

Market Transparency Report

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

August 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 August 2019

	Median Yield (bps)	Daily Trade Volume	Buy/Sell Ratio
Agency	-23	-15.7%	0.3
CD	-10	-1.9%	-0.6
Corp	-18	-3.8%	-0.1
Municipal	-34	-7.6%	-0.2
Treasury	-14	-8.9%	-1.2

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

Yield Matrix

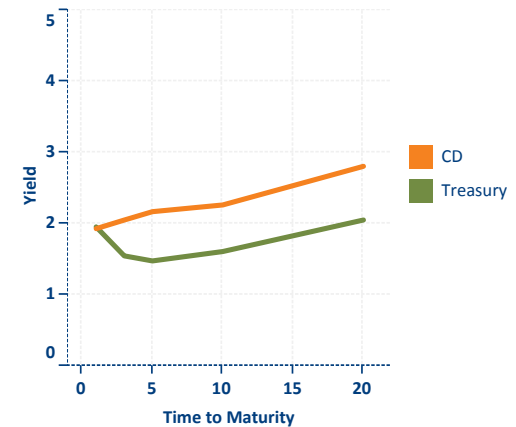
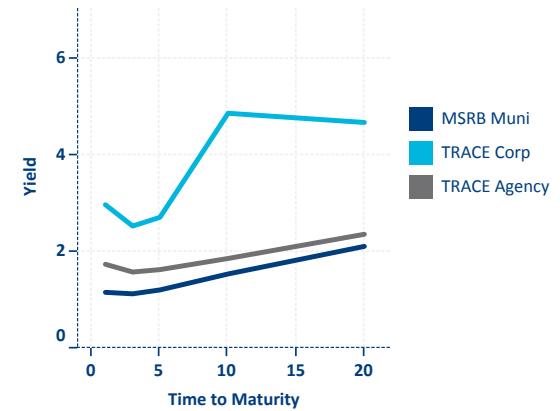
Average Yield, % for August 2019

Market	TTM					Median Maturity (Years)
	1	3	5	10	20	
MSRB Muni	1.2	1.1	1.2	1.5	2.1	10
TRACE Corp	3.0	2.5	2.7	4.9	4.7	4
TRACE Agency	1.7	1.6	1.6	1.9	2.4	2
CD	1.9	2.1	2.2	2.5	2.8	1
Treasury	1.9	1.6	1.5	1.6	2.1	0

Asset Class

Market	Category (Filtered)	Rating Key	TTM					Median Maturity (Years)
			1	3	5	10	20	
TRACE Corp	Financial	AA	1.9	1.8				2
		A	2.0	2.1	2.2	2.7	3.6	3
		BBB	2.8	3.2	3.3	4.4	4.9	3
		HY	2.5	3.1	2.8	6.8		6
		AAA	1.6		1.7	2.1	2.9	2
	Non-Financial	AA	1.9	1.8	2.1	2.4	2.9	1
		A	1.9	2.0	2.2	2.6	3.8	3
		BBB	2.5	3.0	3.3	4.6	5.2	9
		HY	13.3	5.8	15.1	9.8	22.6	1
MSRB Muni	GO	AAA	1.1	1.0	1.1	1.4	2.0	8
		AA	1.1	1.1	1.2	1.5	2.1	9
		A	1.2	1.2	1.3	1.6	2.1	8
		BBB	1.9	1.9	2.1	2.6	3.0	10
		HY	3.4	6.1	1.7	3.1	3.1	15
	Revenue	AAA	1.1	1.0	1.1	1.3	1.9	8
		AA	1.1	1.1	1.1	1.4	1.9	10
		A	1.2	1.2	1.3	1.6	2.0	13
		BBB	1.5	1.7	1.8	2.1	2.6	18
		HY	5.7	3.8	4.6	4.4	4.0	13

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.

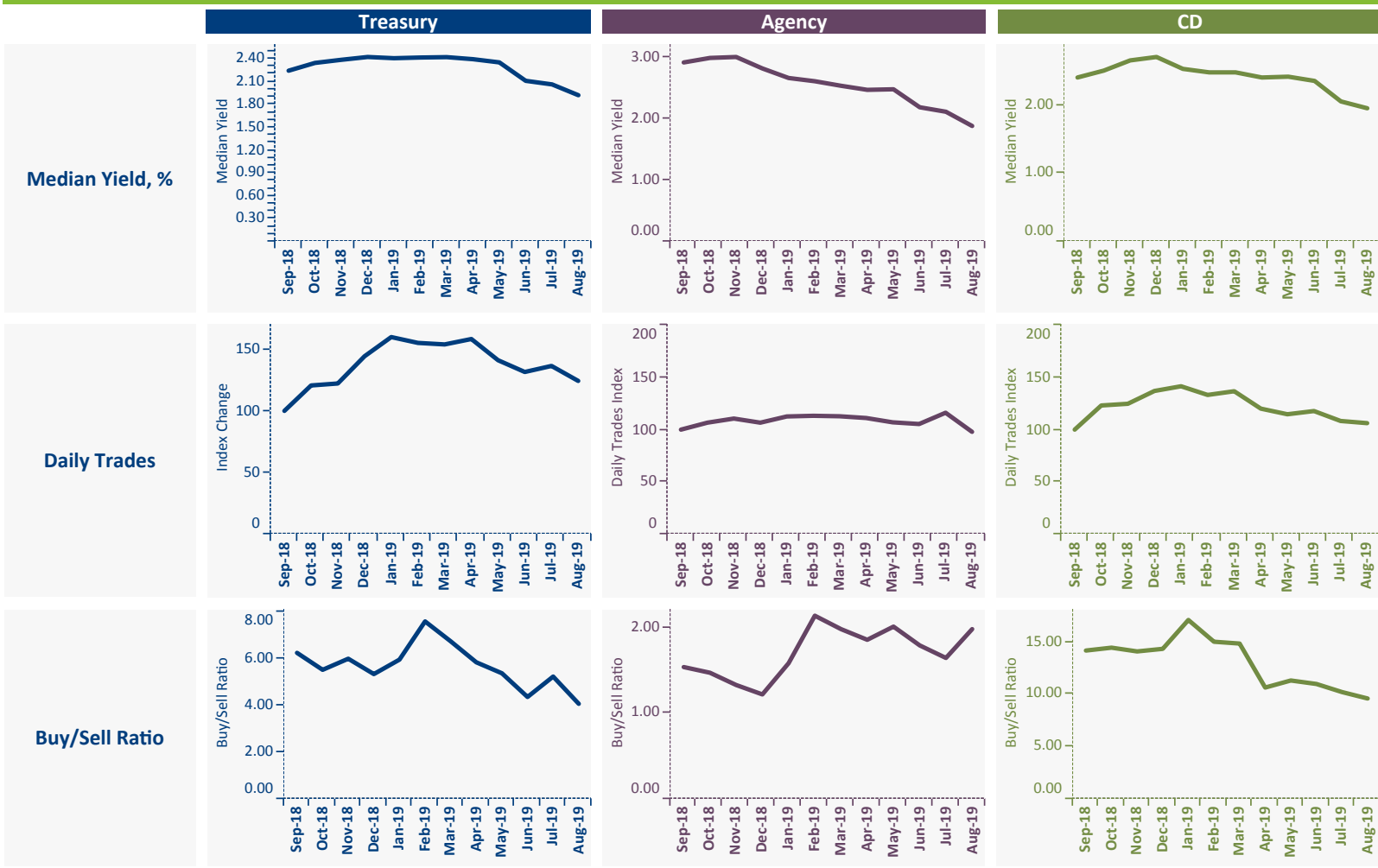
-The weights are based on transaction size.

-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

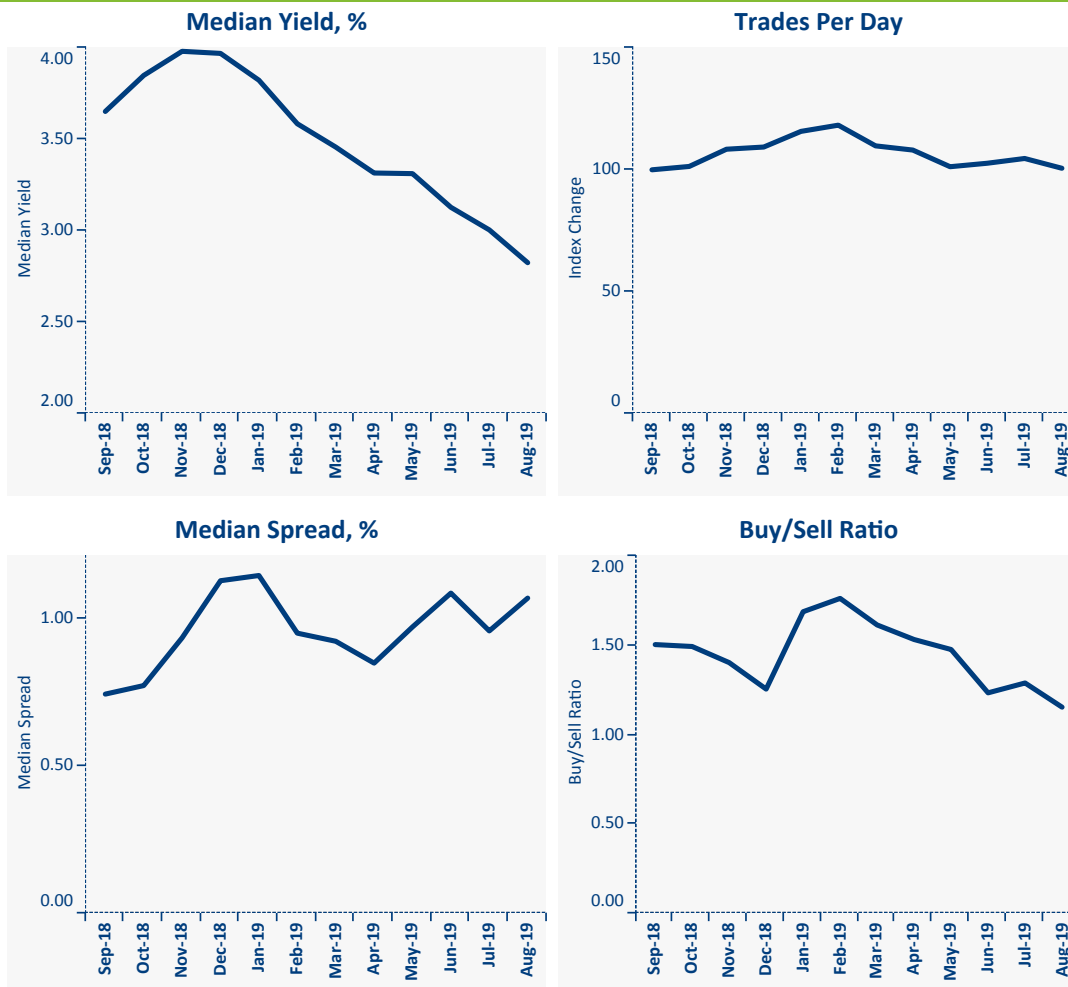
-Treasury and CD are based on transactions on the Tradeweb Direct Platform. Median yields are based on all customer buy transactions.

-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

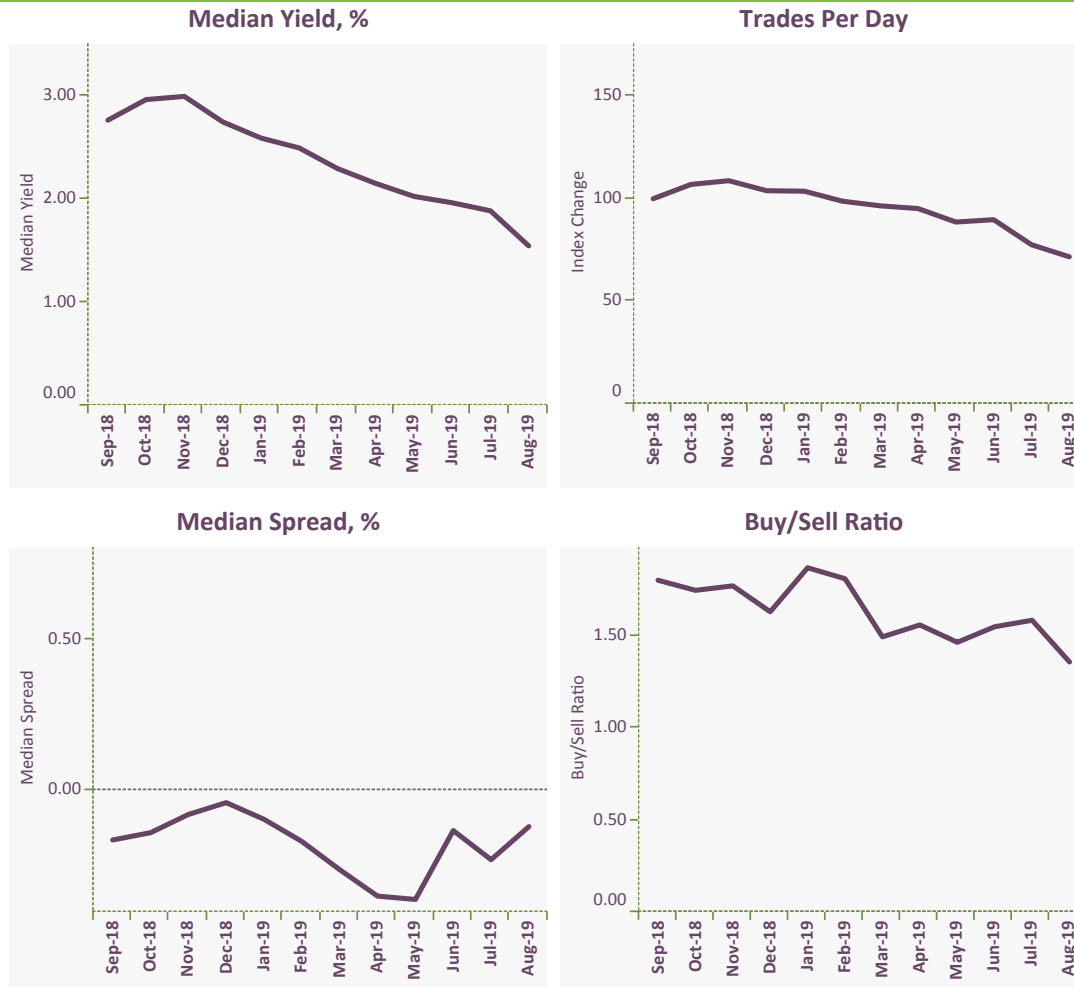
-Based on odd-lot customer transactions (<100M) reported in TRACE.

-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

August 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	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	BBB	331	3.8%	18,916	1.0	390	2.9	3.5	4.0	4.6	4.7
2	JPM	JP MORGAN CHASE	BBB	601	3.1%	15,766	1.0	324	2.1	2.1	2.3	2.7	3.2
3	GS	GOLDMAN SACHS	BBB	1,046	3.1%	15,554	1.1	335	2.1	2.2	2.5	3.3	4.0
4	BAC	BANK OF AMERICA	A	407	2.3%	11,792	1.2	271	2.0	2.1	2.5	2.8	3.7
5	C	CITIGROUP	BBB	424	2.1%	10,726	1.1	244	2.1	2.2	2.7	3.0	3.2
6	WFC	WELLS FARGO	A	218	1.7%	8,356	1.2	187	2.0	2.1	2.3	2.8	3.6
7	GM	GENERAL MOTORS FINANCIAL COMPANY INC	BBB	100	1.6%	8,023	2.3	183	2.3	2.8	3.1	3.8	5.0
8	T	AT&T	BBB	116	1.5%	7,716	0.7	177	2.1	2.2	2.4	3.0	4.1
9	MS	MORGAN STANLEY	BBB	702	1.4%	7,056	0.9	161	2.1	2.2	2.4	3.0	3.3
10	CVS	CVS CAREMARK CORP	BBB	47	1.3%	6,711	1.0	133	2.2	2.3	2.7	3.1	4.0
11	F	FORD	BBB	266	1.3%	6,695	2.3	160	2.5	2.9	3.3	4.7	5.5
12	AAPL	APPLE INC	AA	48	1.3%	6,613	1.2	134	1.8	1.8	2.0	2.4	3.1
13	BRK	BERKSHIRE HATHAWAY	A	151	1.1%	5,492	1.1	142	2.2	1.9	2.2	3.9	4.2
14	VZ	VERIZON	BBB	134	1.0%	5,106	0.8	112		2.2	2.2	2.6	3.2
15	CMCS	COMCAST	A	60	0.9%	4,326	1.3	94	2.1	2.0	2.2	2.5	3.2
16	MET	METLIFE	BBB	21	0.8%	4,058	2.2	80		2.1	2.1	3.8	3.1
17	AXP	AMERICAN EXPRESS	BBB	40	0.8%	4,043	1.0	79	2.1	2.1	2.3	2.3	2.9
18	PEMX	PETROLEOS MEXICANOS	BBB	37	0.8%	3,924	1.5	116	3.0	4.5	5.0	6.5	7.2
19	MSFT	MICROSOFT CORP	AAA	37	0.8%	3,856	1.0	91	1.7	1.7	1.8	2.0	2.7
20	ORCL	ORACLE CORP	A	28	0.7%	3,398	1.1	67	1.9	2.0	2.1	2.3	3.1

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

August 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	CC	Null	BB	3	0.2%	1,201	1,040	161	6.5	19		6.0	7.5	7.2	
2	X	UNITED STS STL CORP NEW	B	3	0.3%	1,699	1,410	289	4.9	29			7.9		8.4
3	STT	STATE STR CORP	BBB	16	0.4%	1,916	1,506	410	3.7	52	1.9	2.1	2.2		
4	BPL	BUCKEYE PARTNERS	BBB	9	0.4%	1,811	1,337	474	2.8	41	2.8	4.2	4.7	5.7	6.7
5	FDX	FEDEX CORP	BBB	25	0.3%	1,460	1,069	391	2.7	32	2.1	2.1	2.3	2.9	3.9
6	DOW	DOW CHEM CO	BBB	114	0.3%	1,441	1,030	411	2.5	35	2.3	2.3	2.4	3.2	3.6
7	BBT	BB&T CORP SR MEDIUM TERM NTS BOOK ENTRY	A	28	0.4%	1,917	1,359	558	2.4	49	2.0	2.1	2.2	2.7	
8	F	FORD	BBB	266	1.3%	6,695	4,666	2,029	2.3	160	2.5	2.9	3.3	4.7	5.5
9	FCX	FREEPORT-MCMORAN COPPER & GOLD INC	BB	12	0.3%	1,321	919	402	2.3	30		3.3	4.3	5.1	6.0
10	GM	GENERAL MOTORS FINANCIAL COMPANY INC	BBB	100	1.6%	8,023	5,557	2,466	2.3	183	2.3	2.8	3.1	3.8	5.0
11	LTD	LIMITED BRANDS INC	BB	10	0.3%	1,621	1,114	507	2.2	38		3.4	4.2	7.3	8.4
12	MET	METLIFE	BBB	21	0.8%	4,058	2,769	1,289	2.2	80		2.1	2.1	3.8	3.1
13	DB	DEUTSCHE BANK	BBB	90	0.3%	1,528	1,000	528	1.9	32	2.7	3.2	3.7	4.2	
14	KO	COCA COLA CO	A	25	0.3%	1,657	1,075	582	1.9	27	1.9	1.8	2.1	1.9	2.9
15	TEVA	TEVA PHARMACEUTICAL FIN CO B V	BB	12	0.5%	2,412	1,554	858	1.8	49	3.0	6.6	8.3	9.1	8.1
16	PBI	PITNEY BOWES	BB	6	0.2%	1,177	753	424	1.8	21	3.4	6.4	7.1		7.9
17	BA	BOEING CO	A	48	0.3%	1,380	879	501	1.8	36	1.9	2.0	2.2	2.5	3.2
18	COF	CAPITAL ONE FINL CORP	BBB	28	0.6%	2,831	1,780	1,051	1.7	64	2.2	2.3	2.6	3.1	
19	UNH	UNITEDHEALTH	A	48	0.4%	2,118	1,315	803	1.6	54	1.9	2.0	2.1	2.4	3.1
20	BRCM	BROADCOM CORP	BBB	8	0.3%	1,519	939	580	1.6	32	2.4	2.7	3.1	3.9	

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

August 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	MYL	MYLAN INC	BBB	9	0.3%	1,523	255	1,268	0.20	25	2.5		2.9	3.8	5.2
2	FTR	FRONTIER COMMUNICATIONS CORP	C	25	0.7%	3,280	654	2,626	0.25	32	93.4	39.4	25.5	20.6	17.4
3	NWL	NEWELL RUBBERMAID INC	BBB	10	0.3%	1,441	381	1,060	0.36	28	2.6	3.0	3.6		5.0
4	CHTR	CCO HOLDINGS LLC	BBB	37	0.3%	1,499	450	1,049	0.43	34	2.5	2.9	3.2	3.6	4.8
5	AIG	AIG	BBB	30	0.4%	1,991	682	1,309	0.52	34	2.4	2.3	2.5	3.1	3.7
6	VIA	VIACOM INC NEW	BBB	39	0.4%	1,861	643	1,218	0.53	41	2.4	3.0	2.7	3.3	4.3
7	PTRB	PETROBRAS	BB	19	0.5%	2,548	889	1,659	0.54	96	2.9	3.4	3.6	4.8	5.8
8	BNS	BANK NOVA SCOTIA B C	BBB	116	0.3%	1,363	503	860	0.58	25	2.1	2.0	2.1	5.0	
9	KMI	KINDER MORGAN ENERGY PARTNERS L P	BBB	63	0.5%	2,474	942	1,532	0.61	43	2.6	2.3	2.7	4.0	4.5
10	FITB	FIFTH THIRD BANCORP	BBB	15	0.3%	1,603	625	978	0.64	23	2.3	2.2	2.4	2.6	4.1
11	RY	ROYAL BANK OF CANADA	AA	221	0.3%	1,618	683	935	0.73	34	2.1	2.0	2.2	3.3	3.9
12	STI	SUNTRUST BKS INC	BBB	32	0.4%	2,020	849	1,171	0.73	34	3.3	2.2	2.4	3.5	
13	T	AT&T	BBB	116	1.5%	7,716	3,274	4,442	0.74	177	2.3	2.2	2.5	3.0	4.1
14	CS	CREDIT SUISSE	N/R	360	0.3%	1,379	615	764	0.80	27	4.3	2.9	2.5	4.0	3.8
15	STX	SEAGATE HDD CAYMAN	BBB	6	0.3%	1,638	732	906	0.81	43		3.5	4.2	4.7	5.8
16	VZ	VERIZON	BBB	134	1.0%	5,106	2,287	2,819	0.81	112		2.7	2.2	2.9	3.4
17	BCS	BARCLAYS	B	535	0.3%	1,692	772	920	0.84	37	3.2	3.2	3.4	3.7	3.7
18	HPQ	HEWLETT PACKARD	BBB	16	0.4%	1,870	854	1,016	0.84	45	2.4	2.4		4.4	5.1
19	CSCO	CISCO	AA	16	0.3%	1,597	734	863	0.85	25	2.0	1.9	1.9		3.0
20	BUD	ANHEUSER BUSCH INBEV WORLDWIDE INC	BBB	45	0.5%	2,697	1,244	1,453	0.86	63	2.0	2.1	2.3	2.7	3.6

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

August 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	1,948	1,457	3,405	62	5.2	5.5	96.0	91.6
2	GM	GENERAL MOTORS FINANCIAL COMPANY INC	Null	BB	5.750	984	148	1,132	20	6.1	6.2	93.7	93.1
3	MET	METLIFE	Null	BBB	5.250	918	247	1,165	16	5.2	5.2	101.7	101.0
4	FET	Forum Energy Technologies, Inc.	Oct-21	B	6.250	852	37	889	8	15.5	16.1	83.9	82.9
5	STT	STATE STR CORP	Sep-49	BBB	5.625	826	22	848	29	5.4	5.6	103.6	100.0
6	CVS	CVS CAREMARK CORP	Aug-24	BBB	2.625	785	14	799	12	2.5	2.6	99.7	100.2
7	BBT	BB&T CORP SR MEDIUM TERM NTS BOOK ENTRY	Null	BBB	4.800	731	18	749	24			100.0	99.5
8	CC	Null	May-25	BB	7.000	724	89	813	11	7.5	7.9	97.8	95.7
9	X	UNITED STS STL CORP NEW	Mar-26	B	6.250	698	105	803	11	8.4	8.6	89.2	88.5
10	MET	METLIFE	Jun-27	BBB	3.700	692	104	796	19	3.8	4.0	99.4	97.9
11	JPM	JP MORGAN CHASE	Dec-49	BBB	5.000	681	29	710	21	4.9	4.9	102.1	102.0
12	MET	METLIFE	Jun-47	BBB	4.700	665	261	926	20	5.3	5.4	91.0	89.5
13	AOI	ALLIANCE ONE INTL INC	Jul-21	C	9.875	663	137	800	7	23.7	24.1	79.9	79.3
14	GM	GENERAL MOTORS FINANCIAL COMPANY INC	Sep-49	BB	6.500	655	185	840	23	6.5	6.6	100.0	97.9
15	KO	COCA COLA CO	Nov-23	A	3.200	640	100	740	7	2.1	1.8	104.5	105.4
16	F	FORD	Dec-46	BBB	5.291	636	107	743	19	5.6	5.7	96.1	94.3
17	JCP	JC PENNEY	Jun-20	C	5.650	597	178	775	8	13.6	14.1	94.1	93.8
18	X	UNITED STS STL CORP NEW	Aug-25	B	6.875	593	126	719	15	7.9	8.0	95.3	94.8
19	CBL	CBL & ASSOCS LTD PARTNERSHIP	Dec-26	BB	5.950	542	156	698	6	13.0	13.4	67.2	66.0
20	OSK	OSHKOSH CORP	Mar-25	BBB	5.375	541	28	569	2	2.6	3.6	104.2	103.6

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).

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Corporate Bonds: Top 20 Most Sold Issues

August 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	CVS	CVS CAREMARK CORP	Mar-23	BBB	3.700	355	1,570	1,925	30	2.4	2.5	104.4	103.9
2	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	Null	BBB	5.000	1,948	1,457	3,405	62	5.2	5.5	96.0	91.6
3	FTR	FRONTIER COMMUNICATIONS CORP	Aug-31	C	9.000	32	1,071	1,103	5	20.4	20.6	49.5	49.0
4	JPM	JP MORGAN CHASE	Null	BBB	5.736	312	852	1,164	12	5.7	5.7	100.5	100.2
5	JPM	JP MORGAN CHASE	Null	BBB	6.750	326	840	1,166	10	6.1	6.1	111.5	110.7
6	AXP	AMERICAN EXPRESS	Null	BBB	5.200	238	724	962	7	5.2	5.2	100.2	100.1
7	NWL	NEWELL RUBBERMAID INC	Apr-26	BBB	4.200	123	674	797	9	3.7	3.6	102.8	103.1
8	FITB	FIFTH THIRD BANCORP	Null	BBB	4.900	97	668	765	3	4.9	5.0	99.5	98.9
9	STI	SUNTRUST BKS INC	Null	BBB	5.625	139	664	803	4	5.6	5.6	101.0	100.6
10	KMI	KINDER MORGAN ENERGY PARTNERS L P	Mar-22	BBB	4.150	9	561	570	1	2.2	2.3	104.8	104.5
11	SATS	HUGHES SATELLITE SYS CORP	Aug-26	BBB	5.250	69	520	589	7	4.3	4.4	105.4	104.8
12	MYL	MYLAN INC	Jun-21	BBB	3.150	27	503	530	3	2.4	2.5	101.3	101.1
13	Z	Null	Dec-21	N/R	2.000	9	492	501	2	1.0	1.1	117.0	107.3
14	GT	GOODYEAR TIRE & RUBBER	May-26	BB	5.000	406	489	895	18	5.0	5.1	99.9	99.3
15	CHTR	CCO HOLDINGS LLC	Feb-21	BBB	4.125	31	442	473	3	2.4	2.5	102.1	102.0
16	AIG	AIG	Jun-22	BBB	4.875	100	428	528	3	2.2	2.3	107.2	106.8
17	JPM	JP MORGAN CHASE	Oct-26	A	2.950	344	422	766	7	2.5	2.5	103.0	103.0
18	CAH	CARDINAL HEALTH INC	Jun-22	BBB	2.616	173	413	586	6	2.4	2.6	100.5	100.1
19	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	Feb-21	BBB	5.300	190	412	602	13	3.2	3.5	102.9	102.6
20	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	Jan-38	BBB	5.875	112	407	519	11	4.6	4.7	115.1	114.4

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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