

Market Transparency Report

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

May 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 May 2023

	Median Yield (bps)	Daily Trade Volume	Buy/Sell Ratio
Agency	52	-14.1%	-2.8
CD	20	11.5%	3.8
Corp	21	13.1%	0.4
Municipal	28	12.5%	0.1
Treasury	27	8.5%	-0.9

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



Yield Matrix

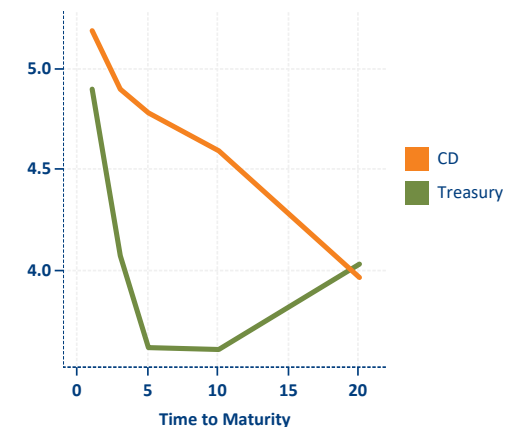
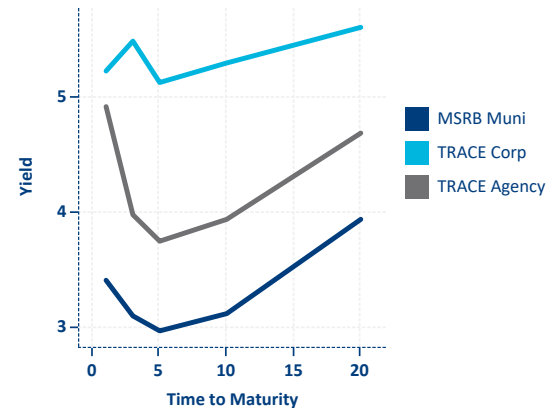
Average Yield, % for May 2023

Market	TTM					Median Maturity (Years)
	1	3	5	10	20	
MSRB Muni	3.4	3.1	3.0	3.1	3.9	9
TRACE Corp	5.2	5.5	5.1	5.3	5.6	3
TRACE Agency	4.9	4.0	3.8	3.9	4.7	1
CD	5.2	4.9	4.8	4.6	4.0	1
Treasury	4.9	4.1	3.6	3.6	4.0	0

Asset Class

Market	Category (Filtered)	Rating Key	1	3	5	10	20	Median Maturity (Years)	
TRACE Corp	Financial	AAA			3.9			5	
		AA	5.0	4.6	4.6	5.4		6	
		A	5.0	4.6	4.4	4.8	5.4	2	
		BBB	6.1	6.4	7.2	5.4	6.2	3	
		HY	6.8	7.2	10.2	9.9		4	
	Non-Financial	AAA	2.9	1.7			4.4	17	
		AA	4.7	3.8	4.4	4.1	4.8	7	
		A	4.2	4.2	4.3	4.5		5	
		BBB	5.3	5.0	4.9	5.1	6.7	1	
		HY		13.5	7.5	7.2	7.2	6	
MSRB Muni	GO	AAA	3.3	3.0	2.8	2.9	3.7	6	
		AA	3.4	3.0	2.9	3.1	3.9	8	
		A	3.5	3.3	3.2	3.4	4.0	7	
		BBB	3.9	3.8	3.8	4.1	4.5	7	
		HY	5.4	4.9	5.7	5.6	5.2	12	
	Non-Financial	AA				4.4		10	
		AAA	3.3	3.0	2.9	2.9	3.8	8	
		AA	3.4	3.1	2.9	3.0	3.9	10	
		A	3.5	3.3	3.2	3.4	4.1	13	
		BBB	4.9	4.5	4.1	4.4	4.8	13	
		HY	6.0	7.9	5.9	6.1	6.2	13	
		Revenue							

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.

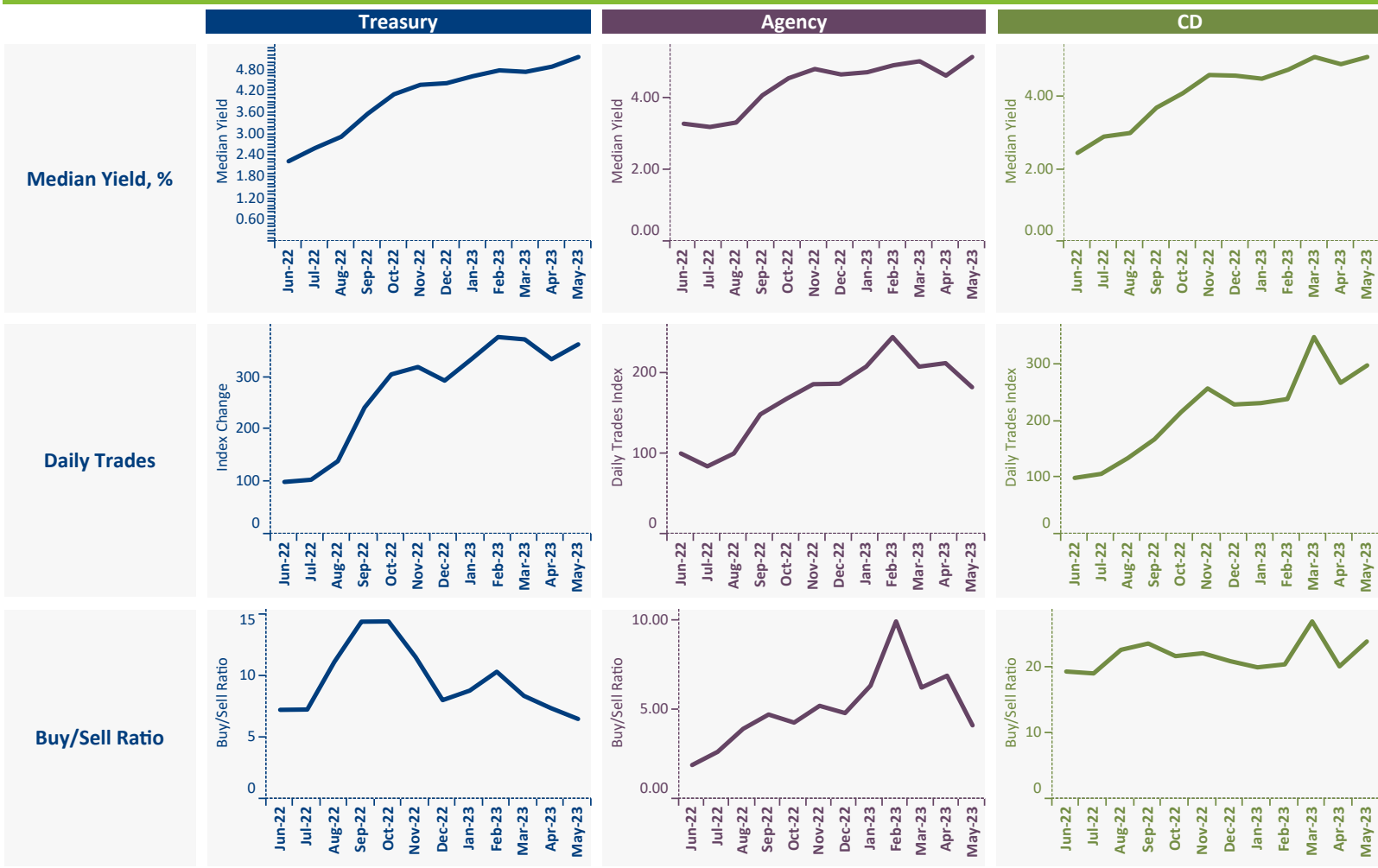
-The weights are based on transaction size.

-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

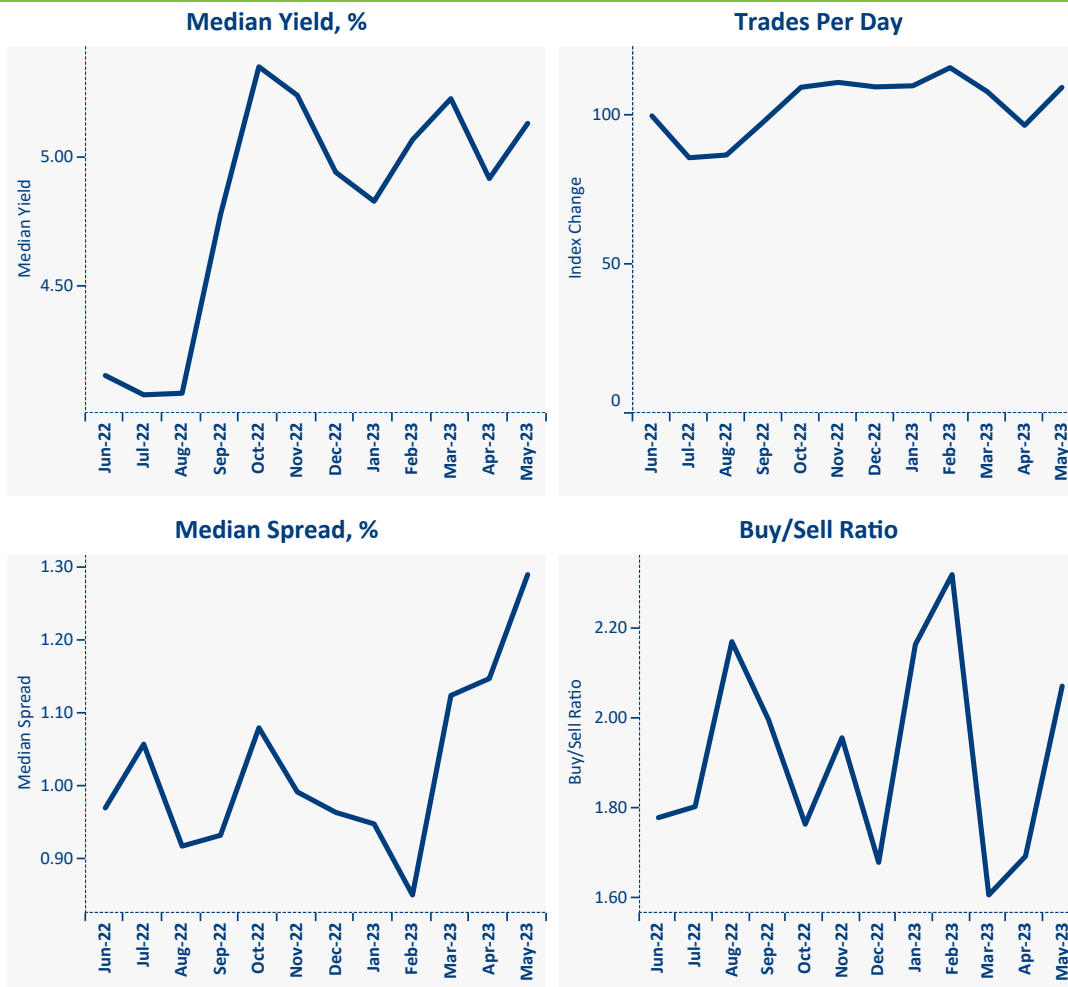
-Treasury and CD are based on transactions on the Tradeweb Direct Platform. Median yields are based on all customer buy transactions.

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

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Corporate Bonds: Odd-Lot Customer Transaction Trend Summary



Daily Trades: First month = 100

Source: TRACE and Tradeweb Direct

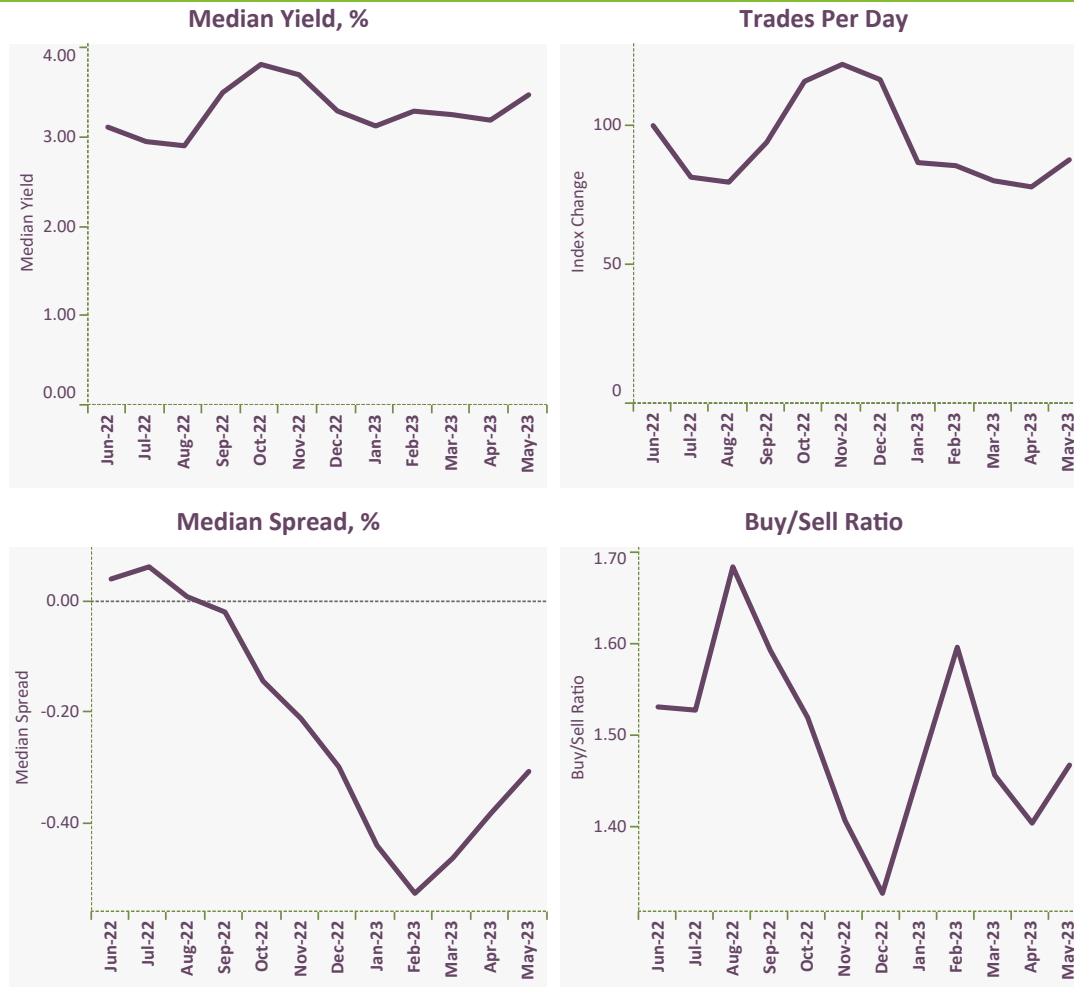
-Based on odd-lot customer transactions (<100M) reported in TRACE.

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

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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.

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Corporate Bonds: Top 20 Most Active Issuers

May 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	EDP	ENTERPRISE PRODS OPER LLC	BBB	34	5.0%	44,897	29.4	85	5.5	4.6	4.6	5.2	5.6
2	JPM	JP MORGAN CHASE	A	1,017	4.5%	40,694	3.0	463	5.0	4.6	4.7	5.3	5.5
3	GS	GOLDMAN SACHS	A	1,198	2.6%	23,332	1.7	361	5.3	5.0	5.2	5.2	5.5
4	C	CITIGROUP	BBB	813	2.3%	20,234	1.4	351	5.2	5.2	5.1	5.5	5.6
5	BAC	BANK OF AMERICA	A	451	2.2%	20,106	1.9	412	5.2	5.1	5.0	5.3	5.3
6	T	AT&T	BBB	96	1.9%	17,299	3.9	155	5.4	5.1	4.8	5.2	5.6
7	MS	MORGAN STANLEY	A	954	1.8%	16,324	1.3	271	5.2	5.0	5.3	5.0	5.4
8	WFC	WELLS FARGO	A	163	1.7%	15,366	1.3	233	5.2	5.0	5.0	5.5	5.9
9	GM	GENERAL MOTORS FINANCIAL COMPANY INC	BBB	94	1.7%	14,847	1.9	300	5.5	5.3	5.4	6.0	6.7
10	AAPL	APPLE INC	AA	55	1.6%	14,444	3.3	225	4.6	4.1	4.0	4.2	4.7
11	VZ	VERIZON	BBB	146	1.2%	10,730	1.5	157	5.0	4.5	4.7	5.0	5.4
12	ORCL	ORACLE CORP	BBB	40	1.2%	10,569	1.1	155	5.0	4.8	4.8	5.3	5.9
13	BMJ	BRISTOL MYERS SQUIBB CO	A	38	1.1%	10,174	8.5	66	4.8	4.1	4.1	4.4	5.0
14	PFE	PFIZER	A	53	1.0%	9,025	6.4	100	4.7	4.6	4.3	4.8	5.0
15	ABBV	ABBVIE INC	BBB	22	1.0%	8,743	4.4	96	5.0	4.7	4.4	5.1	5.3
16	CMCS	COMCAST	A	65	1.0%	8,598	1.4	127	4.8	4.4	4.5	4.8	5.4
17	USB	U S BANCORP MEDIUM TERM NTS- BOOK ENTRY	A	28	0.9%	8,274	2.4	118	5.7	5.4	5.1		
18	TFC	Null	A	39	0.9%	8,261	2.6	114	5.8	5.8	5.5		
19	CVS	CVS CAREMARK CORP	BBB	48	0.9%	8,241	1.2	130	5.0	4.7	4.7	5.1	5.7
20	DUK	DUKE ENERGY	BBB	125	0.8%	7,522	2.4	109	5.2	4.8	4.6	5.1	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

May 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	EDP	ENTERPRISE PRODS OPER LLC	BBB	34	5.0%	44,897	43,421	1,476	29.4	85	5.5	4.6	4.6	5.2	5.6
2	HALO	Null	N/R	1	0.3%	2,422	2,334	88	26.5	6		5.3			
3	BMRN	BIOMARIN PHARMACEUTICAL INC	N/R	2	0.3%	2,488	2,357	131	18.0	9	0.5	0.2			
4	DXCM	Null	N/R	2	0.3%	2,495	2,356	139	17.0	10					
5	BMJ	BRISTOL MYERS SQUIBB CO	A	38	1.1%	10,174	9,098	1,076	8.5	66	4.8	4.1	4.1	4.4	5.0
6	SWK	STANLEY BLACK & DECKER INC	A	11	0.2%	2,200	1,946	254	7.7	44		4.7	5.2	5.2	5.9
7	PFE	PFIZER	A	53	1.0%	9,025	7,805	1,220	6.4	100	4.7	4.6	4.3	4.8	5.0
8	FB	Null	AA	10	0.4%	4,012	3,413	599	5.7	85			4.3	4.9	
9	HON	HONEYWELL INTL INC	A	19	0.2%	2,011	1,699	312	5.5	42	4.4	4.2	4.4	4.6	5.0
10	ABBV	ABBVIE INC	BBB	22	1.0%	8,743	7,126	1,617	4.4	96	5.0	4.7	4.4	5.1	5.3
11	NVDA	NVIDIA CORPORATION	A	9	0.2%	2,036	1,630	406	4.0	25	4.6	4.0	4.1	4.4	4.9
12	PM	PHILIP MORRIS INTL INC	A	29	0.5%	4,255	3,385	870	3.9	90	5.0	4.7	4.7	5.4	5.7
13	T	AT&T	BBB	96	1.9%	17,299	13,753	3,546	3.9	155	5.4	5.1	4.8	5.2	5.6
14	CMA	COMERICA BK DALLAS TEX	BBB	8	0.4%	3,549	2,814	735	3.8	47	10.8	11.3	8.2		
15	DWDP	Null	BBB	9	0.2%	2,194	1,711	483	3.5	23		5.0	4.6	5.0	5.4
16	TRP	TRANSCANADA PIPELINES LTD	BBB	31	0.3%	2,372	1,842	530	3.5	42	5.4	5.2	5.1	5.3	5.8
17	AAPL	APPLE INC	AA	55	1.6%	14,444	11,112	3,332	3.3	225	4.6	4.1	4.0	4.2	4.7
18	INTC	INTEL CORP	A	38	0.7%	6,457	4,926	1,531	3.2	131	4.8	4.4	4.5	5.0	5.5
19	BX	APRIA HEALTHCARE GROUP INC	BBB	32	0.3%	2,628	1,989	639	3.1	50	6.8	7.0	6.6	5.8	4.4
20	LOW	LOWES COS INC	BBB	42	0.7%	6,421	4,826	1,595	3.0	90	4.8	4.5	4.7	5.1	5.5

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

May 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	IEP	ICAHN ENTERPRISES	BB	5	0.2%	2,129	668	1,461	0.46	48	9.9	10.7	9.6		
2	UNP	UNION PAC CORP	A	51	0.2%	2,154	905	1,249	0.72	39	5.2	4.4	4.3	4.6	5.1
3	RDS	SHELL	AA	24	0.3%	2,698	1,276	1,422	0.90	41	5.0	4.3	4.2	4.8	5.1
4	FISV	FISERV INC	BBB	11	0.3%	3,046	1,539	1,507	1.02	35	5.5	4.9	4.8	5.1	
5	HMC	AMERICAN HONDA FIN CORP MED TERM NTS BOO	A	32	0.2%	2,059	1,056	1,003	1.05	39	5.1	4.5	4.5	4.6	
6	ORCL	ORACLE CORP	BBB	40	1.2%	10,569	5,632	4,937	1.14	155	5.2	4.9	4.8	5.3	6.0
7	RY	ROYAL BANK OF CANADA	A	267	0.6%	4,989	2,713	2,276	1.19	96	5.3	4.9	4.9	5.1	
8	CVS	CVS CAREMARK CORP	BBB	48	0.9%	8,241	4,509	3,732	1.21	130	5.2	4.9	4.7	5.1	5.7
9	AMT	AMERICAN TOWER CORP NEW	BBB	33	0.5%	4,141	2,343	1,798	1.30	62	5.6	4.9	5.1	5.3	
10	MS	MORGAN STANLEY	A	954	1.8%	16,324	9,329	6,995	1.33	271	5.4	5.0	5.7	5.2	5.4
11	WFC	WELLS FARGO	A	163	1.7%	15,366	8,775	6,591	1.33	233	5.4	5.2	5.0	5.7	5.9
12	CMCS	COMCAST	A	65	1.0%	8,598	4,964	3,634	1.37	127	5.2	4.5	4.5	4.8	5.6
13	C	CITIGROUP	BBB	813	2.3%	20,234	11,809	8,425	1.40	351	5.5	5.3	5.4	5.7	5.7
14	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	BBB	218	0.5%	4,585	2,689	1,896	1.42	75	8.0	5.4	5.3	5.4	5.5
15	BUD	ANHEUSER BUSCH INBEV WORLDWIDE INC	A	40	0.5%	4,668	2,762	1,906	1.45	67		4.5	4.3	4.4	5.2
16	BK	BANK NEW YORK INC MEDIUM TERM SR NTS BOO	A	51	0.5%	4,479	2,670	1,809	1.48	67	5.5	4.8	4.7	4.9	
17	ETP	ENERGY TRANSFER PARTNERS L P	BBB	29	0.3%	2,387	1,434	953	1.50	45	5.8	5.3	5.3	5.9	6.5
18	DE	DEERE JOHN CAP CORP MEDIUM TERM NTS-BOOK	A	61	0.5%	4,289	2,580	1,709	1.51	84	5.1	4.4	4.3	4.5	4.7
19	KEY	KEYCORP MEDIUM TERM SR NTS BOOK ENTRY	BBB	17	0.3%	2,603	1,571	1,032	1.52	39		8.1	8.2	7.0	
20	VZ	VERIZON	BBB	146	1.2%	10,730	6,470	4,260	1.52	157	5.1	4.6	4.7	5.1	5.6

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.

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Corporate Bonds: Top 20 Most Bought Issues

May 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	EDP	ENTERPRISE PRODS OPER LLC	Feb-53	BBB	3.300	42,008	162	42,170	46	5.3	5.5	70.4	68.3
2	JPM	JP MORGAN CHASE	Jan-33	A	2.963	15,887	88	15,975	33			84.6	84.4
3	T	AT&T	Mar-29	BBB	4.350	8,654	277	8,931	24	4.8	4.8	97.8	97.5
4	BMY	BRISTOL MYERS SQUIBB CO	Jul-24	A	2.900	7,896	354	8,250	31	4.8	4.7	97.9	97.9
5	ABBV	ABBVIE INC	Nov-28	BBB	4.250	4,748	196	4,944	22	4.4	4.5	99.3	98.6
6	PFE	PFIZER	May-33	A	4.750	2,646	28	2,674	14	4.8	4.8	99.8	99.5
7	UNKNO..	VTR FIN B V	May-33	A	4.750	58	2	60	1			100.5	100.1
8	AAPL	APPLE INC	Aug-32	AA	3.350	2,444	60	2,504	11	4.2	4.2	93.6	93.7
9	DXCM	Null	Nov-25	N/R	0.250	2,356	137	2,493	9		0.1	105.4	104.1
10	BMRN	BIOMARIN PHARMACEUTICAL INC	May-27	N/R	1.250	2,344	97	2,441	8	0.2	0.6	104.1	102.5
11	HALO	Null	Mar-27	N/R	0.250	2,334	88	2,422	6	5.3	5.7	82.6	81.7
12	CMA	COMERICA BK DALLAS TEX	Jul-23	BBB	3.700	2,144	428	2,572	31	21.3	21.6	96.5	96.3
13	TFC	Null	Mar-27	A	1.267	1,782	95	1,877	7			88.6	88.4
14	JPM	JP MORGAN CHASE	Sep-24	BBB	3.875	1,740	289	2,029	21	5.0	5.2	98.5	98.3
15	PFE	PFIZER	May-26	A	4.450	1,139	19	1,158	8	4.6	4.7	99.8	99.3
16	UNKNO..	VTR FIN B V	May-26	A	4.450	579	2	581	4			100.0	100.0
17	CVS	CVS CAREMARK CORP	Mar-28	BBB	4.300	1,572	1,064	2,636	22	4.7	4.8	98.3	98.0
18	USB	U S BANCORP MEDIUM TERM NTS- BOOK ENTRY	Sep-24	A	3.600	1,459	561	2,020	17	5.8	6.1	97.3	96.9
19	HPQ	HEWLETT PACKARD	Oct-25	BBB	4.900	1,387	493	1,880	14	5.1	5.2	99.6	99.4
20	PFE	PFIZER	May-30	A	4.650	1,320	24	1,344	9	4.7	4.8	99.5	99.4

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

May 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	ORCL	ORACLE CORP	Nov-32	BBB	6.250	279	1,597	1,876	13	5.3	5.3	106.6	106.8
2	MS	MORGAN STANLEY	Apr-24	A	3.875	448	1,319	1,767	25	5.2	5.4	98.7	98.6
3	GM	GENERAL MOTORS FINANCIAL COMPANY INC	Jan-24	BBB	5.100	117	1,292	1,409	12	5.1	5.6	100.0	99.7
4	WFC	WELLS FARGO	Jul-27	BBB	4.300	1,054	1,181	2,235	21	5.0	5.0	97.4	97.5
5	CVS	CVS CAREMARK CORP	Mar-28	BBB	4.300	1,572	1,064	2,636	22	4.7	4.8	98.3	98.0
6	CVS	CVS CAREMARK CORP	Aug-26	BBB	3.000	127	887	1,014	20	4.6	4.9	95.1	94.4
7	AMT	AMERICAN TOWER CORP NEW	Mar-27	BBB	3.650	47	862	909	11	4.9	4.9	95.5	95.7
8	GM	GENERAL MOTORS FINANCIAL COMPANY INC	Jun-26	BBB	1.500	93	840	933	18	5.3	5.4	89.3	88.9
9	CMCS	COMCAST	Oct-28	A	4.150	1,191	838	2,029	18	4.5	4.5	98.4	98.1
10	RY	ROYAL BANK OF CANADA	Oct-23	A	0.500	109	826	935	8	5.2	5.7	97.9	98.0
11	VZ	VERIZON	Mar-27	BBB	4.125	601	702	1,303	15	4.5	4.6	98.7	98.5
12	GS	GOLDMAN SACHS	Mar-30	A	3.800	608	602	1,210	11	5.1	5.1	92.8	92.5
13	FISV	FISERV INC	Oct-23	BBB	3.800	36	573	609	5	5.4	6.1	99.4	99.3
14	TD	TORONTO DOMINION BK SR MEDIUM TERM BK NT	Sep-23	A	0.450	109	563	672	6	5.2	5.8	98.6	98.6
15	USB	U S BANCORP MEDIUM TERM NTS- BOOK ENTRY	Sep-24	A	3.600	1,459	561	2,020	17	5.8	6.1	97.3	96.9
16	JPM	JP MORGAN CHASE	Oct-26	A	2.950	328	516	844	9	4.6	5.0	94.8	93.8
17	C	CITIGROUP	Jul-28	BBB	3.668	216	505	721	5			94.4	94.1
18	UTX	UNITED TECHNOLOGIES CORP	Aug-25	BBB	3.950	1,264	501	1,765	11	4.6	4.7	98.7	98.5
19	HPQ	HEWLETT PACKARD	Oct-25	BBB	4.900	1,387	493	1,880	14	5.1	5.2	99.6	99.4
20	IEP	ICAHN ENTERPRISES	Dec-25	BB	6.375	241	493	734	17	9.9	10.7	92.3	90.5

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).

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.

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