

Market Transparency Report

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

April 2024

www.tradeweb.com

1177 Avenue of the Americas
New York, NY 10036
212.852.1234

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.

Page Reference

3. Market Commentary
4. Yield Matrix
5. Treasury, Agency, CD Transaction Trend Summary
6. Corporate Bonds: Odd-Lot Customer Transaction Trend Summary
7. Municipal Bonds: Odd-Lot Customer Transaction Trend Summary
8. Corporate Bonds: Top 20 Most Active Issuers
9. Corporate Bonds: Top 20 Issuers with Highest Buy/Sell Ratio
10. Corporate Bonds: Top 20 Issuers with Lowest Buy/Sell Ratio
11. Corporate Bonds: Top 20 Most Bought Issues
12. Corporate Bonds: Top 20 Most Sold Issues
13. Appendix
14. Disclosures

Market Commentary

Monthly Change Table for April 2024

	Median Yield (bps)	Daily Trade Volume	Buy/Sell Ratio
Agency	16	13.3%	0.6
CD	2	-2.8%	-0.4
Corp	28	-5.4%	-0.2
Municipal	29	15.6%	0.0
Treasury	2	18.0%	0.0

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

Yield Matrix

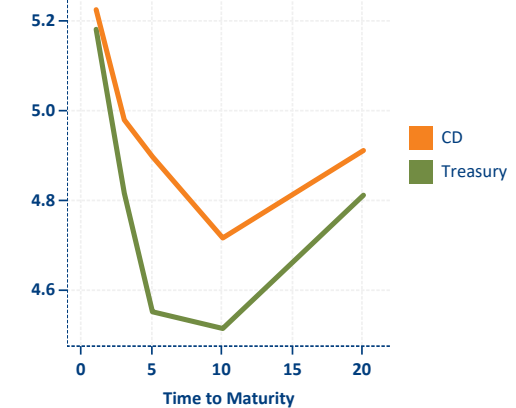
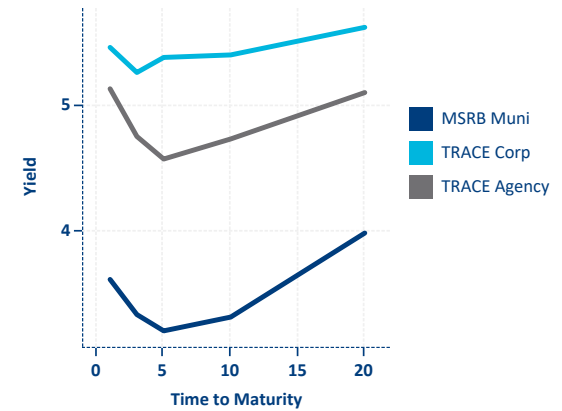
Average Yield, % for April 2024

Market	TTM					Median Maturity (Years)
	1	3	5	10	20	
MSRB Muni	3.6	3.3	3.2	3.3	4.0	8
TRACE Corp	5.5	5.3	5.4	5.4	5.6	3
TRACE Agency	5.1	4.8	4.6	4.7	5.1	4
CD	5.2	5.0	4.9	4.7	4.9	1
Treasury	5.2	4.8	4.6	4.5	4.8	0

Asset Class

Market	Category (Filtered)	Rating Key	1	3	5	10	20	Median Maturity (Years)	
TRACE Corp	Financial	AA	4.4	5.0	5.1		5.5	5	
		A	5.3	5.1	5.0	5.2	5.5	3	
		BBB	5.7	5.5	5.9	5.6	6.2	3	
		HY		7.3	8.2	8.7		4	
	Non-Financial	AAA			4.6	4.9		4.9	16
		AA		4.9	4.6	4.7	5.2	5.2	16
		A	4.9	5.0	5.0	5.1	5.6	5.6	4
		BBB	5.6	5.3	5.3	5.5	6.4	6.4	4
		HY	7.9	7.0	16.5				4
MSRB Muni	GO	AAA	3.5	3.2	3.1	3.2	3.9	3.9	6
		AA	3.6	3.3	3.2	3.3	3.9	3.9	7
		A	3.8	3.5	3.4	3.5	4.1	4.1	6
		BBB	4.3	3.8	4.1	4.2	4.6	4.6	8
	Revenue	HY		5.1	7.0	6.8	5.4	5.4	19
		AAA	3.6	3.3	3.2	3.3	3.9	3.9	8
		AA	3.6	3.3	3.2	3.3	3.9	3.9	8
		A	3.8	3.6	3.4	3.5	4.1	4.1	9
		BBB	4.2	4.2	4.2	4.3	4.8	4.8	13
		HY	18.8	7.1	6.7	7.0	5.4	5.4	14

Average Yield, %



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 transactions 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.

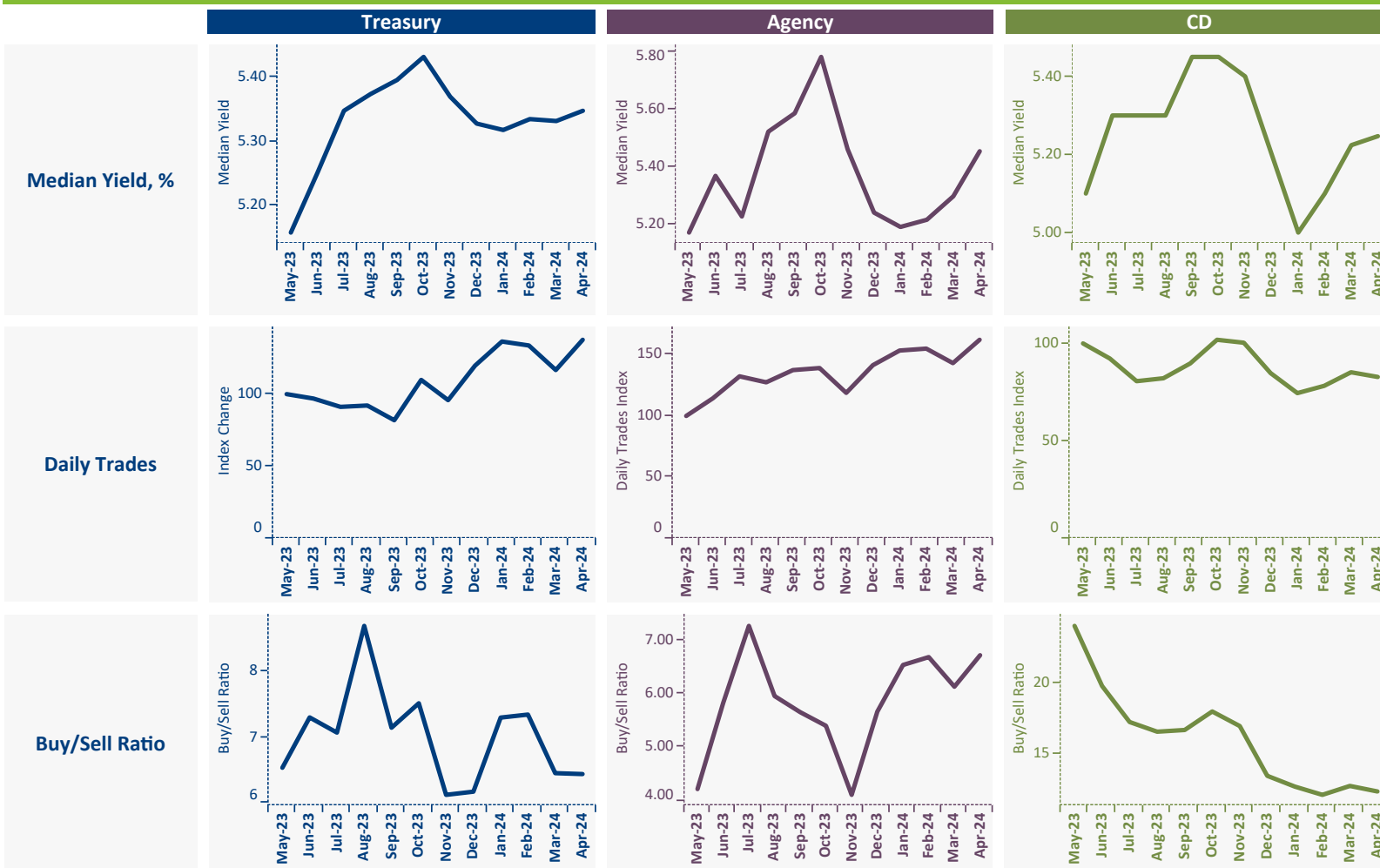
-The weights are based on transaction size.

-Yield summaries for Corporate and Agency exclude transactions in callable or floating-rate coupon bonds.

-Yield summaries for Municipal exclude transactions in taxable bonds.

-See appendix for the definition of maturity and rating buckets.

Treasury, Agency, CD Transaction Trend Summary



Daily Trades: First month = 100

Source: TRACE and Tradeweb Direct

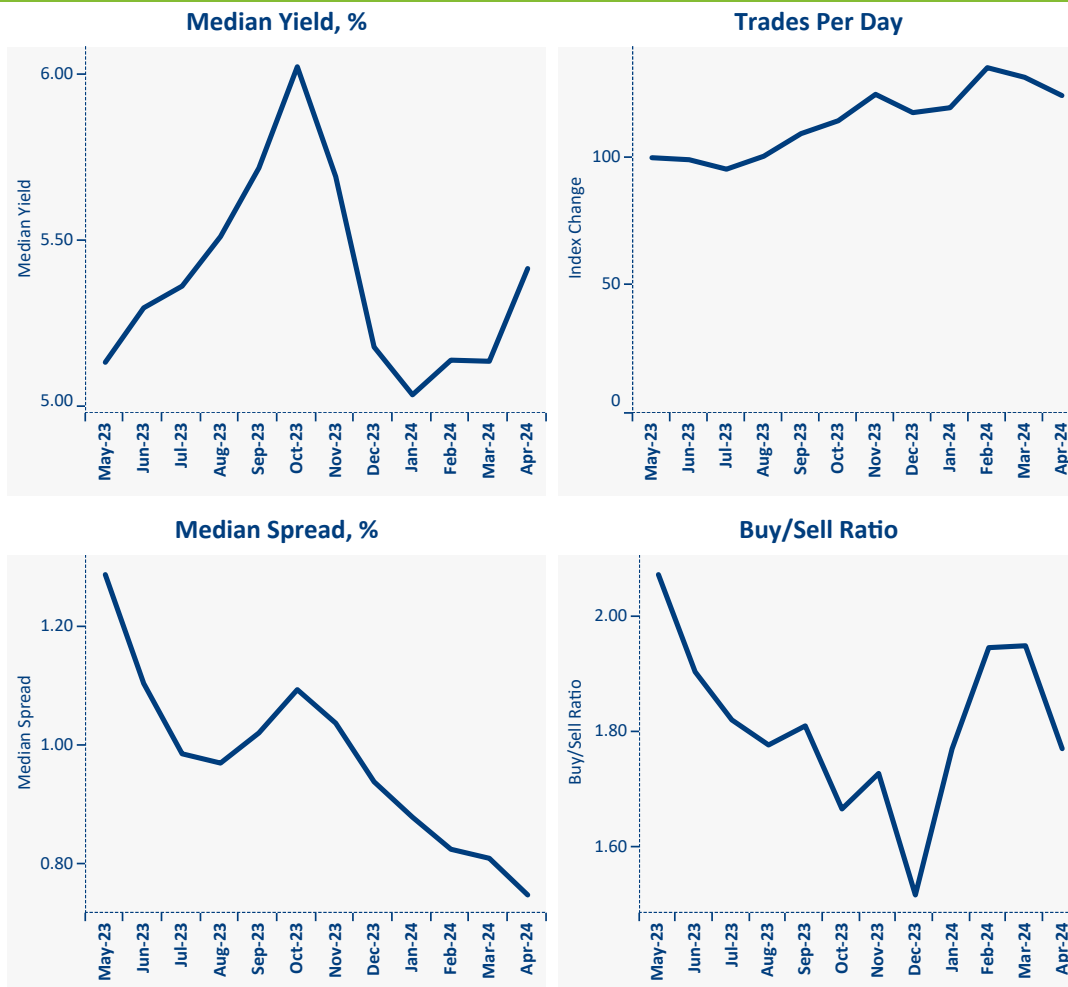
-Treasury and CD are based on transactions on the Tradeweb Direct Platform. Median yields are based on all customer buy transactions.

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

©2020 Tradeweb Markets LLC. All rights reserved. The information contained herein is highly confidential and some or all of it may constitute material, non-public information under applicable securities laws. This information must be kept strictly confidential, may not be disclosed or distributed to anyone without the express written consent of Tradeweb Markets LLC, and may only be used as expressly permitted by any applicable non-disclosure, customer, or other written agreement with Tradeweb.



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...

©2020 Tradeweb Markets LLC. All rights reserved. The information contained herein is highly confidential and some or all of it may constitute material, non-public information under applicable securities laws. This information must be kept strictly confidential, may not be disclosed or distributed to anyone without the express written consent of Tradeweb Markets LLC, and may only be used as expressly permitted by any applicable non-disclosure, customer, or other written agreement with Tradeweb.



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.

©2020 Tradeweb Markets LLC. All rights reserved. The information contained herein is highly confidential and some or all of it may constitute material, non-public information under applicable securities laws. This information must be kept strictly confidential, may not be disclosed or distributed to anyone without the express written consent of Tradeweb Markets LLC, and may only be used as expressly permitted by any applicable non-disclosure, customer, or other written agreement with Tradeweb.



Corporate Bonds: Top 20 Most Active Issuers

April 2024

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	JPM	JP MORGAN CHASE	A	1,202	3.2%	35,616	1.7	632	5.4	5.3	5.2	5.7	5.5
2	TFC	Null	A	39	2.9%	32,587	10.2	175	5.5	5.3	5.7		
3	GS	GOLDMAN SACHS	A	1,431	2.7%	29,857	1.7	527	5.5	5.4	5.4	5.5	5.5
4	C	CITIGROUP	BBB	892	2.3%	25,695	1.5	471	5.6	5.4	5.4	5.7	5.7
5	BAC	BANK OF AMERICA	A	536	2.1%	23,311	1.4	460	5.5	5.2	5.4	5.7	5.5
6	WFC	WELLS FARGO	A	230	1.9%	20,697	1.6	319	5.5	5.4	5.4	5.6	5.9
7	MS	MORGAN STANLEY	A	1,046	1.6%	17,679	1.3	309	5.4	5.3	5.4	5.2	5.6
8	GM	GENERAL MOTORS FINANCIAL COMPANY INC	BBB	88	1.3%	14,358	1.5	271	5.7	5.6	5.6	6.0	6.3
9	ORCL	ORACLE CORP	BBB	38	1.3%	14,116	1.6	232	5.6	5.4	5.3	5.6	5.9
10	AAPL	APPLE INC	AA	52	1.1%	12,536	1.9	197	5.2	4.9	4.8	4.9	5.2
11	CVS	CVS CAREMARK CORP	BBB	45	1.1%	11,934	1.6	167	5.6	5.4	5.3	5.7	6.0
12	T	AT&T	BBB	106	1.1%	11,848	1.4	164	5.8	5.3	5.4	5.6	5.9
13	VZ	VERIZON	BBB	153	1.0%	11,479	1.4	156	5.4	5.3	5.3	5.4	5.7
14	BRK	BERKSHIRE HATHAWAY	A	150	1.0%	11,029	2.5	228	5.4	5.2	5.2	5.5	5.5
15	CMCS	COMCAST	A	67	1.0%	11,016	1.5	162	5.4	5.1	5.2	5.4	5.7
16	SCHW	SCHWAB CHARLES CORP NEW	A	34	1.0%	10,875	4.4	123	5.3	5.3	5.1	5.4	
17	UNH	UNITEDHEALTH	A	62	0.9%	10,195	2.2	184	5.3	5.1	5.1	5.3	5.5
18	NEE	FPL GROUP CAP INC	BBB	71	0.8%	9,281	2.7	165	5.6	5.3	5.3	5.3	5.5
19	BA	BOEING CO	BBB	48	0.8%	9,162	2.6	179	5.9	5.9	6.0	6.2	6.7
20	AMGN	AMGEN INC	BBB	42	0.8%	9,101	2.1	135	5.5	5.3	5.3	5.4	5.7

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

April 2024

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	TFC	Null	A	39	2.9%	32,587	29,679	2,908	10.2	175	5.5	5.3	5.7		
2	MU	MICRON TECHNOLOGY INC	BBB	12	0.5%	5,021	4,293	728	5.9	48		5.2	5.3	5.6	6.0
3	SCHW	SCHWAB CHARLES CORP NEW	A	34	1.0%	10,875	8,843	2,032	4.4	123	5.3	5.3	5.1	5.4	
4	PSX	PHILLIPS 66	BBB	25	0.3%	3,156	2,521	635	4.0	62	5.5	5.3	5.3	5.3	5.8
5	AEP	AMERICAN ELEC PWR CO INC	BBB	76	0.3%	3,621	2,673	948	2.8	76	5.7	5.4	5.4	5.7	6.1
6	NEE	FPL GROUP CAP INC	BBB	71	0.8%	9,281	6,751	2,530	2.7	165	5.6	5.3	5.3	5.3	5.5
7	TRP	TRANSCANADA PIPELINES LTD	BBB	31	0.2%	2,764	1,997	767	2.6	49	5.7	5.6	5.6	5.8	6.1
8	MO	ALTRIA GROUP INC	BBB	22	0.3%	3,828	2,759	1,069	2.6	72	5.5	5.4	5.3	5.8	6.1
9	BA	BOEING CO	BBB	48	0.8%	9,162	6,583	2,579	2.6	179	5.9	5.9	6.0	6.2	6.7
10	UTX	UNITED TECHNOLOGIES CORP	BBB	57	0.7%	8,233	5,906	2,327	2.5	121	5.4	5.2	5.3	5.6	5.8
11	TM	TOYOTA	A	85	0.6%	6,775	4,850	1,925	2.5	152	5.3	5.1	5.1	5.2	5.7
12	NOC	NORTHROP GRUMMAN CORP	BBB	22	0.4%	4,207	3,009	1,198	2.5	47	5.6	5.2	5.0	5.4	5.6
13	BRK	BERKSHIRE HATHAWAY	A	150	1.0%	11,029	7,875	3,154	2.5	228	5.4	5.2	5.2	5.5	5.5
14	CSCO	CISCO	AA	12	0.3%	3,264	2,326	938	2.5	69	5.2	5.0	5.0	5.3	5.4
15	EIX	EDISON MISSION	A	60	0.5%	5,329	3,786	1,543	2.5	103	5.8	5.4	5.5	5.6	5.9
16	SBUX	STARBUCKS CORP	BBB	20	0.3%	3,062	2,162	900	2.4	60	5.4	5.2	5.1	5.3	5.6
17	MET	METLIFE	A	22	0.4%	3,958	2,785	1,173	2.4	60	5.4		5.1	5.4	5.7
18	HD	HOME DEPOT	A	37	0.6%	7,077	4,956	2,121	2.3	104	5.2	5.1	5.1	5.1	5.5
19	HON	HONEYWELL INTL INC	A	23	0.3%	2,921	2,045	876	2.3	62	5.2	5.0	5.0	5.2	5.4
20	INTC	INTEL CORP	A	41	0.7%	7,761	5,428	2,333	2.3	162	5.4	5.2	5.2	5.3	5.7

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

April 2024

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	BMO	BANK MONTREAL MEDIUM TERM SR NTS BOOK EN	A	331	0.5%	5,739	2,348	3,391	0.69	101	5.6	5.5	5.4	6.1	
2	CHTR	CCO HOLDINGS LLC	BBB	45	0.3%	3,105	1,304	1,801	0.72	60	6.0	6.1	6.4	6.8	7.5
3	FANG	Diamondback Energy, Inc.	BBB	12	0.3%	2,927	1,434	1,493	0.96	27		5.3	5.4	5.7	
4	RDS	SHELL	AA	22	0.3%	3,096	1,581	1,515	1.04	45	5.4	5.1	5.1	5.3	5.6
5	BTI	BAT INTERNATIONAL FINANCE PLC	BBB	37	0.4%	4,266	2,284	1,982	1.15	92	5.9	5.6	5.7	6.1	6.7
6	APC	ANADARKO PETE CORP	BBB	68	0.3%	3,540	1,918	1,622	1.18	67	5.8	5.9	5.7	6.1	6.4
7	AMT	AMERICAN TOWER CORP NEW	BBB	34	0.3%	3,362	1,856	1,506	1.23	63	5.8	5.6	5.6	5.8	
8	DELL	DELL	BBB	25	0.3%	3,485	1,945	1,540	1.26	73	5.6	5.6	5.4	5.7	6.1
9	MS	MORGAN STANLEY	A	1,046	1.6%	17,679	9,946	7,733	1.29	309	5.6	5.4	5.9	5.4	5.6
10	TMUS	T-MOBILE USA INC	BBB	40	0.5%	5,844	3,309	2,535	1.31	116	5.8	5.4	5.5	5.6	5.8
11	CAT	CATERPILLAR	A	55	0.3%	3,249	1,856	1,393	1.33	64	5.4	5.1	5.1	5.2	5.5
12	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	BBB	205	0.4%	4,323	2,472	1,851	1.34	72	6.4	5.6	5.7	5.6	5.7
13	EXC	EXELON GENERATION CO LLC	BBB	91	0.3%	2,860	1,642	1,218	1.35	63	5.6	5.4	5.4	5.6	5.9
14	T	AT&T	BBB	106	1.1%	11,848	6,862	4,986	1.38	164	6.3	5.4	5.4	5.6	5.9
15	BAC	BANK OF AMERICA	A	536	2.1%	23,311	13,553	9,758	1.39	460	5.7	5.3	5.8	5.6	5.5
16	VZ	VERIZON	BBB	153	1.0%	11,479	6,698	4,781	1.40	156	5.7	5.3	5.4	5.5	5.8
17	EDP	ENTERPRISE PRODS OPER LLC	A	35	0.4%	4,827	2,836	1,991	1.42	67	5.6	5.2	5.3	5.4	5.8
18	RY	ROYAL BANK OF CANADA	A	303	0.4%	4,678	2,758	1,920	1.44	93	5.6	5.3	6.1	5.5	6.1
19	VIA	VIACOM INC NEW	BBB	26	0.3%	3,150	1,857	1,293	1.44	54	6.8	6.6	7.0	7.8	8.0
20	ANTM	Null	A	27	0.3%	3,628	2,158	1,470	1.47	55	5.7	5.3	5.4	5.5	5.7

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.

©2020 Tradeweb Markets LLC. All rights reserved. The information contained herein is highly confidential and some or all of it may constitute material, non-public information under applicable securities laws. This information must be kept strictly confidential, may not be disclosed or distributed to anyone without the express written consent of Tradeweb Markets LLC, and may only be used as expressly permitted by any applicable non-disclosure, customer, or other written agreement with Tradeweb.



Corporate Bonds: Top 20 Most Bought Issues

April 2024

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	TFC	Null	Jun-34	A	5.867	25,023	125	25,148	49			98.1	97.9
2	SCHW	SCHWAB CHARLES CORP NEW	Aug-34	A	6.136	5,387	49	5,436	15			101.4	101.6
3	CVS	CVS CAREMARK CORP	Mar-28	BBB	4.300	2,599	1,220	3,819	29	5.4	5.4	96.1	96.0
4	GS	GOLDMAN SACHS	Null	BB	7.500	2,036	135	2,171	71			101.4	101.0
5	CMCS	COMCAST	Oct-28	A	4.150	1,977	910	2,887	20	5.2	5.2	96.0	96.0
6	UTX	UNITED TECHNOLOGIES CORP	Aug-25	BBB	3.950	1,747	562	2,309	11	5.4	5.5	98.2	98.1
7	BP	BP	Sep-27	A	3.279	1,745	528	2,273	11	5.2	5.2	94.1	94.0
8	HPQ	HEWLETT PACKARD	Oct-25	BBB	4.900	1,722	607	2,329	15	5.7	5.7	98.9	98.9
9	LOW	LOWES COS INC	Apr-26	BBB	2.500	1,685	515	2,200	11	5.3	5.3	94.8	94.8
10	MU	MICRON TECHNOLOGY INC	Nov-29	BBB	6.750	1,685	123	1,808	12	5.3	5.5	106.9	105.6
11	AAPL	APPLE INC	Nov-27	AA	3.000	1,626	527	2,153	11	4.9	4.9	93.9	93.9
12	ORCL	ORACLE CORP	Mar-28	BBB	2.300	1,549	126	1,675	18	5.4	5.4	89.0	89.2
13	JPM	JP MORGAN CHASE	Null	BBB	6.875	1,546	102	1,648	52			103.0	102.1
14	HCA	HCA INC	Mar-32	BBB	3.625	1,539	46	1,585	12	5.8	5.8	86.6	86.1
15	DWDP	Null	Nov-28	BBB	4.725	1,520	486	2,006	13	5.1	5.2	98.3	98.3
16	JPM	JP MORGAN CHASE	Null	BBB	4.600	1,488	655	2,143	34	4.7	4.7	98.4	98.0
17	HD	HOME DEPOT	Sep-32	A	4.500	1,481	221	1,702	11	5.1	5.1	95.9	96.0
18	PFE	PFIZER	Mar-29	A	3.450	1,437	376	1,813	11	5.0	5.0	93.3	93.3
19	NOC	NORTHROP GRUMMAN CORP	Mar-33	BBB	4.700	1,302	201	1,503	7	5.4	5.4	95.2	95.3
20	BUD	ANHEUSER BUSCH INBEV WORLDWIDE INC	Jun-30	A	3.500	1,298	378	1,676	12	5.2	5.2	91.3	91.3

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).

©2020 Tradeweb Markets LLC. All rights reserved. The information contained herein is highly confidential and some or all of it may constitute material, non-public information under applicable securities laws. This information must be kept strictly confidential, may not be disclosed or distributed to anyone without the express written consent of Tradeweb Markets LLC, and may only be used as expressly permitted by any applicable non-disclosure, customer, or other written agreement with Tradeweb.



Corporate Bonds: Top 20 Most Sold Issues

April 2024

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	BMO	BANK MONTREAL MEDIUM TERM SR NTS BOOK EN	Jun-24	A	2.500	20	2,083	2,103	23	5.3	6.0	99.4	99.2
2	GM	GENERAL MOTORS FINANCIAL COMPANY INC	Mar-62	BB	5.750	336	1,396	1,732	13	6.1	6.1	94.5	94.5
3	CVS	CVS CAREMARK CORP	Mar-28	BBB	4.300	2,599	1,220	3,819	29	5.4	5.4	96.1	96.0
4	FANG	Diamondback Energy, Inc.	Dec-26	BBB	3.250	23	1,174	1,197	5	5.0	5.3	95.8	95.1
5	ORCL	ORACLE CORP	Nov-32	BBB	6.250	454	968	1,422	17	5.6	5.8	104.5	103.2
6	CMCS	COMCAST	Oct-28	A	4.150	1,977	910	2,887	20	5.2	5.2	96.0	96.0
7	JPM	JP MORGAN CHASE	Null	BBB	0.000	19	840	859	9	8.8	8.8	100.0	99.9
8	JPM	JP MORGAN CHASE	Jul-25	A	3.900	967	677	1,644	16	5.4	5.3	98.2	98.3
9	VZ	VERIZON	Mar-27	BBB	4.125	834	661	1,495	14	5.2	5.3	97.0	96.9
10	JPM	JP MORGAN CHASE	Null	BBB	4.600	1,488	655	2,143	34	4.7	4.7	98.4	98.0
11	T	AT&T	Mar-29	BBB	4.350	1,039	637	1,676	14	5.3	5.3	95.8	95.8
12	WFC	WELLS FARGO	May-28	A	3.584	494	611	1,105	8			94.3	94.2
13	GS	GOLDMAN SACHS	Mar-30	A	3.800	977	607	1,584	15	5.4	5.5	92.1	91.8
14	HPQ	HEWLETT PACKARD	Oct-25	BBB	4.900	1,722	607	2,329	15	5.7	5.7	98.9	98.9
15	C	CITIGROUP	Jul-28	BBB	3.668	281	565	846	9			94.3	94.2
16	UTX	UNITED TECHNOLOGIES CORP	Aug-25	BBB	3.950	1,747	562	2,309	11	5.4	5.5	98.2	98.1
17	BP	BP	Sep-27	A	3.279	1,745	528	2,273	11	5.2	5.2	94.1	94.0
18	AAPL	APPLE INC	Nov-27	AA	3.000	1,626	527	2,153	11	4.9	4.9	93.9	93.9
19	LOW	LOWES COS INC	Apr-26	BBB	2.500	1,685	515	2,200	11	5.3	5.3	94.8	94.8
20	CHTR	CCO HOLDINGS LLC	Feb-34	BBB	6.650	71	505	576	11	6.8	6.8	99.2	98.6

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).

©2020 Tradeweb Markets LLC. All rights reserved. The information contained herein is highly confidential and some or all of it may constitute material, non-public information under applicable securities laws. This information must be kept strictly confidential, may not be disclosed or distributed to anyone without the express written consent of Tradeweb Markets LLC, and may only be used as expressly permitted by any applicable non-disclosure, customer, or other written agreement with Tradeweb.



Appendix

Maturity

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

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

Rating

Rating buckets (AAA, AA, A, BBB, HY) in yield matrix are based on aggregate 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 rated 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 one 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.)

Disclosures

This report represents certain customer trades in securities that have been reported by dealers to FINRA's Trade Reporting and Compliance Engine ("TRACE"), and the Municipal Securities Rulemaking Board ("MSRB"). The report does not necessarily reflect all transactions that were effected on dates noted. There is the possibility of errors or delays in the trade submission process. Prices for transactions vary with market conditions and can be affected by trade size and other factors. The information provided has been obtained from sources deemed to be reliable, however Tradeweb Direct does not guarantee the accuracy of the information contained in this report.

Fixed income securities are subject to increased loss of principal during periods of rising interest rates. Fixed-income investments are subject to various risks including changes in credit quality, market valuations, liquidity, prepayments, early redemption, corporate events, tax ramifications and other factors. Defaults on interest payments and/or principal may also occur. Projections, results and assumptions contained herein reflect past performance of the referenced securities and asset classes. Past performance is no guarantee of future results. The investment return and principal value of an investment will fluctuate such that an investment, if and when redeemed, may be worth more or less than its original cost.

This information is intended for general informational purposes only, and should not be used as the sole basis for any investment decisions. None of the information in the report constitutes an offer or solicitation to buy or sell any security or financial product, a recommendation concerning any security, financial product or asset class, or an offer to provide investment advice or any other service. Where appropriate, please consult with a qualified financial and tax professional.