

Market Transparency Report

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

April 2020

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 April 2020

	Median Yield (bps)	Daily Trade Volume	Buy/Sell Ratio
Agency	-24	-30.4%	0.3
CD	-18	-9.7%	4.2
Corp	-81	1.1%	0.2
Municipal	-22	-15.5%	0.2
Treasury	-25	-46.6%	0.3

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

Yield Matrix

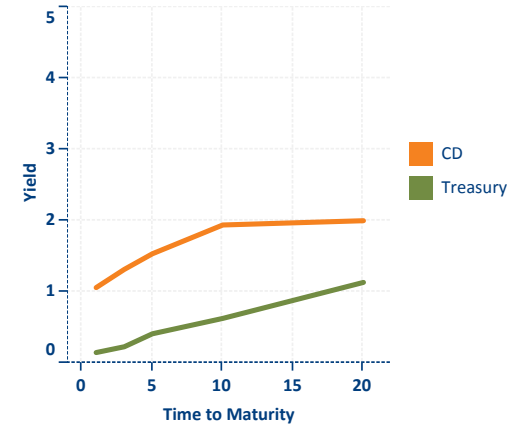
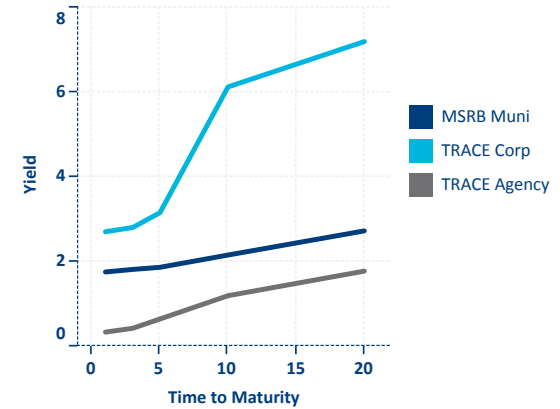
Average Yield, % for April 2020

Market	TTM					Median Maturity (Years)
	1	3	5	10	20	
MSRB Muni	1.8	1.8	1.9	2.2	2.7	8
TRACE Corp	2.7	2.8	3.2	6.1	7.2	3
TRACE Agency	0.3	0.4	0.7	1.2	1.8	3
CD	1.1	1.3	1.5	1.9	2.0	1
Treasury	0.1	0.2	0.4	0.6	1.1	0

Asset Class

Market	Category (Filtered)	Rating Key	TTM					Median Maturity (Years)
			1	3	5	10	20	
TRACE Corp	Financial	AA	1.2	1.6	1.6			1
		A	1.4	1.6	1.8	2.6	3.5	2
		BBB	4.2	3.1	3.2	4.1	4.7	3
		HY	6.3	4.6	9.6	9.9	6.6	2
		AAA	0.6	0.6		1.3	2.4	4
	Non-Financial	AA	1.0	1.4	1.9	2.2	2.5	1
		A	2.5	1.4	1.9	2.4	3.3	4
		BBB	3.1	6.9	3.7	7.1	4.9	4
		HY	8.3	18.7	8.9	10.8	17.6	10
MSRB Muni	GO	AAA	1.4	1.4	1.5	1.7	2.1	6
		AA	1.5	1.6	1.6	1.9	2.4	7
		A	1.8	2.0	2.0	2.3	2.6	5
		BBB	3.5	4.0	4.5	4.4	4.7	7
		HY	5.4	4.4	4.0	4.2	5.5	10
	Revenue	AAA	1.5	1.5	1.6	1.9	2.3	7
		AA	1.7	1.7	1.7	2.0	2.4	8
		A	2.2	2.4	2.5	2.7	2.9	11
		BBB	3.5	3.5	3.7	4.0	4.0	13
		HY	6.7	6.0	6.3	5.7	5.4	11

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.

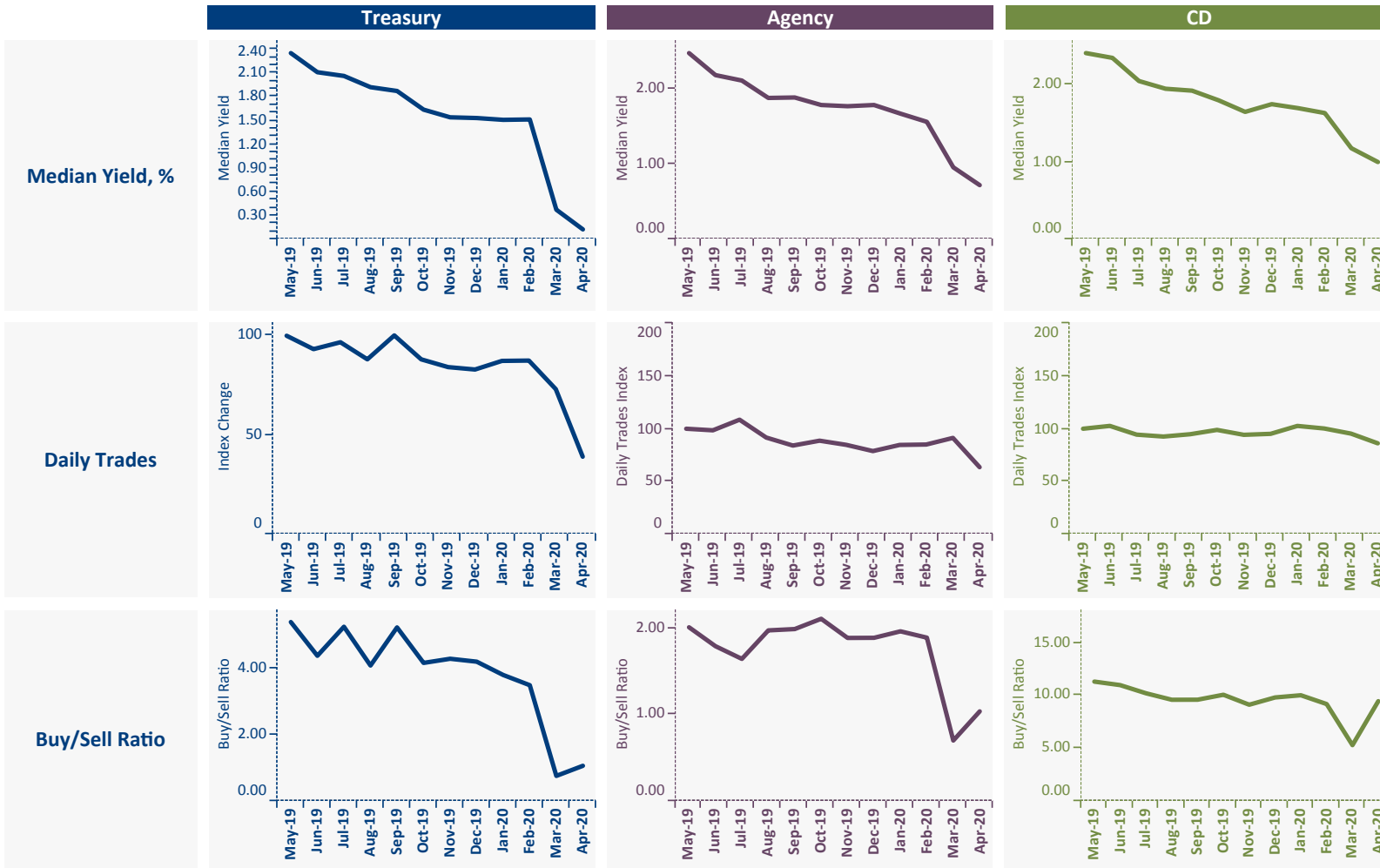
-The weights are based on transaction size.

-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

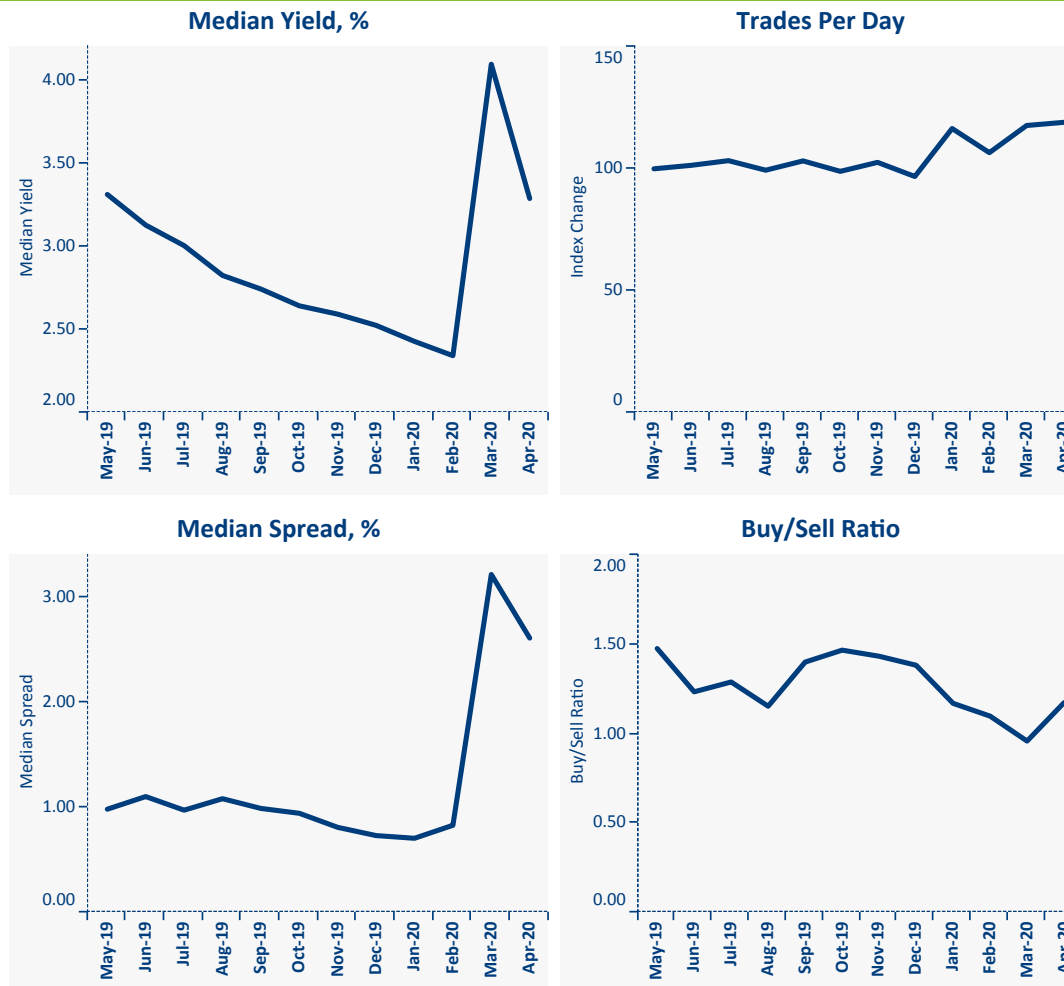
-Treasury and CD are based on transactions on the Tradeweb Direct Platform. Median yields are based on all customer buy transactions.

-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

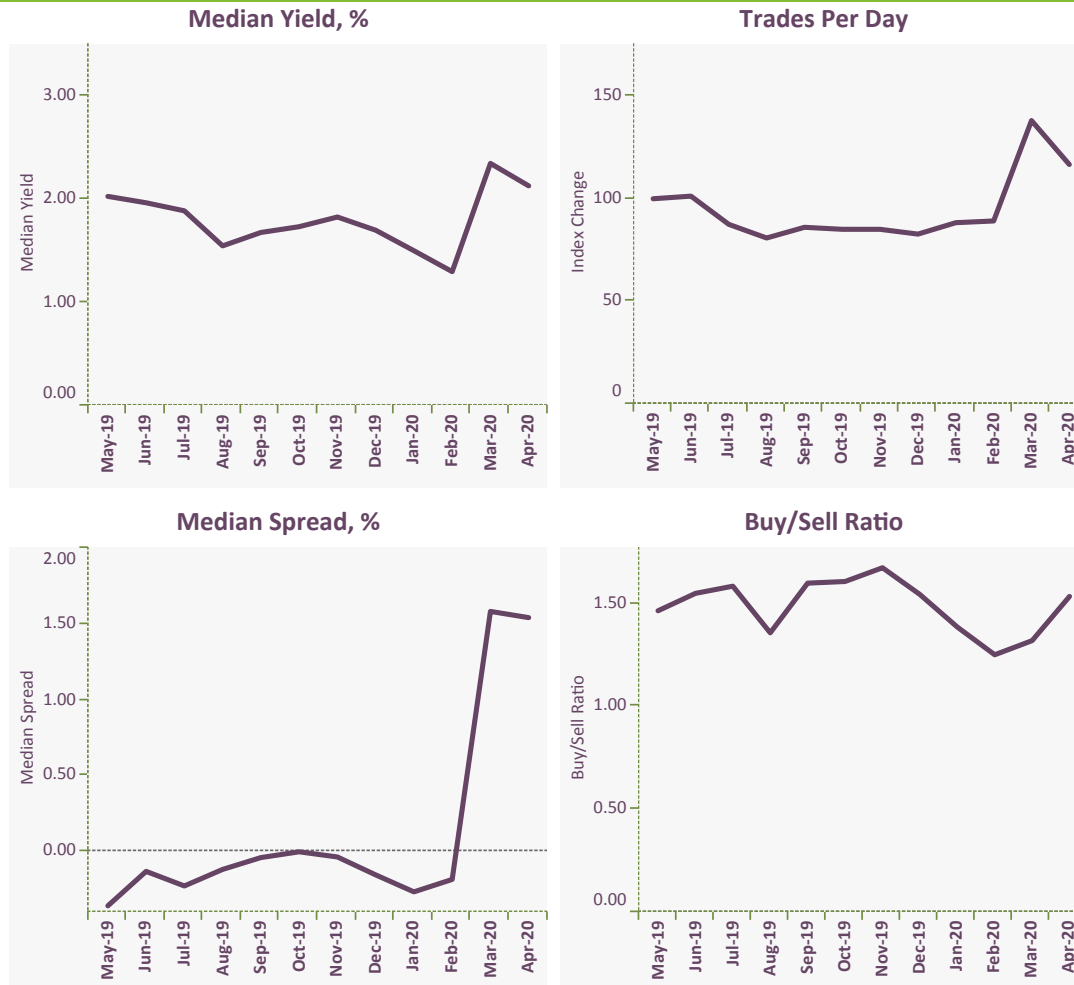
-Based on odd-lot customer transactions (<100M) reported in TRACE.

-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

April 2020

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	493	2.9%	16,608	1.1	350	1.3	1.5	1.8	2.4	3.0
2	GS	GOLDMAN SACHS	BBB	790	2.4%	14,019	1.1	283	1.5	1.9	3.0	3.2	4.2
3	C	CITIGROUP	BBB	386	2.3%	13,079	1.3	263	1.4	2.2	2.6	3.3	3.1
4	BNKQ	Null	A	356	2.0%	11,539	1.1	238	1.3	1.6	2.2	2.6	3.8
5	F	FORD	BB	265	1.9%	11,161	2.3	195	7.5	8.8	9.5	9.2	9.1
6	WFC	WELLS FARGO	A	223	1.8%	10,542	1.4	226	1.4	2.0	2.0	2.7	3.6
7	GM	GENERAL MOTORS FINANCIAL COMPANY INC	BBB	110	1.8%	10,337	2.1	187	4.5	5.0	5.5	5.9	6.9
8	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	BBB	307	1.6%	9,167	1.5	169	2.9	3.3	4.7	4.0	4.6
9	T	AT&T	BBB	107	1.4%	7,925	0.8	175	1.3	1.6	2.0	3.1	3.7
10	MS	MORGAN STANLEY	BBB	623	1.3%	7,351	0.8	169	1.5	1.9	2.0	3.0	3.0
11	AAPL	APPLE INC	AA	46	1.1%	6,390	0.7	144	0.7	0.8	1.0	1.5	2.6
12	VZ	VERIZON	BBB	121	0.9%	5,457	0.7	119	1.1	1.0	1.2	2.2	2.8
13	BRK	BERKSHIRE HATHAWAY	A	153	0.9%	5,199	1.1	125	1.0	1.0	1.4	2.9	5.0
14	CVS	CVS CAREMARK CORP	BBB	48	0.9%	5,105	1.0	113	1.6	1.4	1.8	2.4	3.6
15	BA	BOEING CO	BBB	45	0.8%	4,824	4.0	91	3.4	3.9	4.5	4.1	5.7
16	ORCL	ORACLE CORP	A	32	0.8%	4,752	1.1	97	0.9	1.0	1.4	1.9	2.8
17	AXP	AMERICAN EXPRESS	BBB	33	0.8%	4,746	2.0	99	1.4	1.5	1.7		3.8
18	COF	CAPITAL ONE FINL CORP	BBB	28	0.8%	4,481	1.8	88	1.9	2.8	3.4	3.6	
19	CMCS	COMCAST	A	64	0.8%	4,355	0.9	101		1.1	1.5	1.9	2.6
20	MSFT	MICROSOFT CORP	AAA	34	0.8%	4,341	0.6	89	0.5	0.6	0.9		2.3

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

April 2020

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	LUV	SOUTHWEST AIRLS CO	BBB	10	0.3%	1,693	1,488	205	7.3	32	3.4	3.6		4.6	
2	HMC	AMERICAN HONDA FIN CORP MED TERM NTS BOO	A	31	0.5%	2,767	2,297	470	4.9	58	2.0	2.3	2.3	2.9	
3	STZ	CONSTELLATION BRANDS INC	BBB	20	0.3%	1,980	1,628	352	4.6	27	1.9	2.1	2.5	4.4	
4	BA	BOEING CO	BBB	45	0.8%	4,824	3,859	965	4.0	91	3.4	3.9	4.5	4.1	5.7
5	CCL	CARNIVAL CORP	BBB	5	0.3%	1,812	1,434	378	3.8	26	9.8	8.9		9.9	
6	DAL	DELTA AIR LINES INC DEL	BB	17	0.4%	2,386	1,886	500	3.8	35	6.8	7.1	7.8	7.7	
7	BDX	BECTON DICKINSON & CO	BBB	15	0.3%	1,706	1,340	366	3.7	23	2.3	3.0	2.1		5.1
8	MAR	MARRIOTT INTL INC NEW	BBB	24	0.6%	3,179	2,454	725	3.4	53	4.1	4.7	4.9	5.9	
9	EXPE	EXPEDIA INC DEL	BBB	7	0.3%	1,620	1,229	391	3.1	29			5.4	5.8	
10	DFS	DISCOVER BK NEW CASTLE DEL	BB	75	0.3%	1,455	1,100	355	3.1	29	2.6	3.6	3.5	4.7	
11	SYX	SYSCO CORP	BBB	17	0.3%	1,453	1,087	366	3.0	32	2.3	2.6	3.5	3.9	4.7
12	DWDP	Null	BBB	13	0.4%	2,421	1,804	617	2.9	33	1.7	2.6	2.5	3.0	3.7
13	JWN	NORDSTROM INC	BBB	7	0.4%	2,371	1,752	619	2.8	26	4.7			8.0	7.5
14	MRO	MARATHON OIL CORP	BBB	24	0.3%	1,738	1,273	465	2.7	30	4.3	5.6	6.7	8.9	8.8
15	NFLX	NETFLIX INC	BB	11	0.4%	2,231	1,597	634	2.5	28	2.5	3.2	3.5	5.1	
16	CHK	CHESAPEAKE ENERGY	C	13	0.3%	1,603	1,133	470	2.4	3	739.9	171.3	128.6		
17	FDX	FEDEX CORP	BBB	26	0.3%	1,888	1,330	558	2.4	36		2.2	2.6	3.1	4.0
18	F	FORD	BB	265	1.9%	11,161	7,803	3,358	2.3	195	7.5	8.8	9.5	9.2	9.1
19	SCHW	SCHWAB CHARLES CORP NEW	BBB	19	0.4%	2,101	1,464	637	2.3	55	1.8	1.5	1.7	2.7	
20	VIA	VIACOM INC NEW	BBB	37	0.4%	2,295	1,587	708	2.2	41	2.7	2.9	3.1	3.8	4.9

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 2020

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	GPS	GAP	BB	1	0.3%	1,653	222	1,431	0.16	30	3.1				
2	KO	COCA COLA CO	A	35	0.6%	3,536	712	2,824	0.25	44	1.2	0.9	1.0	1.7	2.4
3	FTR	FRONTIER COMMUNICATIONS CORP	D	27	0.4%	2,119	443	1,676	0.26	21	188.7	83.7	50.4	9.4	32.3
4	PG	PROCTER & GAMBLE CO	AA	22	0.2%	1,411	313	1,098	0.29	25	1.5	0.4	1.1	1.6	2.2
5	M	MACYS RETAIL HLDGS INC	BB	21	0.4%	2,533	743	1,790	0.42	35	15.4	16.7	15.3	14.7	10.1
6	CTL	CENTURYLINK	B	28	0.4%	2,109	667	1,442	0.46	43	4.6	5.0	5.6	7.7	7.6
7	AIG	AIG	BBB	26	0.3%	1,933	637	1,296	0.49	37	2.3	2.9	2.2	3.0	3.8
8	ETP	ENERGY TRANSFER PARTNERS L P	BBB	40	0.3%	1,990	663	1,327	0.50	36	5.9	5.0	5.5	5.5	6.6
9	MSFT	MICROSOFT CORP	AAA	34	0.8%	4,341	1,532	2,809	0.55	89	0.4	0.7	1.0		2.4
10	AMZN	AMAZON COM INC	AA	14	0.3%	1,776	693	1,083	0.64	42		0.7	1.1		2.3
11	PEP	PEPSICO	A	41	0.4%	2,297	893	1,404	0.64	51	1.2	0.6	1.1	1.7	2.7
12	APC	ANADARKO PETE CORP	BB	72	0.6%	3,679	1,486	2,193	0.68	56	14.7	15.6	13.3	13.1	10.2
13	CSCO	CISCO	AA	13	0.3%	1,451	597	854	0.70	23	1.0	0.8	1.2		2.6
14	QCOM	QUALCOMM	A	11	0.3%	1,585	656	929	0.71	40		1.1	1.4		2.5
15	VZ	VERIZON	BBB	121	0.9%	5,457	2,269	3,188	0.71	119	1.5	1.1	1.3	2.2	2.8
16	AAPL	APPLE INC	AA	46	1.1%	6,390	2,712	3,678	0.74	144	1.0	0.9	1.2	1.5	2.6
17	T	AT&T	BBB	107	1.4%	7,925	3,418	4,507	0.76	175	1.8	1.8	2.2	2.8	3.7
18	EDP	ENTERPRISE PRODS OPER LLC	BBB	36	0.2%	1,421	624	797	0.78	29	3.2	2.5	2.4	3.4	5.1
19	MS	MORGAN STANLEY	BBB	623	1.3%	7,351	3,220	4,131	0.78	169	1.9	2.1	2.2	3.1	3.3
20	HBC	HSBC	A	349	0.4%	2,467	1,103	1,364	0.81	70	2.6	2.8	3.0	4.3	3.5

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

April 2020

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	DWDP	Null	Nov-23	BBB	4.205	1,306	283	1,589	14	2.6	1.8	105.5	108.2
2	TUP	TUPPERWARE BRANDS CORP	Jun-21	C	4.750	1,226	572	1,798	11	76.8	87.8	51.8	47.8
3	CHTR	CCO HOLDINGS LLC	Sep-21	BBB	4.000	1,066	40	1,106	5	1.9	3.3	102.2	100.8
4	F	FORD	Jul-31	BB	7.450	1,037	439	1,476	29	9.4	9.5	86.4	85.8
5	F	FORD	Feb-29	BB	6.375	990	96	1,086	9	8.9	9.3	85.1	82.7
6	PNC	PNC FDG CORP	Null	BBB	6.750	947	337	1,284	18	6.7	6.8	101.0	99.4
7	JPM	JP MORGAN CHASE	Dec-49	BBB	5.000	926	169	1,095	26	5.3	5.4	94.4	92.7
8	WFC	WELLS FARGO	Null	BBB	5.900	918	174	1,092	13	5.8	5.9	101.3	99.9
9	FTVQ	Null	Feb-22	BBB	0.875	902	58	960	3	3.4	3.7	95.6	95.0
10	F	FORD	Apr-23	BB	8.500	878	108	986	25	8.9	9.1	98.9	98.4
11	SCHW	SCHWAB CHARLES CORP NEW	Dec-49	BBB	5.375	871	30	901	27			103.3	102.7
12	LUV	SOUTHWEST AIRLS CO	Nov-20	BBB	2.650	804	63	867	17	3.4	4.3	99.6	99.1
13	HPQ	HEWLETT PACKARD	Oct-23	BBB	4.450	791	6	797	5	3.1	2.9	104.4	104.7
14	NFLX	NETFLIX INC	Feb-22	BB	5.500	777	53	830	7	2.4	3.3	105.5	103.9
15	CCL	CARNIVAL CORP	Oct-20	BBB	3.950	766	223	989	14	9.8	11.3	97.3	96.7
16	F	FORD	Apr-25	BB	9.000	766	72	838	19	9.6	9.9	97.3	96.5
17	BDX	BECTON DICKINSON & CO	Dec-24	BBB	3.734	751	27	778	4	2.1	2.2	106.9	106.3
18	COF	CAPITAL ONE FINL CORP	Null	BB	5.550	749	273	1,022	14	6.5	6.6	85.0	83.8
19	AEE	AMEREN	Jan-31	BBB	3.500	736	8	744	4	2.6	2.4	108.6	108.2
20	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	Null	BBB	5.000	725	296	1,021	20	6.0	6.0	83.8	82.7

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

April 2020

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	KO	COCA COLA CO	Nov-23	A	3.200	76	1,947	2,023	12	0.7	0.9	108.7	108.0
2	GPS	GAP	Apr-21	BB	5.950	222	1,431	1,653	30	9.8	3.1	96.5	102.0
3	TRP	TRANSCANADA PIPELINES LTD	Aug-76	BBB	5.875	39	785	824	5			88.2	94.8
4	MSFT	MICROSOFT CORP	Aug-21	AAA	1.550	60	743	803	7	0.5	0.4	101.3	101.4
5	PG	PROCTER & GAMBLE CO	Aug-23	AA	3.100	33	685	718	5	0.5	0.4	108.6	108.9
6	GM	GENERAL MOTORS FINANCIAL COMPANY INC	Null	BB	5.750	587	633	1,220	9	7.3	7.4	78.9	78.0
7	JPM	JP MORGAN CHASE	Null	BBB	6.000	334	631	965	14	6.0	5.9	100.8	101.5
8	TUP	TUPPERWARE BRANDS CORP	Jun-21	C	4.750	1,226	572	1,798	11	76.8	87.8	51.8	47.8
9	JPM	JP MORGAN CHASE	Oct-26	A	2.950	296	532	828	7	2.1	2.2	105.0	104.1
10	AIG	AIG	Jul-25	BBB	3.750	43	520	563	8	2.5	2.2	105.7	107.2
11	VZ	VERIZON	Nov-24	BBB	3.500	303	500	803	10	1.1	1.3	109.8	108.9
12	AAPL	APPLE INC	May-23	AA	2.400	313	487	800	18	0.8	0.9	104.8	104.5
13	T	AT&T	Feb-22	BBB	3.000	270	467	737	7	1.4	1.8	102.9	102.2
14	JPM	JP MORGAN CHASE	Null	BBB	5.239	480	454	934	12	5.7	5.8	92.6	90.7
15	F	FORD	Jul-31	BB	7.450	1,037	439	1,476	29	9.4	9.5	86.4	85.8
16	DHR	DANAHER CORP	Jan-21	BBB	0.000	4	433	437	7			568.0	511.5
17	ORCL	ORACLE CORP	Nov-27	A	3.250	272	432	704	7	1.9	2.0	109.5	108.3
18	UA	UNDER ARMOR	Jun-26	BB	3.250	593	424	1,017	9	4.8	5.8	92.0	87.1
19	CVS	CVS CAREMARK CORP	Mar-28	BBB	4.300	251	418	669	14	2.4	2.5	113.2	112.8
20	VZ	VERIZON	Sep-23	BBB	5.150	194	412	606	13	1.0	1.0	113.8	113.7

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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