

Market Transparency Report

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

May 2019

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 2019

	Median Yield (bps)	Daily Trade Volume	Buy/Sell Ratio
Agency	1	-3.7%	0.2
CD	1	-4.5%	0.7
Corp	0	-6.3%	-0.1
Municipal	-13	-6.8%	-0.1
Treasury	-4	-10.9%	-0.5

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

Yield Matrix

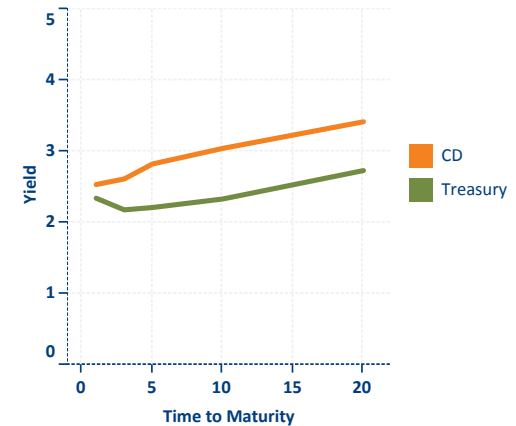
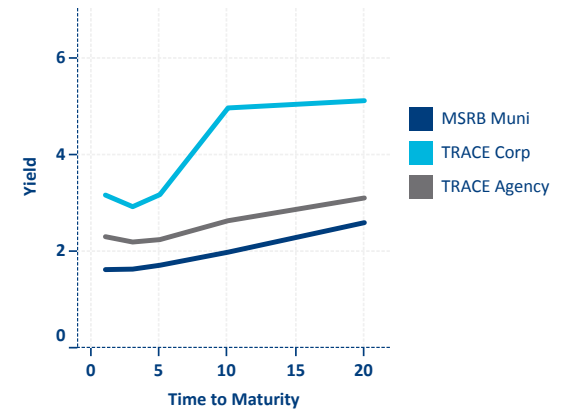
Average Yield, % for May 2019

Market	TTM					Median Maturity (Years)
	1	3	5	10	20	
MSRB Muni	1.6	1.6	1.7	2.0	2.6	10
TRACE Corp	3.2	2.9	3.2	5.0	5.1	4
TRACE Agency	2.3	2.2	2.3	2.6	3.1	4
CD	2.5	2.6	2.8	3.1	3.4	1
Treasury	2.3	2.2	2.2	2.3	2.7	0

Asset Class

Market	Category (Filtered)	Rating Key	1	3	5	10	20	Median Maturity (Years)
TRACE Corp	Financial	AA	2.5	2.4	2.7			2
		A	2.5	2.8	2.9	3.2	4.1	3
		BBB	3.1	3.3	3.5	4.0	4.9	4
		HY	3.0	3.7	4.3	7.3	6.2	3
		AAA	2.3		1.8	2.9	3.6	2
	Non-Financial	AA	2.4	2.3	2.5	3.0	3.7	2
		A	2.5	2.6	2.7	3.4	4.1	4
		BBB	2.8	3.2	3.8	4.7	5.6	9
		HY	17.8	4.6	6.0	9.7	19.8	8
MSRB Muni	GO	AAA	1.6	1.6	1.6	1.8	2.4	8
		AA	1.6	1.6	1.7	2.0	2.6	9
		A	1.7	1.7	1.9	2.1	2.6	7
		BBB	2.5	2.3	2.5	3.1	3.5	10
		HY		2.8	7.2	3.7	4.0	4
	Revenue	AAA	1.6	1.6	1.6	1.8	2.2	7
		AA	1.6	1.6	1.6	1.9	2.4	10
		A	1.7	1.7	1.8	2.0	2.6	13
		BBB	2.1	2.2	2.4	2.7	3.1	15
		HY	3.7	4.6	5.5	4.4	4.5	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.

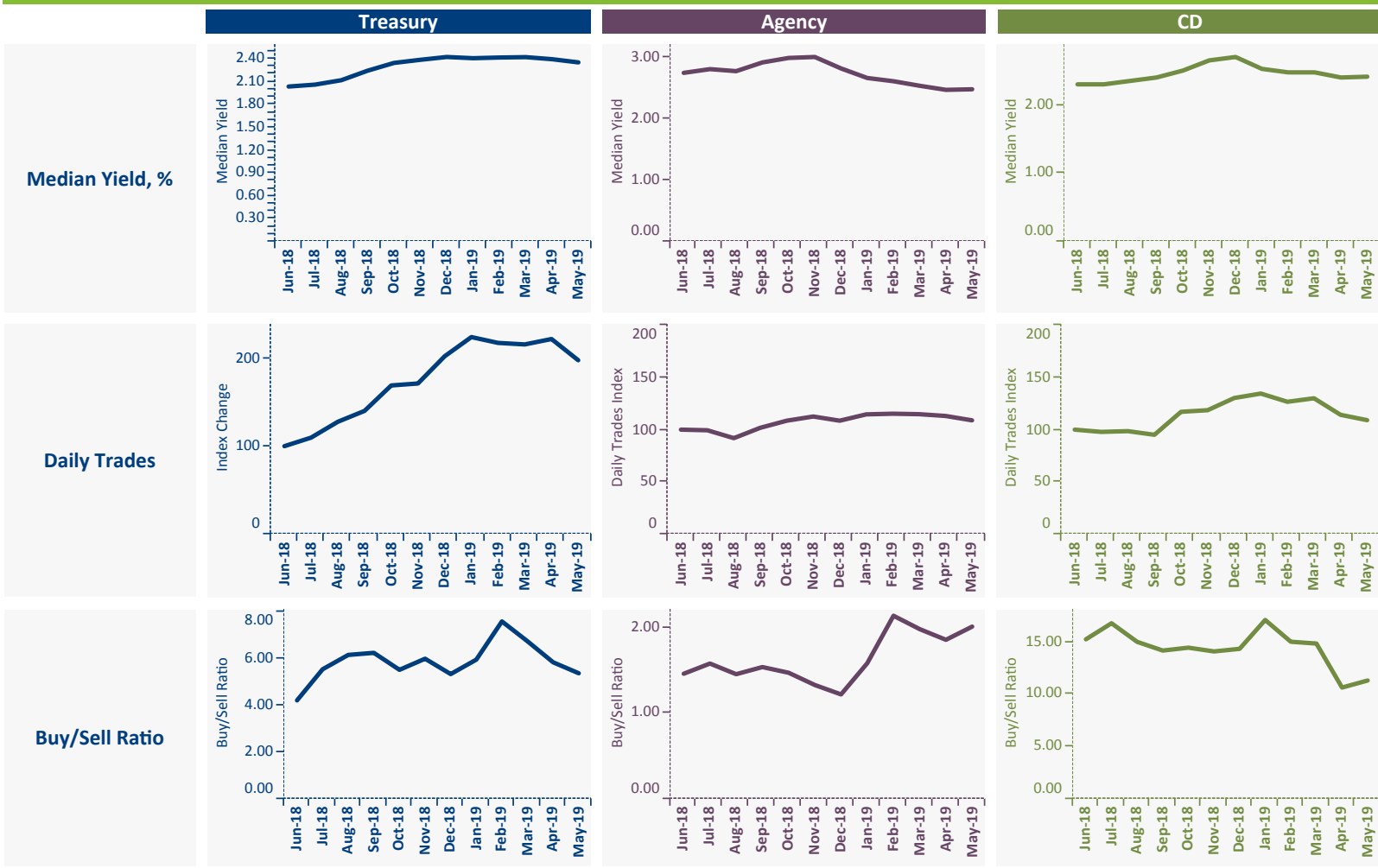
-The weights are based on transaction size.

-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

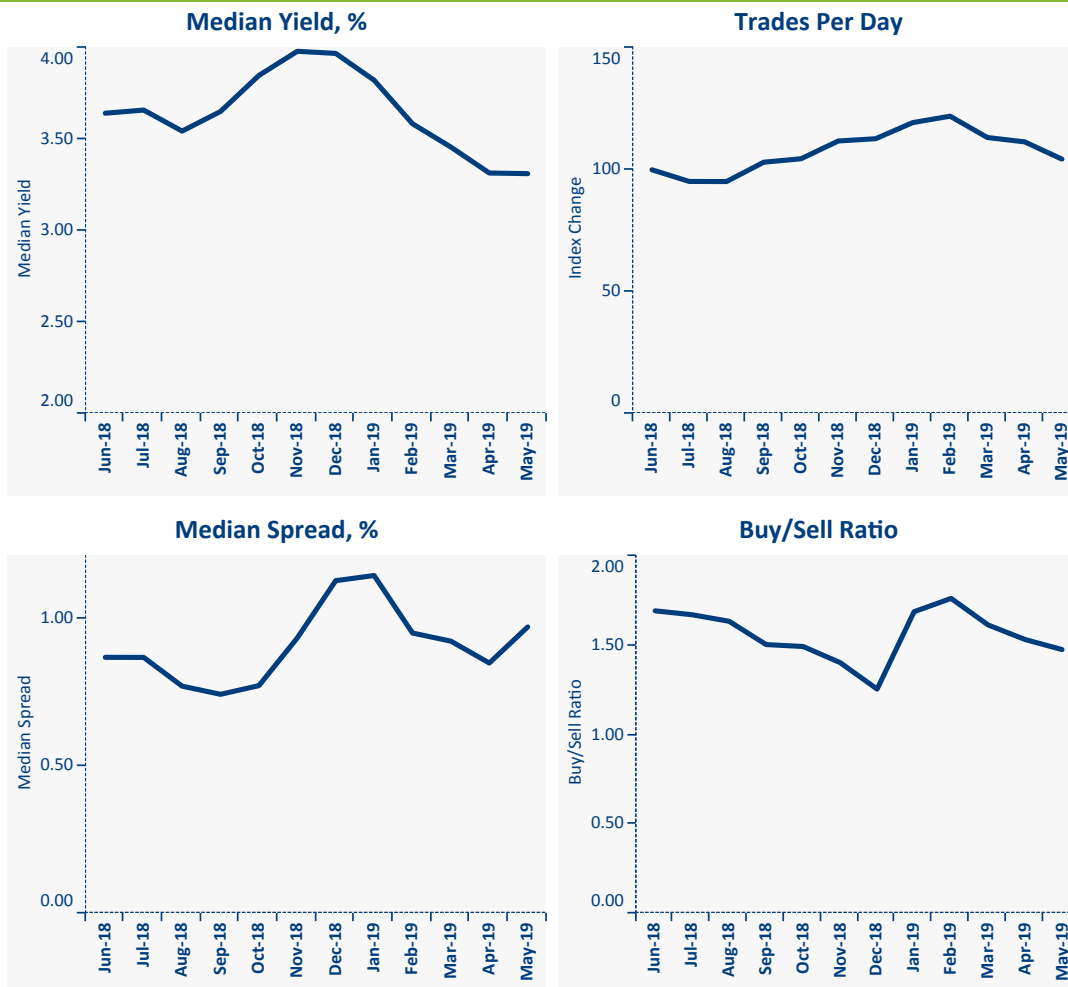
-Treasury and CD are based on transactions on the Tradeweb Direct Platform. Median yields are based on all customer buy transactions.

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

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Corporate Bonds: Odd-Lot Customer Transaction Trend Summary



Daily Trades: First month = 100

Source: TRACE and Tradeweb Direct

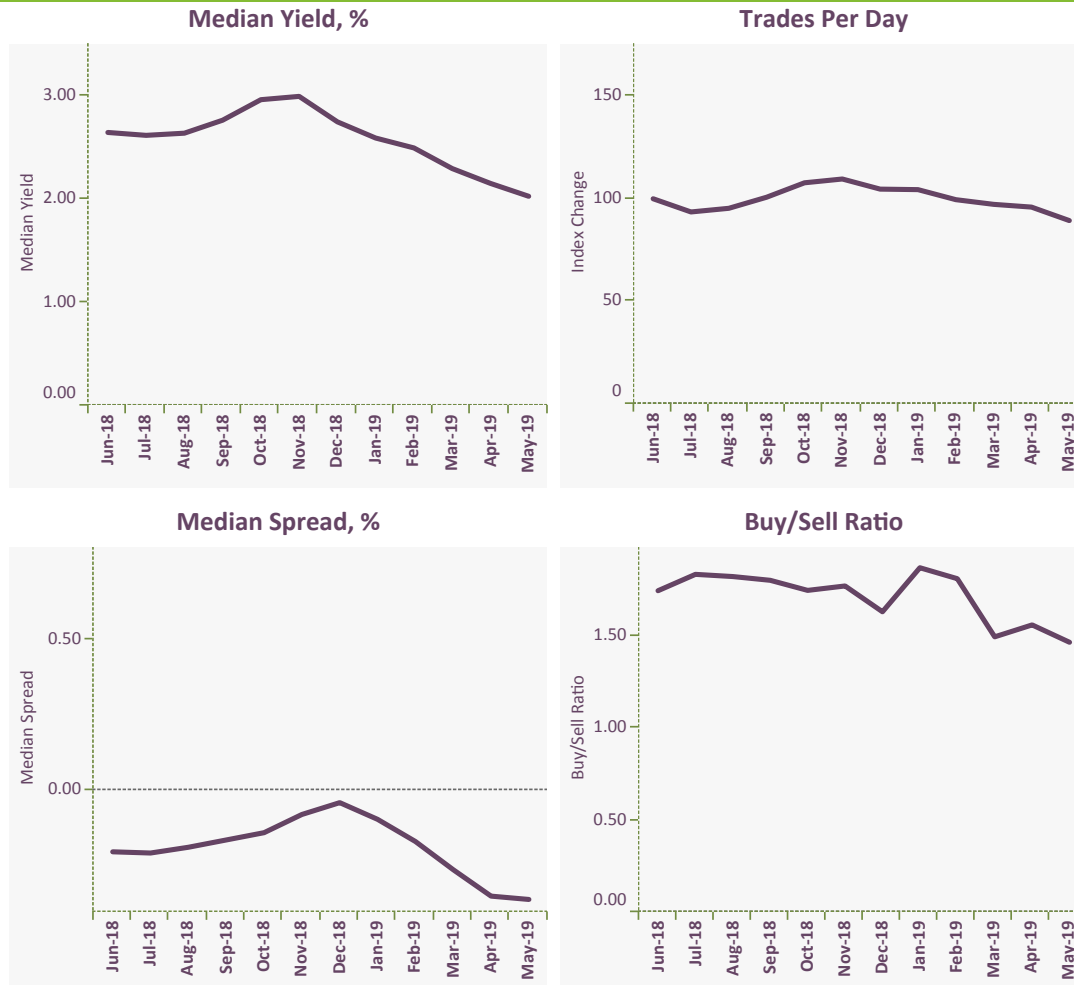
-Based on odd-lot customer transactions (<100M) reported in TRACE.

-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 2019

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	BBB	950	3.1%	15,532	1.5	321	2.7	2.9	3.2	3.7	4.5
2	JPM	JP MORGAN CHASE	A	569	2.8%	14,236	1.5	312	2.6	2.8	3.1	3.5	4.0
3	BAC	BANK OF AMERICA	A	415	2.4%	12,029	1.6	272	2.6	2.9	3.3	3.5	4.1
4	C	CITIGROUP	BBB	416	2.4%	11,910	1.3	255	2.6	2.9	3.2	3.8	4.0
5	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	BBB	318	1.9%	9,749	1.3	193	2.8	3.1	3.6	4.4	5.0
6	WFC	WELLS FARGO	A	199	1.7%	8,795	1.5	199	2.6	2.9	3.1	3.5	4.4
7	F	FORD	BBB	252	1.7%	8,392	3.3	154	2.8	3.3	4.2	4.6	6.0
8	MS	MORGAN STANLEY	BBB	710	1.5%	7,798	1.1	171	2.6	2.9	3.1	3.5	4.2
9	T	AT&T	BBB	94	1.5%	7,792	1.3	164	2.7	2.8	3.2	3.8	4.7
10	GM	GENERAL MOTORS FINANCIAL COMPANY INC	BBB	102	1.4%	7,237	2.7	171	2.8	3.3	3.8	4.4	5.4
11	AAPL	APPLE INC	AA	52	1.3%	6,460	1.5	138	2.4	2.5	2.7	3.1	3.9
12	CVS	CVS CAREMARK CORP	BBB	42	1.2%	5,905	2.3	129	2.8	3.0	3.4	4.0	4.8
13	X	UNITED STS STL CORP NEW	B	3	1.1%	5,341	5.1	72					8.1
14	BRK	BERKSHIRE HATHAWAY	A	155	1.0%	5,016	1.3	124	2.5	2.6	2.7	4.0	4.9
15	CMCS	COMCAST	A	63	1.0%	4,809	1.5	99	2.6	2.6	2.9	3.3	4.0
16	VZ	VERIZON	BBB	130	0.9%	4,512	0.9	101	2.6	2.9	2.9	3.3	4.0
17	AXP	AMERICAN EXPRESS	BBB	39	0.9%	4,328	1.8	96	2.6	2.8	3.0	3.0	3.8
18	ORCL	ORACLE CORP	AA	29	0.8%	4,043	1.3	81	2.5	2.6	2.8	3.1	3.7
19	PEMX	PETROLEOS MEXICANOS	BBB	44	0.7%	3,736	2.1	118	3.0	4.4	4.9	6.5	7.2
20	MSFT	MICROSOFT CORP	AAA	38	0.7%	3,698	1.2	82	2.3	2.4	2.6	2.9	3.5

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.

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

May 2019

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	MYL	MYLAN INC	BBB	10	0.3%	1,498	1,309	189	6.9	31		3.5	4.1	5.0	5.8
2	NWL	NEWELL RUBBERMAID INC	BBB	10	0.2%	1,254	1,070	184	5.8	26	2.9	3.4	3.9		5.7
3	X	UNITED STS STL CORP NEW	B	3	1.1%	5,341	4,459	882	5.1	72					8.1
4	MO	ALTRIA GROUP INC	BBB	22	0.6%	2,840	2,293	547	4.2	65	2.7	3.0	3.3	4.3	5.1
5	EIX	EDISON MISSION	BBB	33	0.3%	1,639	1,314	325	4.0	35	3.0	4.0	3.1	4.6	4.4
6	URI	UNITED RENTALS NORTH AMER INC	BB	10	0.3%	1,362	1,071	291	3.7	25			3.7	5.0	
7	LMT	LOCKHEED MARTIN CORP	BBB	18	0.4%	1,804	1,389	415	3.4	32	2.5	2.6	2.9	3.5	3.7
8	F	FORD	BBB	252	1.7%	8,392	6,435	1,957	3.3	154	2.8	3.3	4.2	4.6	6.0
9	NEE	FPL GROUP CAP INC	BBB	44	0.3%	1,375	1,024	351	2.9	28	2.7	2.7	2.9	3.3	3.8
10	ABBV	ABBVIE INC	BBB	16	0.6%	3,168	2,328	840	2.8	72	2.7	2.9	3.3	3.9	4.5
11	FDX	FEDEX CORP	BBB	23	0.3%	1,496	1,096	400	2.7	32	2.6	2.8	2.8	3.4	4.5
12	GM	GENERAL MOTORS FINANCIAL COMPANY INC	BBB	102	1.4%	7,237	5,278	1,959	2.7	171	2.8	3.3	3.8	4.4	5.4
13	GT	GOODYEAR TIRE & RUBBER	BB	5	0.3%	1,515	1,081	434	2.5	37	3.3		4.9	6.1	
14	BA	BOEING CO	A	41	0.2%	1,211	861	350	2.5	29	2.6	2.6	2.8	3.2	3.8
15	PSEC	PROSPECT CAP CORP INTERNOTES BOOK ENTRY	BBB	176	0.3%	1,690	1,191	499	2.4	28	3.0	4.6	5.9	5.8	6.4
16	MET	METLIFE	BBB	21	0.6%	2,977	2,080	897	2.3	64		2.7	2.7	4.7	3.8
17	WAG	WALGREEN CO	BBB	9	0.3%	1,548	1,079	469	2.3	32	2.6	2.9	3.5		4.5
18	CVS	CVS CAREMARK CORP	BBB	42	1.2%	5,905	4,098	1,807	2.3	129	2.8	3.0	3.4	4.0	4.8
19	AMGN	AMGEN INC	A	31	0.4%	2,213	1,506	707	2.1	49	2.6	2.7	2.9	3.4	4.5
20	PEMX	PETROLEOS MEXICANOS	BBB	44	0.7%	3,736	2,533	1,203	2.1	118	3.0	4.4	4.9	6.5	7.2

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 2019

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	WFT	WEATHERFORD INTL LTD BERMUDA	C	12	0.3%	1,510	137	1,373	0.10	16	51.4	37.1	24.8		12.9
2	BMV	BRISTOL MYERS SQUIBB CO	BBB	39	0.3%	1,594	433	1,161	0.37	26	3.0	2.9	3.2	3.4	4.2
3	AA	ALCOA	BB	9	0.3%	1,628	640	988	0.65	40	3.7	4.2	4.7	5.3	6.0
4	CTL	CENTURYLINK	B	33	0.6%	3,225	1,270	1,955	0.65	66	4.2	4.7	5.7	7.3	8.9
5	STI	SUNTRUST BKS INC	BBB	31	0.3%	1,679	695	984	0.71	32	2.8	2.8	3.1		
6	FTR	FRONTIER COMMUNICATIONS CORP	C	24	0.4%	1,958	855	1,103	0.78	27	14.1	23.5	23.0	17.5	16.2
7	PTRB	PETROBRAS	BB	20	0.5%	2,620	1,161	1,459	0.80	95		4.0	4.5	5.6	6.6
8	RY	ROYAL BANK OF CANADA	AA	207	0.3%	1,512	684	828	0.83	33	2.6	2.6	2.9	3.9	4.4
9	VZ	VERIZON	BBB	130	0.9%	4,512	2,101	2,411	0.87	101	2.6	3.2	2.9	3.5	4.1
10	EDP	ENTERPRISE PRODS OPER LLC	BBB	33	0.3%	1,514	728	786	0.93	32	2.9	3.0	3.2	3.4	4.5
11	MRK	MERCK & CO INC NEW	AA	21	0.3%	1,342	648	694	0.93	26	2.7	2.7	2.8	3.2	3.8
12	USB	U S BANCORP MEDIUM TERM NTS- BOOK ENTRY	A	26	0.4%	1,937	934	1,003	0.93	34	2.6	2.7	2.9	3.0	
13	CS	CREDIT SUISSE	N/R	359	0.3%	1,557	760	797	0.95	28	3.1	3.1	3.2	4.0	
14	BNS	BANK NOVA SCOTIA B C	AA	121	0.2%	1,231	603	628	0.96	29	2.7	2.6	3.0	4.2	
15	SFTBF	SPRINT	B	14	0.3%	1,554	782	772	1.01	42	4.0	5.4	6.5	6.6	
16	KO	COCA COLA CO	A	26	0.2%	1,183	597	586	1.02	25	2.5	2.5	2.6	3.0	4.1
17	HPQ	HEWLETT PACKARD	BBB	18	0.4%	1,923	978	945	1.03	42	2.9	3.0		5.0	5.5
18	CSCO	CISCO	AA	16	0.3%	1,680	855	825	1.04	28	2.6	2.6	2.6		3.7
19	DUK	DUKE ENERGY	BBB	105	0.4%	1,780	909	871	1.04	40	2.9	2.7	3.0	3.2	3.9
20	DIS	DISNEY WALT CO NEW MEDIUM TERM NTS BOOK	A	60	0.3%	1,345	692	653	1.06	29	2.6	2.6	3.6	3.0	3.9

Source: TRACE and Tradeweb Direct

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

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Corporate Bonds: Top 20 Most Bought Issues

May 2019

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	X	UNITED STS STL CORP NEW	Mar-26	B	6.250	2,490	188	2,678	35	8.7	8.7	87.6	87.3
2	F	FORD	Jun-59	BBB	6.200	2,214	171	2,385	15			25.4	25.0
3	X	UNITED STS STL CORP NEW	Aug-25	B	6.875	1,825	254	2,079	29	8.2	8.3	93.8	93.0
4	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	Null	BBB	5.000	1,560	736	2,296	36	5.3	5.3	94.9	93.6
5	F	FORD	Dec-26	BBB	4.346	812	330	1,142	30	4.5	4.7	98.9	97.6
6	MO	ALTRIA GROUP INC	Feb-29	BBB	4.800	766	49	815	16	4.3	4.3	103.9	103.9
7	WMI	WASTE MGMT INC DEL	Jun-29	BBB	3.450	725	6	731	9	3.2	3.3	100.7	100.7
8	LMT	LOCKHEED MARTIN CORP	Nov-19	BBB	4.250	704	28	732	6	2.5	2.8	100.8	100.7
9	CMCS	COMCAST	Oct-25	A	3.950	676	110	786	13	3.0	3.1	105.3	104.8
10	URI	UNITED RENTALS NORTH AMER INC	Jul-25	BB	5.500	670	27	697	10	4.8	4.8	102.8	102.7
11	MET	METLIFE	Jun-47	BBB	4.700	626	36	662	16	6.0	6.2	82.2	80.6
12	GT	GOODYEAR TIRE & RUBBER	May-26	BB	5.000	613	202	815	19	5.9	6.0	95.1	94.5
13	MET	METLIFE	Jun-27	BBB	3.700	607	44	651	13	4.7	4.8	93.5	92.6
14	WDC	WESTERN DIGITAL CORP	Feb-26	BBB	4.750	551	120	671	16	5.4	5.6	96.6	95.4
15	RDS	SHELL	Sep-19	AA	4.300	543	106	649	4	2.5	2.8	100.6	100.5
16	BAC	BANK OF AMERICA	Aug-24	BBB	4.200	533	162	695	13	3.3	3.4	104.1	103.8
17	WLL	WHITING PETE CORP	Jan-26	BB	6.625	533	39	572	8	7.8	7.4	94.1	96.2
18	DLTR	Null	May-25	BBB	4.000	519	48	567	5	3.6	3.6	101.9	102.2
19	ETSY	Null	Mar-23	N/R	0.000	484	24	508	4			185.7	185.9
20	AIG	AIG	Jul-25	BBB	3.750	477	76	553	6	3.5	3.4	101.4	101.7

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).

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Corporate Bonds: Top 20 Most Sold Issues

May 2019

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	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	Null	BBB	5.000	1,560	736	2,296	36	5.3	5.3	94.9	93.6
2	WFT	WEATHERFORD INTL LTD BERMUDA	Jul-21	C	5.875	11	601	612	4	23.1	37.1	72.0	56.9
3	BK	BANK NEW YORK INC MEDIUM TERM SR NTS BOO	Aug-20	A	2.600	35	526	561	12	2.6	2.6	100.1	99.9
4	STI	SUNTRUST BKS INC	Null	BBB	5.125	153	470	623	7	5.2	5.3	98.1	96.5
5	AVP	AVON PRODS INC	Mar-23	B	7.000	111	446	557	14	6.6	6.5	101.3	101.8
6	CTL	CENTURYLINK	Jan-28	B	6.875	57	446	503	7	7.3	7.3	97.6	97.0
7	X	UNITED STS STL CORP NEW	Jun-37	B	6.650	144	440	584	8	8.1	8.9	85.9	80.3
8	BMY	BRISTOL MYERS SQUIBB CO	May-24	BBB	3.625	16	412	428	3	3.0	3.3	102.7	101.3
9	JCP	JC PENNEY	Apr-37	C	7.400	31	408	439	2	21.9	19.0	35.3	41.2
10	BMY	BRISTOL MYERS SQUIBB CO	Aug-22	BBB	3.250	31	405	436	6	2.8	2.9	101.4	101.2
11	C	CITIGROUP	Null	BB	6.125	443	378	821	10	5.9	5.9	102.9	103.3
12	T	AT&T	Feb-22	BBB	3.000	283	350	633	6	2.8	2.8	100.6	100.4
13	JPM	JP MORGAN CHASE	Oct-26	A	2.950	354	350	704	7	3.2	3.3	98.1	97.8
14	AAPL	APPLE INC	May-23	AA	2.400	393	333	726	17	2.6	2.6	99.2	99.1
15	F	FORD	Dec-26	BBB	4.346	812	330	1,142	30	4.5	4.7	98.9	97.6
16	SCHW	SCHWAB CHARLES CORP NEW	Null	BBB	4.625	164	328	492	7	4.6	4.6	100.2	99.9
17	SFTBF	SPRINT	Nov-28	B	6.875	175	327	502	13	7.1	6.6	98.3	101.7
18	PANW	Null	Jul-19	N/R	0.000	16	325	341	2			214.0	204.1
19	EEFT	Null	Oct-44	BBB	1.500	13	321	334	2			205.1	203.9
20	VZ	VERIZON	Sep-23	BBB	5.150	201	319	520	11	2.8	2.8	109.6	109.4

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).

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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