98.0	98.2
3	WFC	WELLS FARGO	Jul-33	Α	4.897	3,773	144	3,917	12			91.1	92.5
4	С	CITIGROUP	Jul-28	BBB	3.668	2,839	627	3,466	15			91.7	92.9
5	Т	AT&T	Feb-34	BBB	5.400	2,818	49	2,867	19	5.5	5.8	98.9	96.7
6	AXP	AMERICAN EXPRESS	Oct-26	Α	6.338	2,796	71	2,867	21			101.0	101.0
7	WFC	WELLS FARGO	Oct-34	A	6.491	2,711	58	2,769	12			102.0	103.3
8	ABBV	ABBVIE INC	Mar-25	Α	3.800	2,663	140	2,803	13	5.6	5.6	97.7	97.8
9	GS	GOLDMAN SACHS	Oct-34	A	6.561	2,653	45	2,698	10			103.3	104.8
10	ВК	BANK NEW YORK INC MEDIUM TERM SR NTS BOO	Oct-33	Α	5.834	2,472	178	2,650	11			98.2	100.4
11	F	FORD	Mar-26	BBB	0.000	2,156	219	2,375	11			94.6	92.5
12	MIDD	Null	Sep-25	N/R	1.000	2,136	8	2,144	8			111.2	109.4
13	UTX	UNITED TECHNOLOGIES CORP	Aug-25	BBB	3.950	1,920	671	2,591	15	5.7	5.7	97.2	97.1
14	С	CITIGROUP	Null	ВВ	7.625	1,833	304	2,137	56			99.6	99.5
15	CVS	CVS CAREMARK CORP	Mar-28	BBB	4.300	1,772	1,449	3,221	26	5.4	5.6	95.6	95.1
16	GS	GOLDMAN SACHS	Null	ВВ	7.500	1,636	185	1,821	42			100.9	100.7
17	HPQ	HEWLETT PACKARD	Oct-25	ВВВ	4.900	1,556	700	2,256	19	5.7	5.8	98.5	98.4
18	DWDP	Null	Nov-28	BBB	4.725	1,486	506	1,992	14	5.3	5.4	97.7	97.2
19	LOW	LOWES COS INC	Apr-26	BBB	2.500	1,477	495	1,972	11	5.3	5.4	93.7	93.6
20	CMCS	COMCAST	Oct-28	Α	4.150	1,474	988	2,462	21	5.1	5.2	95.8	95.5

Source: TRACE and Tradeweb Direct



⁻Based on odd-lot customer transactions (<100M) reported in TRACE.

⁻Ratings (AAA, AA, A, BBB, BB, B, C) are based on aggregate ratings from Moody's and S&P (when available).

Corporate Bonds: Top 20 Most Sold Issues

November 2023

SS GOLDMAN SACHS Feb-26 A 3.750 822 5,416 6,238 28 5.6 6.1 96.0 95.1	Inde	x Ticker	Company	Maturity	Rating Key (Med)	Coupon	Trades (Buy)	Trades (Sell)	Trades	Dollar Vol. Traded (MM)	Yield (Buy)	Yield (Sell)	Price (Buy)	Price (Sell)
3 T AT&T Mar-27 BBB 4.250 301 2,849 3,150 23 5.4 5.1 96.7 97.4 4 MMC MARSH & MCLENNAN COS INC Mar-24 A 3.875 72 2,737 2,809 19 5.6 6.1 99.4 99.2 5 LTHM Null Jul-25 N/R 4.125 55 2,210 2,265 10 165.5 165.5 162.3 6 CVS CVS CAREMARK CORP Mar-28 BBB 4.300 1,772 1,449 3,221 26 5.4 5.6 95.6 95.1 7 GS GOLDMAN SACHS Sep-24 A 5.813 17 1,148 1,165 8 - 99.8 99.6 8 CMCS COMCAST Oct-28 A 4.150 1,474 988 2,462 21 5.1 5.2 95.8 95.5 9 BAC BANK OF AMERICA Jul-33 <t< td=""><td>1</td><td>GS</td><td>GOLDMAN SACHS</td><td>Feb-26</td><td>Α</td><td>3.750</td><td>822</td><td>5,416</td><td>6,238</td><td>28</td><td>5.6</td><td>6.1</td><td>96.0</td><td>95.1</td></t<>	1	GS	GOLDMAN SACHS	Feb-26	Α	3.750	822	5,416	6,238	28	5.6	6.1	96.0	95.1
4 MMC MARSH & MCLENNAN COS INC Mar-24 A 3.875 72 2,737 2,809 19 5.6 6.1 99.4 99.2 5 LTHM Null Jul-25 N/R 4.125 55 2,210 2,265 10 165.5 162.3 6 CVS CVS CAREMARK CORP Mar-28 BBB 4.300 1,772 1,449 3,221 26 5.4 5.6 95.6 95.1 7 GS GOLDMAN SACHS Sep-24 A 5.843 17 1,148 1,165 8 99.8 99.6 8 CMCS COMCAST Oct-28 A 4.150 1,474 988 2,462 21 5.1 5.2 95.8 95.5 9 BAC BANK OF AMERICA Jul-33 A 5.015 324 956 1,280 19 93.9 93.5 10 CVS CVS CAREMARK CORP Feb-26 BBB <td>2</td> <td>WFC</td> <td>WELLS FARGO</td> <td>Apr-26</td> <td>Α</td> <td>2.188</td> <td>122</td> <td>5,262</td> <td>5,384</td> <td>20</td> <td></td> <td></td> <td>94.6</td> <td>94.2</td>	2	WFC	WELLS FARGO	Apr-26	Α	2.188	122	5,262	5,384	20			94.6	94.2
5 LTHM Null Jul-25 N/R 4.125 55 2,210 2,265 10 165.5 162.3 6 CVS CVS CAREMARK CORP Mar-28 BBB 4.300 1,772 1,449 3,221 26 5.4 5.6 95.6 95.1 7 GS GOLDMAN SACHS Sep-24 A 5.843 17 1,148 1,165 8 - 99.8 99.6 8 CMCS COMCAST Oct-28 A 4.150 1,474 988 2,462 21 5.1 5.2 95.8 95.5 9 BAC BANK OF AMERICA Jul-33 A 5.015 324 956 1,280 19 - 93.9 93.5 10 CVS CVS CAREMARK CORP Feb-26 BBB 5.000 255 939 1,194 18 5.5 5.7 98.9 98.4 11 VZ VERIZON Mar-29 BBB 6.852 83 </td <td>3</td> <td>Т</td> <td>AT&T</td> <td>Mar-27</td> <td>BBB</td> <td>4.250</td> <td>301</td> <td>2,849</td> <td>3,150</td> <td>23</td> <td>5.4</td> <td>5.1</td> <td>96.7</td> <td>97.4</td>	3	Т	AT&T	Mar-27	BBB	4.250	301	2,849	3,150	23	5.4	5.1	96.7	97.4
6 CVS CVS CAREMARK CORP Mar-28 BBB 4.300 1,772 1,449 3,221 26 5.4 5.6 95.6 95.1 7 GS GOLDMAN SACHS Sep-24 A 5.843 17 1,148 1,165 8 99.8 99.6 8 CMCS COMCAST Oct-28 A 4.150 1,474 988 2,462 21 5.1 5.2 95.8 95.5 9 BAC BANK OF AMERICA Jul-33 A 5.015 324 956 1,280 19 5 93.9 93.5 10 CVS CVS CAREMARK CORP Feb-26 BBB 5.000 255 939 1,194 18 5.5 5.7 98.9 98.4 11 VZ VERIZON Mar-27 BBB 4.125 562 822 1,384 15 5.3 5.4 96.4 96.0 12 T AT&T Jun-24 BBB 6.852 83 730 813 13 13 100.5 100.4 13 GS GOLDMAN SACHS Mar-30 A 3.800 752 720 1,472 18 5.7 5.8 89.9 89.6 14 HPQ HEWLETT PACKARD Oct-25 BBB 4.900 1,556 700 2,256 19 5.7 5.8 98.5 98.4 15 T AT&T Mar-29 BBB 4.350 734 678 1,412 13 5.4 5.5 5.7 97.2 97.1 17 TD TORONTO DOMINION BK SR MEDIUM TERM BK NT Jan-26 A 5.103 94 643 737 6 5.4 5.3 99.4 99.7 18 C CITIGROUP Jul-28 BBB 3.668 2,839 627 3,466 15 5 93.0 92.8 19 WFC WELLS FARGO May-28 A 3.584 274 611 885 7 5 5.1 93.0 92.8 19.5 10.5 10.5 10.5 10.5 10.5 10.5 10.5 10	4	MMC	MARSH & MCLENNAN COS INC	Mar-24	Α	3.875	72	2,737	2,809	19	5.6	6.1	99.4	99.2
7 GS GOLDMAN SACHS Sep-24 A 5.843 17 1,148 1,165 8 99.8 99.6 8 CMCS COMCAST Oct-28 A 4.150 1,474 988 2,462 21 5.1 5.2 95.8 95.5 9 BAC BANK OF AMERICA Jul-33 A 5.015 324 956 1,280 19 93.9 93.5 10 CVS CVS CAREMARK CORP Feb-26 BBB 5.000 255 939 1,194 18 5.5 5.7 98.9 98.4 11 VZ VERIZON Mar-27 BBB 4.125 562 822 1,384 15 5.3 5.4 96.0 12 T AT&T Jun-24 BBB 6.852 83 730 813 13	5	LTHM	Null	Jul-25	N/R	4.125	55	2,210	2,265	10			165.5	162.3
8 CMCS COMCAST Oct-28 A 4.150 1,474 988 2,462 21 5.1 5.2 95.8 95.5 9 BAC BANK OF AMERICA Jul-33 A 5.015 324 956 1,280 19 93.9 93.5 10 CVS CVS CAREMARK CORP Feb-26 BBB 5.000 255 939 1,194 18 5.5 5.7 98.9 98.4 11 VZ VERIZON Mar-27 BBB 4.125 562 822 1,384 15 5.3 5.4 96.4 96.0 12 T AT&T Jun-24 BBB 6.852 83 730 813 13 100.5 100.4 13 GS GOLDMAN SACHS Mar-30 A 3.800 752 720 1,472 18 5.7 5.8 89.9 89.6 14 HPQ HEWLETPACKARD Oct-25 BBB	6	CVS	CVS CAREMARK CORP	Mar-28	BBB	4.300	1,772	1,449	3,221	26	5.4	5.6	95.6	95.1
9 BAC BANK OF AMERICA Jul-33 A 5.015 324 956 1,280 19 93.9 93.5 10 CVS CVS CAREMARK CORP Feb-26 BBB 5.000 255 939 1,194 18 5.5 5.7 98.9 98.4 11 VZ VERIZON Mar-27 BBB 4.125 562 822 1,384 15 5.3 5.4 96.4 96.0 12 T AT&T Jun-24 BBB 6.852 83 730 813 13 100.5 100.4 13 GS GOLDMAN SACHS Mar-30 A 3.800 752 720 1,472 18 5.7 5.8 89.9 89.6 14 HPQ HEWLETT PACKARD Oct-25 BBB 4.900 1,556 700 2,256 19 5.7 5.8 98.5 98.4 15 T AT&T Mar-29 BBB 4.350 734	7	GS	GOLDMAN SACHS	Sep-24	Α	5.843	17	1,148	1,165	8			99.8	99.6
10 CVS CVS CAREMARK CORP Feb-26 BBB 5.000 255 939 1,194 18 5.5 5.7 98.9 98.4 11 VZ VERIZON Mar-27 BBB 4.125 562 822 1,384 15 5.3 5.4 96.4 96.0 12 T AT&T Jun-24 BBB 6.852 83 730 813 13 100.5 100.4 13 GS GOLDMAN SACHS Mar-30 A 3.800 752 720 1,472 18 5.7 5.8 89.9 89.6 14 HPQ HEWLETT PACKARD Oct-25 BBB 4.900 1,556 700 2,256 19 5.7 5.8 98.5 98.4 15 T AT&T Mar-29 BBB 4.350 734 678 1,412 13 5.4 5.5 95.1 95.0 16 UTX UNITED TECHNOLOGIES CORP Aug-25<	8	CMCS	COMCAST	Oct-28	Α	4.150	1,474	988	2,462	21	5.1	5.2	95.8	95.5
11 VZ VERIZON Mar-27 BBB 4.125 562 822 1,384 15 5.3 5.4 96.4 96.0 12 T AT&T Jun-24 BBB 6.852 83 730 813 13	9	BAC	BANK OF AMERICA	Jul-33	Α	5.015	324	956	1,280	19			93.9	93.5
12 T AT&T Jun-24 BBB 6.852 83 730 813 13 100.5 100.4 13 GS GOLDMAN SACHS Mar-30 A 3.800 752 720 1,472 18 5.7 5.8 89.9 89.6 14 HPQ HEWLETT PACKARD Oct-25 BBB 4.900 1,556 700 2,256 19 5.7 5.8 98.5 98.4 15 T AT&T Mar-29 BBB 4.350 734 678 1,412 13 5.4 5.5 95.1 95.0 16 UTX UNITED TECHNOLOGIES CORP Aug-25 BBB 3.950 1,920 671 2,591 15 5.7 5.7 97.2 97.1 17 TD TORONTO DOMINION BK SR MEDIUM TERM BK NT Jan-26 A 5.103 94 643 737 6 5.4 5.3 99.4 99.7 18 C CITIGROUP Jul-28 </td <td>10</td> <td>CVS</td> <td>CVS CAREMARK CORP</td> <td>Feb-26</td> <td>BBB</td> <td>5.000</td> <td>255</td> <td>939</td> <td>1,194</td> <td>18</td> <td>5.5</td> <td>5.7</td> <td>98.9</td> <td>98.4</td>	10	CVS	CVS CAREMARK CORP	Feb-26	BBB	5.000	255	939	1,194	18	5.5	5.7	98.9	98.4
13 GS GOLDMAN SACHS Mar-30 A 3.800 752 720 1,472 18 5.7 5.8 89.9 89.6 14 HPQ HEWLETT PACKARD Oct-25 BBB 4.900 1,556 700 2,256 19 5.7 5.8 98.5 98.4 15 T AT&T Mar-29 BBB 4.350 734 678 1,412 13 5.4 5.5 95.1 95.0 16 UTX UNITED TECHNOLOGIES CORP Aug-25 BBB 3.950 1,920 671 2,591 15 5.7 5.7 97.2 97.1 17 TD TORONTO DOMINION BK SR MEDIUM TERM BK NT Jan-26 A 5.103 94 643 737 6 5.4 5.3 99.4 99.7 18 C CITIGROUP Jul-28 BBB 3.668 2,839 627 3,466 15 91.7 92.9 19 WFC WELLS FARGO	11	VZ	VERIZON	Mar-27	BBB	4.125	562	822	1,384	15	5.3	5.4	96.4	96.0
14 HPQ HEWLETT PACKARD Oct-25 BBB 4.900 1,556 700 2,256 19 5.7 5.8 98.5 98.4 15 T AT&T Mar-29 BBB 4.350 734 678 1,412 13 5.4 5.5 95.1 95.0 16 UTX UNITED TECHNOLOGIES CORP Aug-25 BBB 3.950 1,920 671 2,591 15 5.7 5.7 97.2 97.1 17 TD TORONTO DOMINION BK SR MEDIUM TERM BK NT Jan-26 A 5.103 94 643 737 6 5.4 5.3 99.4 99.7 18 C CITIGROUP Jul-28 BBB 3.668 2,839 627 3,466 15 91.7 92.9 19 WFC WELLS FARGO May-28 A 3.584 274 611 885 7 5 93.0 92.8	12	Т	AT&T	Jun-24	BBB	6.852	83	730	813	13			100.5	100.4
15 T AT&T Mar-29 BBB 4.350 734 678 1,412 13 5.4 5.5 95.1 95.0 16 UTX UNITED TECHNOLOGIES CORP Aug-25 BBB 3.950 1,920 671 2,591 15 5.7 5.7 97.2 97.1 17 TD TORONTO DOMINION BK SR MEDIUM TERM BK NT Jan-26 A 5.103 94 643 737 6 5.4 5.3 99.4 99.7 18 C CITIGROUP Jul-28 BBB 3.668 2,839 627 3,466 15 91.7 92.9 19 WFC WELLS FARGO May-28 A 3.584 274 611 885 7 93.0 92.8	13	GS	GOLDMAN SACHS	Mar-30	Α	3.800	752	720	1,472	18	5.7	5.8	89.9	89.6
16 UTX UNITED TECHNOLOGIES CORP Aug-25 BBB 3.950 1,920 671 2,591 15 5.7 5.7 97.2 97.1 17 TD TORONTO DOMINION BK SR MEDIUM TERM BK NT Jan-26 A 5.103 94 643 737 6 5.4 5.3 99.4 99.7 18 C CITIGROUP Jul-28 BBB 3.668 2,839 627 3,466 15 91.7 92.9 19 WFC WELLS FARGO May-28 A 3.584 274 611 885 7 93.0 92.8	14	HPQ	HEWLETT PACKARD	Oct-25	BBB	4.900	1,556	700	2,256	19	5.7	5.8	98.5	98.4
17 TD TORONTO DOMINION BK SR MEDIUM TERM BK NT Jan-26 A 5.103 94 643 737 6 5.4 5.3 99.4 99.7 18 C CITIGROUP Jul-28 BBB 3.668 2,839 627 3,466 15 91.7 92.9 19 WFC WELLS FARGO May-28 A 3.584 274 611 885 7 93.0 92.8	15	Т	AT&T	Mar-29	BBB	4.350	734	678	1,412	13	5.4	5.5	95.1	95.0
18 C CITIGROUP Jul-28 BBB 3.668 2,839 627 3,466 15 91.7 92.9 19 WFC WELLS FARGO May-28 A 3.584 274 611 885 7 93.0 92.8	16	UTX	UNITED TECHNOLOGIES CORP	Aug-25	BBB	3.950	1,920	671	2,591	15	5.7	5.7	97.2	97.1
19 WFC WELLS FARGO May-28 A 3.584 274 611 885 7 93.0 92.8	17	TD	TORONTO DOMINION BK SR MEDIUM TERM BK NT	Jan-26	Α	5.103	94	643	737	6	5.4	5.3	99.4	99.7
	18	С	CITIGROUP	Jul-28	BBB	3.668	2,839	627	3,466	15			91.7	92.9
20 AMGN AMGENINC Feb-27 BBB 2.200 676 600 1,276 9 5.2 5.3 91.1 91.0	19	WFC	WELLS FARGO	May-28	Α	3.584	274	611	885	7			93.0	92.8
	20	AMGN	AMGEN INC	Feb-27	BBB	2.200	676	600	1,276	9	5.2	5.3	91.1	91.0

Source: TRACE and Tradeweb Direct



⁻Based on odd-lot customer transactions (<100M) reported in TRACE.

⁻Ratings (AAA, AA, A, BBB, BB, B, C) are based on aggregate ratings from Moody's and S&P (when available).

Appendix

Maturity

We consider the following maturity ranges for maturity buckets. TTM is Time to Maturity in years.

1Y: 0.5 <= TTM <= 1.5 3Y: 2 <= TTM <= 4 5Y: 4 < TTM <= 6 10Y: 7.5 <= TTM <= 12.5 20Y: 15 <= TTM <=25

Rating

Rating buckets (AAA, AA, A, BBB, HY) in yield matrix are based on agggregate ratings from Moody's and S&P (when available).

For Corporate, we only consider transactions in bonds that are rated by both rating agencies.

- -Corporate AAA: Bonds rated AAA by both rating agencies.
- -Corporate AA: Bonds rated AA by both rating agencies.
- -Corporate A: Bonds rated A by both rating agencies.
- -Corporate BBB: Bonds rated BBB by both rating agencies.
- -Corporate High Yield: Bonds rated High Yield by both rating agencies.

(Transactions in corporate bonds that are rated as AA by one agency and as A by another agency are excluded.)

- -Municipal AAA: Bonds rates AAA by both rating agencies, or AAA by one agency and not rated by another agency.
- -Municipal AA: Bonds rated AA by both rating agencies, or AA by one agency and not rated by another agency.
- -Municipal A: Bonds rated A by both rating agencies, or A by ones agency and not rated by another agency.
- -Municipal BBB: Bonds rated High Yield by both rating agencies, or BBB by one agency and not rated by another agency.
- -Municipal High Yield: Bonds rated High Yield by both rating agencies, or High Yield by one agency and not rated by another agency.

(Transactions in municipal bonds that are rated as AA by one agency and as A by another agency are excluded.)

(Transactions in municipal bonds that are rated as AA by one agency and not rated by the other agency are included.)



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