

Market Transparency Report

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

June 2021

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 June 2021

	Median Yield (bps)	Daily Trade Volume	Buy/Sell Ratio
Agency	0	-2.4%	0.1
CD	1	0.8%	0.0
Corp	-12	4.6%	-0.1
Municipal	-3	-3.7%	0.0
Treasury	-5	6.3%	0.3

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

Yield Matrix

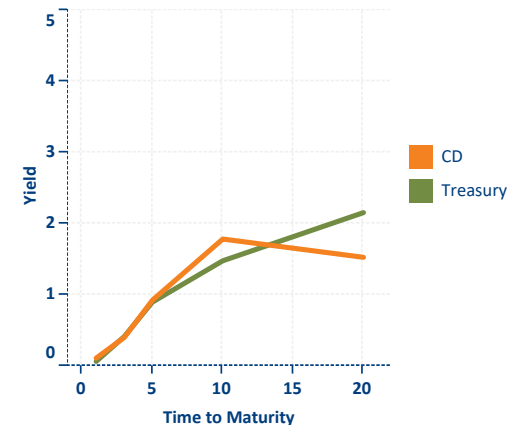
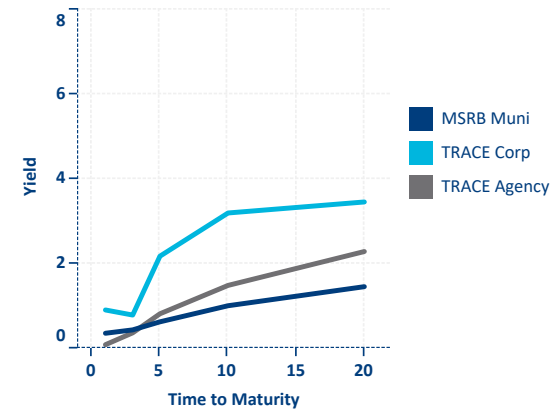
Average Yield, % for June 2021

Market	1	3	5	10	20	Median Maturity (Years)
MSRB Muni	0.4	0.4	0.6	1.0	1.5	9
TRACE Corp	0.9	0.8	2.2	3.2	3.5	4
TRACE Agency	0.1	0.4	0.8	1.5	2.3	5
CD	0.1	0.4	0.9	1.8	1.5	1
Treasury	0.1	0.4	0.9	1.5	2.2	1

Asset Class

Market	Category (Filtered)	Rating Key	1	3	5	10	20	Median Maturity (Years)
TRACE Corp	Financial	AA	0.1	0.3	1.8	2.0		1
		A	0.2	0.5	1.1	2.1	3.2	3
		BBB	0.5	0.9	1.5	2.4	3.4	4
		HY	1.4	1.5	4.4	5.9		7
	Non-Financial	AAA		0.2		1.6	2.6	18
		AA		0.4	1.4	1.7	2.7	9
		A	0.2	0.3	1.1	1.9		4
		BBB	0.4	1.1	1.7	3.0	3.5	6
		HY	1.1	2.7	6.3	4.9	4.8	6
MSRB Muni	GO	AAA	0.3	0.4	0.5	0.9	1.3	7
		AA	0.3	0.4	0.6	1.0	1.6	8
		A	0.4	0.5	0.7	1.1	1.4	6
		BBB	0.6	0.8	1.0	1.5	1.6	8
	Revenue	HY		1.7		1.8	1.0	20
		AAA	0.3	0.4	0.5	0.9	1.3	8
		AA	0.3	0.4	0.6	1.0	1.4	9
		A	0.4	0.5	0.7	1.0	1.2	11
		BBB	0.6	0.9	1.3	1.5	1.6	12
		HY	5.8	3.1	4.1	4.1	3.2	10

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.

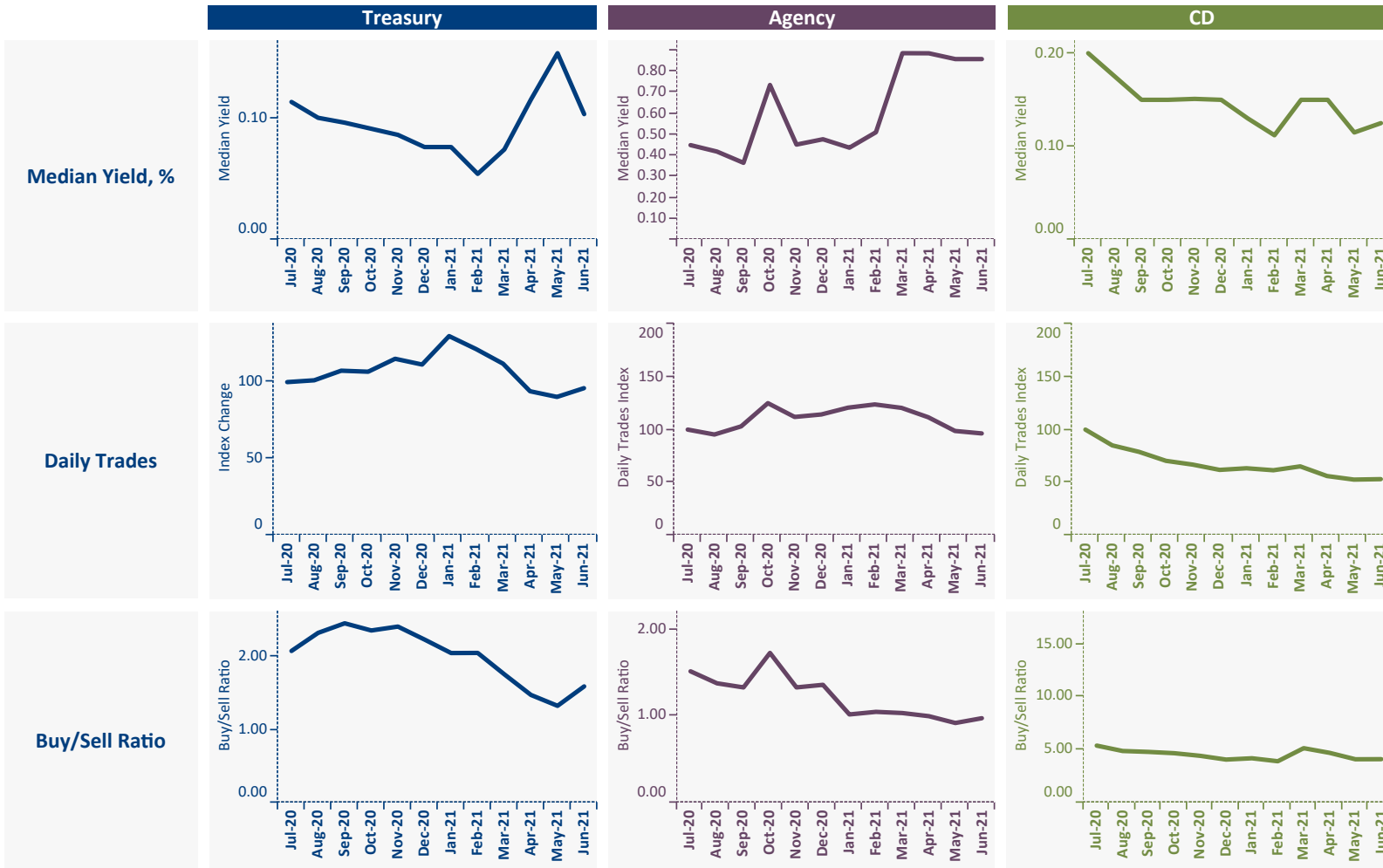
-The weights are based on transaction size.

-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

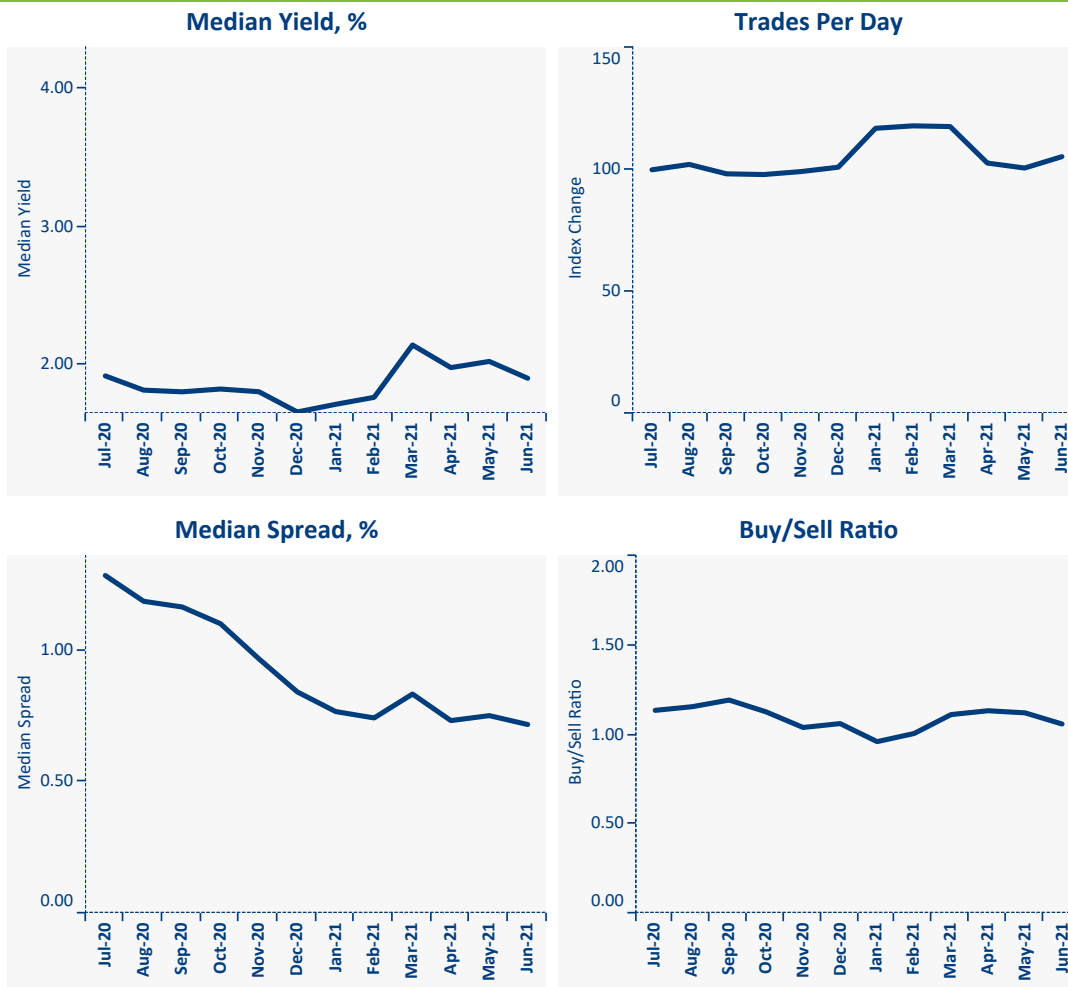
-Treasury and CD are based on transactions on the Tradeweb Direct Platform. Median yields are based on all customer buy transactions.

-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.

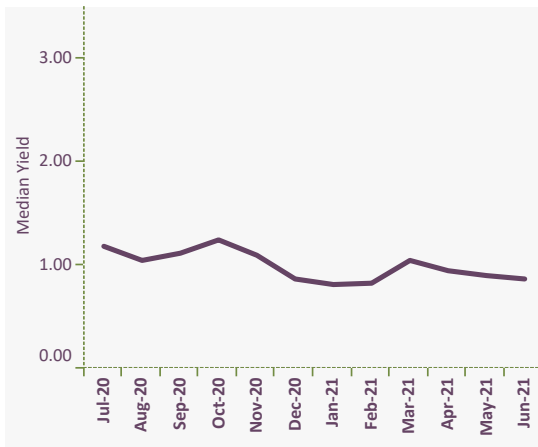
-Median yields and spreads are based on all odd-lot customer buy transactions...

©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.

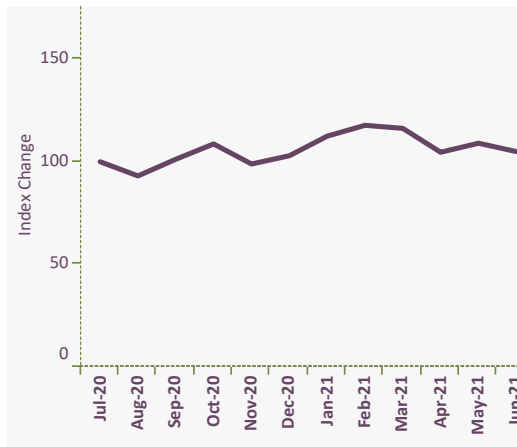


Municipal Bonds: Odd-Lot Customer Transaction Trend Summary

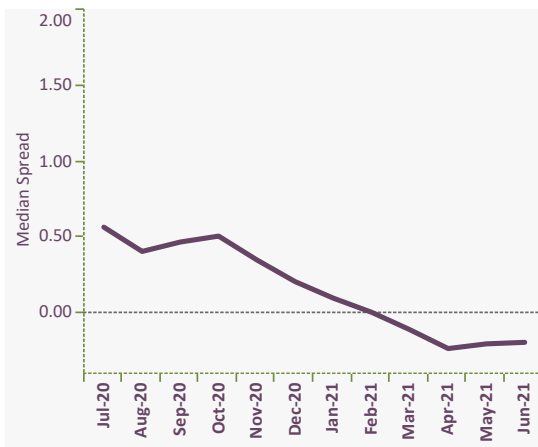
Median Yield, %



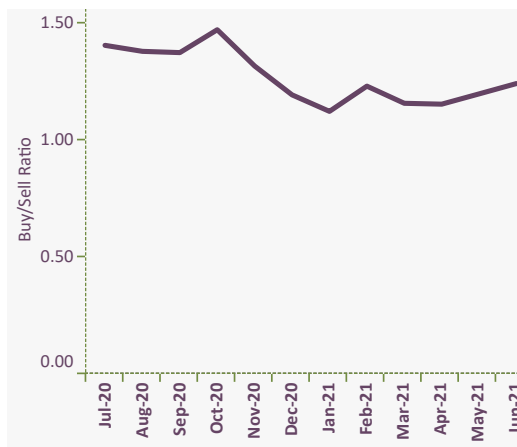
Trades Per Day



Median Spread, %



Buy/Sell Ratio



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

June 2021

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	BBB	749	3.3%	16,407	1.3	341	0.2	0.9	1.3	2.0	3.0
2	GS	GOLDMAN SACHS	A	960	2.4%	11,820	0.9	245	0.2	0.9	1.4	2.8	3.5
3	C	CITIGROUP	BBB	506	2.4%	11,702	1.0	253	0.2	0.9	1.4	2.5	3.0
4	BAC	BANK OF AMERICA	A	288	2.3%	11,349	0.9	224	0.2	0.9	1.3	2.4	3.3
5	MS	MORGAN STANLEY	A	1,115	1.7%	8,425	0.7	205	0.4	0.7	1.3	2.3	3.1
6	COF	CAPITAL ONE FINL CORP	BB	25	1.6%	8,068	0.2	75	0.2	0.8	1.5		
7	VZ	VERIZON	BBB	152	1.6%	7,941	1.4	154	0.1	0.7	1.2	2.2	3.0
8	WFC	WELLS FARGO	A	173	1.5%	7,217	0.9	155	0.2	0.8	1.4	1.9	3.3
9	T	AT&T	BBB	113	1.3%	6,315	0.7	146	0.3	0.6	1.5	2.3	3.4
10	ORCL	ORACLE CORP	BBB	37	1.3%	6,172	1.1	123	0.3	0.8	1.3	2.4	3.3
11	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	BBB	272	1.2%	5,956	1.0	133	0.4	0.8	1.5	3.0	3.2
12	GM	GENERAL MOTORS FINANCIAL COMPANY INC	BBB	94	1.2%	5,675	1.2	134	0.4	0.8	1.5	2.5	3.8
13	AAPL	APPLE INC	AA	53	1.1%	5,500	0.9	116	0.1	0.6	1.0	1.8	2.8
14	CMCS	COMCAST	A	63	1.0%	5,069	0.9	108	0.2	0.5	1.0	2.1	2.9
15	F	FORD	BB	214	1.0%	4,967	1.7	113	0.9	2.1	2.8	3.8	4.5
16	BA	BOEING CO	BBB	59	0.9%	4,527	1.9	116	0.4	1.1	1.8	2.7	3.6
17	CVS	CVS CAREMARK CORP	BBB	47	0.9%	4,426	0.9	94	0.3	0.8	1.2	2.2	3.1
18	BK	BANK NEW YORK INC MEDIUM TERM SR NTS BOO	A	37	0.8%	3,843	1.4	60	0.2	0.5	1.0	1.8	
19	BRK	BERKSHIRE HATHAWAY	AA	150	0.7%	3,635	0.7	95	0.2	0.5	1.0	2.1	3.1
20	AXP	AMERICAN EXPRESS	BBB	24	0.7%	3,268	0.4	56	0.2	0.5	1.1		2.9

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.

©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 Issuers with Highest Buy/Sell Ratio

June 2021

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	EIX	EDISON MISSION	BB	44	0.6%	3,101	2,647	454	5.8	70	0.6	0.6	2.8	2.3	3.6
2	PCG	PACIFIC GAS & ELEC CO	BBB	38	0.4%	1,921	1,592	329	4.8	43	1.7	1.2	2.2	3.5	4.4
3	ALLY	ALLY FINANCIAL	BB	43	0.4%	2,176	1,779	397	4.5	60	0.4	0.9	2.0	3.2	
4	PSEC	PROSPECT CAP CORP INTERNOTES BOOK ENTRY	BBB	144	0.4%	1,781	1,443	338	4.3	38	1.9	3.2	3.2	4.0	2.4
5	CNC	CENTENE CORP DEL	BBB	7	0.3%	1,290	1,038	252	4.1	20				2.8	
6	GT	GOODYEAR TIRE & RUBBER	B	9	0.3%	1,470	1,126	344	3.3	40		1.3	3.7	4.7	
7	TEVA	TEVA PHARMACEUTICAL FIN CO B V	BB	11	0.4%	1,804	1,339	465	2.9	44	2.4	2.9	4.0		
8	SCHW	SCHWAB CHARLES CORP NEW	BBB	32	0.6%	3,110	2,140	970	2.2	82	0.2	0.5	1.1	2.0	
9	SVC	Null	BB	13	0.2%	1,105	760	345	2.2	24	2.1	4.2	4.9	5.0	
10	TMUS	T-MOBILE USA INC	BB	31	0.4%	2,193	1,497	696	2.2	53	0.9	1.6	1.9	2.9	3.2
11	DAL	DELTA AIR LINES INC DEL	BB	14	0.3%	1,269	844	425	2.0	30	0.9	2.3	3.1	3.7	
12	MO	ALTRIA GROUP INC	BBB	24	0.4%	1,883	1,254	629	2.0	51	0.3	0.8	1.4	2.6	4.0
13	BA	BOEING CO	BBB	59	0.9%	4,527	2,957	1,570	1.9	116	0.4	1.1	1.8	2.7	3.6
14	F	FORD	BB	214	1.0%	4,967	3,150	1,817	1.7	113	0.9	2.1	2.8	3.8	4.5
15	LUV	SOUTHWEST AIRLS CO	BBB	11	0.2%	1,184	742	442	1.7	27	0.4	1.3	1.9	2.3	
16	TM	TOYOTA	A	65	0.5%	2,430	1,501	929	1.6	45	0.2	0.6	1.0	1.9	
17	BMX	BRISTOL MYERS SQUIBB CO	A	46	0.3%	1,511	926	585	1.6	42	0.2	0.5	1.0	1.8	2.8
18	PEMX	PETROLEOS MEXICANOS	BBB	45	0.6%	3,107	1,892	1,215	1.6	102	1.1	2.9	4.8	6.1	7.2
19	SLM	SLM CORP	B	124	0.3%	1,425	865	560	1.5	28	1.2	3.0	4.1	6.4	6.6
20	BTI	BAT INTERNATIONAL FINANCE PLC	BBB	31	0.4%	1,956	1,177	779	1.5	48	0.5	1.1	1.7	2.9	4.1

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

June 2021

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	COF	CAPITAL ONE FINL CORP	BB	25	1.6%	8,068	1,381	6,687	0.21	75	0.3	0.9	1.6		
2	PNC	PNC FDG CORP	A	31	0.4%	1,838	475	1,363	0.35	31	0.3	0.5	1.3	1.9	
3	AXP	AMERICAN EXPRESS	BBB	24	0.7%	3,268	974	2,294	0.42	56	0.3	0.6	1.1		3.0
4	HBC	HSBC	N/R	377	0.3%	1,330	464	866	0.54	35	0.3	1.1	1.9	3.2	3.1
5	BCS	BARCLAYS	N/R	567	0.3%	1,509	542	967	0.56	37	1.6	1.4	1.7	2.6	3.5
6	RDS	SHELL	AA	27	0.4%	1,957	728	1,229	0.59	41	0.3	0.8	1.1	1.9	3.0
7	BRK	BERKSHIRE HATHAWAY	AA	150	0.7%	3,635	1,450	2,185	0.66	95	0.4	0.5	1.1	2.1	3.1
8	CHTR	CCO HOLDINGS LLC	BBB	39	0.2%	1,116	451	665	0.68	38	0.5	0.8	1.3	2.7	3.8
9	MSFT	MICROSOFT CORP	AAA	35	0.6%	2,821	1,150	1,671	0.69	54	0.3	0.3	1.0		2.6
10	PEP	PEPSICO	A	37	0.4%	1,746	723	1,023	0.71	38	0.2	0.6	1.0	1.8	2.7
11	MS	MORGAN STANLEY	A	1,115	1.7%	8,425	3,534	4,891	0.72	205	0.5	0.8	1.4	2.5	3.0
12	T	AT&T	BBB	113	1.3%	6,315	2,643	3,672	0.72	146	0.4	0.7	1.6	2.3	3.5
13	BNS	BANK NOVA SCOTIA B C	A	133	0.3%	1,604	680	924	0.74	36	0.3	0.6	1.3	2.2	
14	BUD	ANHEUSER BUSCH INBEV WORLDWIDE INC	BBB	41	0.5%	2,248	966	1,282	0.75	54		0.8	1.2	2.1	3.5
15	MET	METLIFE	A	22	0.3%	1,598	685	913	0.75	33	0.4	0.6	0.9	2.0	3.0
16	HCA	HCA INC	BBB	26	0.2%	1,139	491	648	0.76	34		1.7	1.7	2.9	3.3
17	KMI	KINDER MORGAN ENERGY PARTNERS L P	BBB	59	0.3%	1,628	704	924	0.76	38	0.4	0.8	2.4	3.1	3.8
18	QCOM	QUALCOMM	A	13	0.2%	1,096	473	623	0.76	24	0.2	0.7	1.4	1.9	3.0
19	EXC	EXELON GENERATION CO LLC	BBB	78	0.3%	1,283	567	716	0.79	35	0.5	0.7	1.3	2.3	4.4
20	INTC	INTEL CORP	A	27	0.4%	1,801	793	1,008	0.79	38	0.2	0.6	1.0	1.9	3.0

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

June 2021

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	EIX	EDISON MISSION	Aug-50	BB	5.375	1,410	33	1,443	32			102.1	101.4
2	BK	BANK NEW YORK INC MEDIUM TERM SR NTS BOO	Dec-49	BBB	4.500	1,137	52	1,189	6	4.3	4.4	103.9	103.1
3	ALLY	ALLY FINANCIAL	Null	BB	4.700	1,080	38	1,118	33			102.8	101.1
4	F	FORD	Apr-23	BB	8.500	894	150	1,044	15	2.0	2.0	111.7	111.6
5	SCHW	SCHWAB CHARLES CORP NEW	Null	BBB	4.000	808	60	868	26			103.3	101.4
6	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	Aug-50	BBB	3.449	795	521	1,316	32	3.5	3.6	98.3	97.3
7	PAA	PLAINS ALL AMERN PIPELINE L P / PAA FIN	Dec-49	BB	6.125	766	26	792	12	6.9	7.0	88.5	87.7
8	CNC	CENTENE CORP DEL	Dec-27	BBB	4.250	724	88	812	10	2.0	2.0	105.3	105.3
9	VZ	VERIZON	Nov-24	BBB	3.500	699	514	1,213	11	0.7	0.7	108.8	108.7
10	JPM	JP MORGAN CHASE	Aug-50	BBB	3.650	691	45	736	23			101.4	100.0
11	JPM	JP MORGAN CHASE	Sep-24	BBB	3.875	654	158	812	10	1.0	0.9	109.1	109.5
12	TMUS	T-MOBILE USA INC	Sep-23	BB	7.875	651	41	692	5	1.6	1.7	113.6	113.5
13	VZ	VERIZON	Mar-28	BBB	2.100	629	83	712	11	1.8	1.8	101.9	101.8
14	PSEC	PROSPECT CAP CORP INTERNOTES BOOK ENTRY	Nov-26	BBB	3.364	628	36	664	15	3.3	3.4	100.3	99.6
15	BA	BOEING CO	Feb-26	BBB	2.196	615	161	776	16	1.8	1.8	100.7	100.7
16	GM	GENERAL MOTORS FINANCIAL COMPANY INC	Mar-70	BB	5.750	561	295	856	8	5.3	5.3	109.5	108.6
17	JPM	JP MORGAN CHASE	Nov-50	BBB	5.150	550	152	702	8	5.0	5.0	103.5	103.5
18	GEO	GEO GROUP INC	Apr-23	C	5.125	537	312	849	8	12.3	10.2	88.5	91.8
19	COF	CAPITAL ONE FINL CORP	Null	BB	3.950	495	29	524	17			102.5	101.1
20	C	CITIGROUP	Null	BB	6.250	495	124	619	15	5.3	5.4	117.3	116.3

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).

Corporate Bonds: Top 20 Most Sold Issues

June 2021

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	COF	CAPITAL ONE FINL CORP	Aug-50	BB	3.935	110	5,520	5,630	18	3.9	3.9	100.6	100.3
2	AXP	AMERICAN EXPRESS	Aug-70	BBB	3.584	76	1,062	1,138	9	3.6	3.6	100.5	100.3
3	FET	Forum Energy Technologies, Inc.	Aug-25	C	9.000	12	726	738	8	9.0	9.3	99.9	99.0
4	PNC	PNC FDG CORP	Aug-70	BBB	6.750	30	698	728	5	6.7	6.7	100.9	100.5
5	BAC	BANK OF AMERICA	Jan-25	BBB	4.000	75	591	666	7	1.1	1.1	110.3	110.3
6	CVS	CVS CAREMARK CORP	Mar-28	BBB	4.300	319	591	910	16	1.9	1.9	114.8	114.7
7	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	Aug-50	BBB	3.449	795	521	1,316	32	3.5	3.6	98.3	97.3
8	VZ	VERIZON	Nov-24	BBB	3.500	699	514	1,213	11	0.7	0.7	108.8	108.7
9	ORCL	ORACLE CORP	Apr-30	BBB	2.950	185	467	652	9	2.3	2.3	105.3	105.3
10	GEO	GEO GROUP INC	Apr-26	C	6.000	246	437	683	9	13.2	13.1	75.0	75.2
11	APC	ANADARKO PETE CORP	Aug-24	BB	2.900	179	403	582	6	2.5	2.9	101.2	100.1
12	TDOC	Null	May-25	N/R	1.375	12	391	403	4			287.5	289.1
13	CLF	CLIFFS NAT RES INC	Jan-25	N/R	1.500	7	384	391	3			267.0	301.0
14	JPM	JP MORGAN CHASE	Oct-26	A	2.950	407	381	788	9	1.3	1.4	108.0	107.7
15	CMCS	COMCAST	Oct-28	A	4.150	374	366	740	13	1.7	1.7	116.4	115.9
16	BA	BOEING CO	Mar-24	BBB	2.800	38	355	393	6	0.9	1.1	104.9	104.5
17	AAPL	APPLE INC	Feb-26	AA	3.250	265	338	603	6	0.9	1.0	110.1	109.9
18	WPG	Null	Aug-24	N/R	6.450	96	320	416	5	22.0	23.1	69.1	69.9
19	AAPL	APPLE INC	May-23	AA	2.400	202	312	514	11	0.3	0.3	104.0	103.9
20	GEO	GEO GROUP INC	Apr-23	C	5.125	537	312	849	8	12.3	10.2	88.5	91.8

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: $0.5 \leq TTM \leq 1.5$
 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.