

Market Transparency Report

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

September 2019

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.

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Market Commentary

Monthly Change Table for September 2019

	Median Yield (bps)	Daily Trade Volume	Buy/Sell Ratio
Agency	1	-8.2%	0.0
CD	-3	2.4%	0.0
Corp	-8	3.8%	0.2
Municipal	13	6.4%	0.2
Treasury	-5	13.7%	1.1

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

Yield Matrix

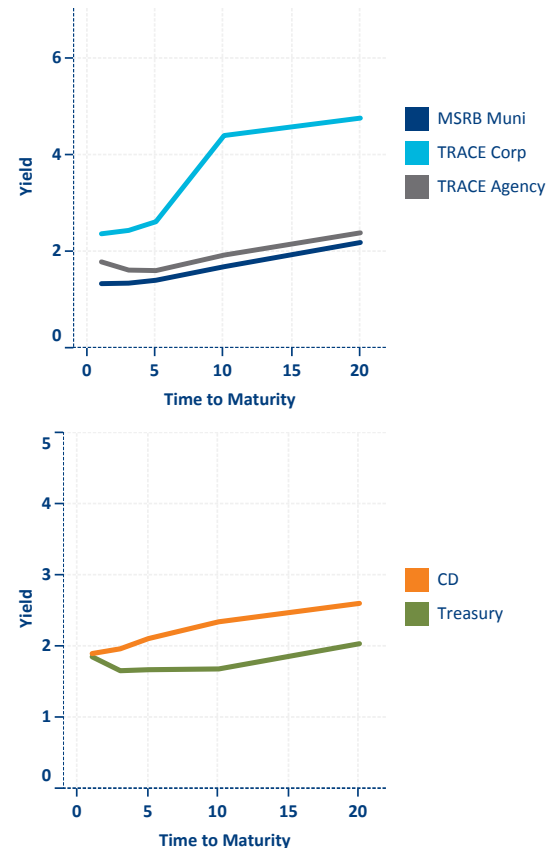
Average Yield, % for September 2019

Market	TTM					Median Maturity (Years)
	1	3	5	10	20	
MSRB Muni	1.3	1.4	1.4	1.7	2.2	10
TRACE Corp	2.4	2.4	2.6	4.4	4.8	3
TRACE Agency	1.8	1.6	1.6	1.9	2.4	3
CD	1.9	2.0	2.1	2.4	2.6	1
Treasury	1.9	1.7	1.7	1.7	2.0	0

Asset Class

Market	Category (Filtered)	Rating Key	TTM					Median Maturity (Years)
			1	3	5	10	20	
TRACE Corp	Financial	AA	1.9	1.9	2.7	3.3		2
		A	2.0	2.1	2.3	2.7	3.5	3
		BBB	2.5	2.9	3.1	3.7	4.4	4
		HY	2.4	3.1	2.7	6.7	6.0	6
	Non-Financial	AAA	1.7		1.7	2.3	2.9	1
		AA	1.8	2.1	2.0	2.6	3.0	1
		A	1.9	2.1	2.3	2.7	3.5	4
		BBB	2.3	2.7	3.0	4.2	4.6	7
		HY	11.3	9.1	12.7	7.8	21.4	7
MSRB Muni	GO	AAA	1.3	1.3	1.3	1.5	2.0	7
		AA	1.3	1.3	1.4	1.7	2.1	9
		A	1.4	1.4	1.5	1.8	2.2	7
		BBB	1.8	1.9	2.3	2.6	2.9	10
	Revenue	HY	3.2	3.8		3.1	3.1	9
		AAA	1.3	1.3	1.3	1.6	2.0	8
		AA	1.3	1.3	1.3	1.6	2.0	10
		A	1.4	1.4	1.5	1.7	2.1	13
		BBB	1.6	1.8	2.1	2.2	2.8	18
		HY	3.1	5.0	4.8	4.7	3.8	12

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.

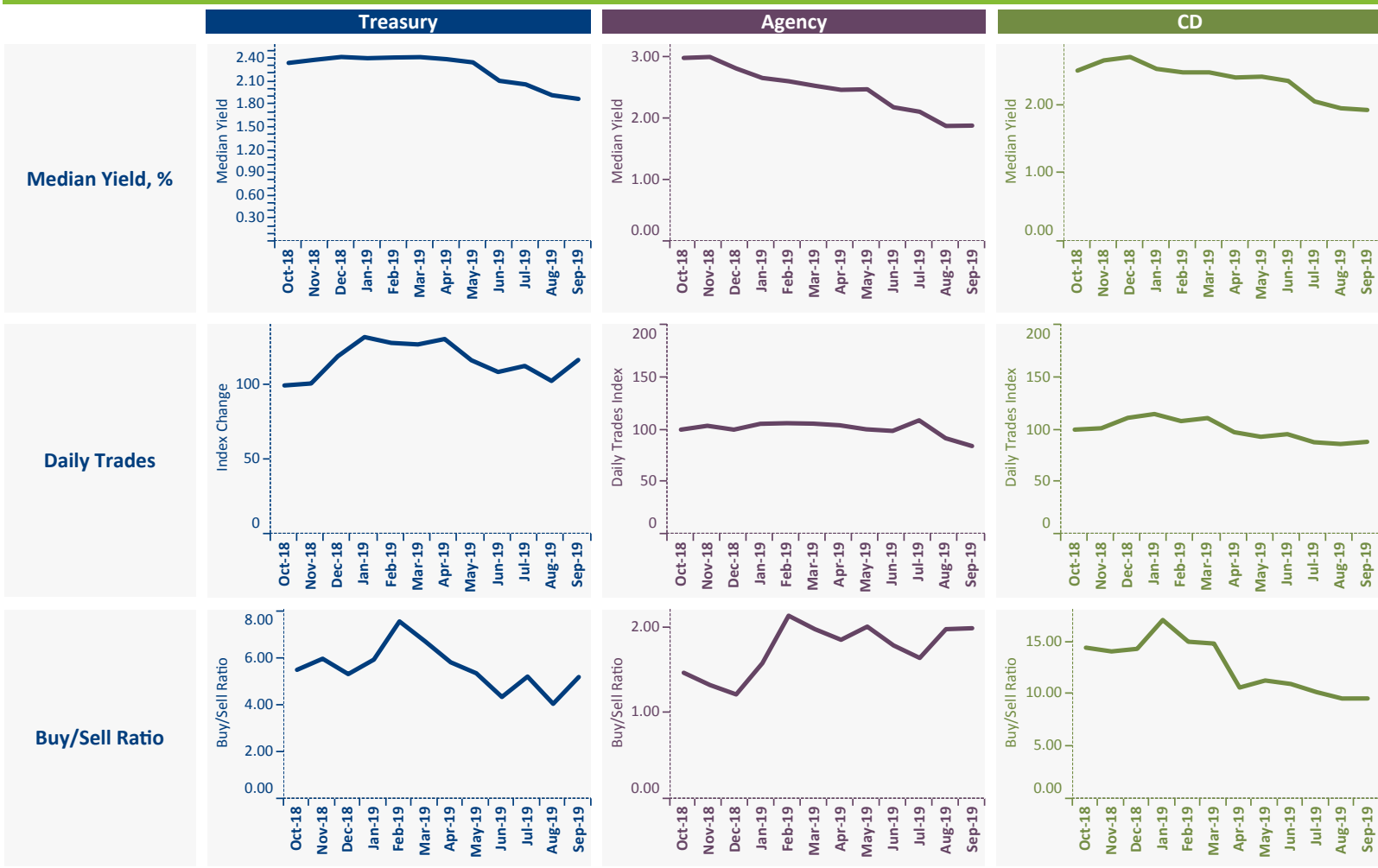
-The weights are based on transaction size.

-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

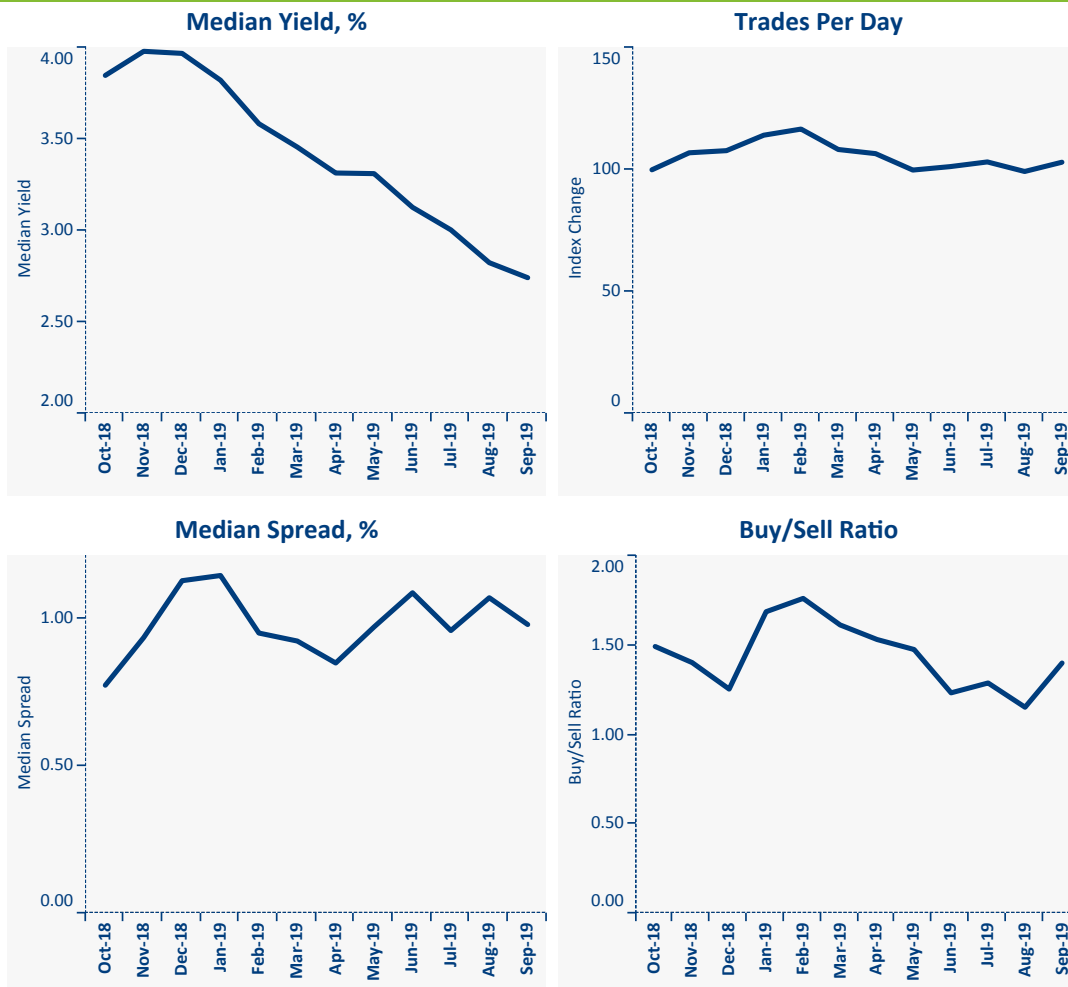
-Treasury and CD are based on transactions on the Tradeweb Direct Platform. Median yields are based on all customer buy transactions.

-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

September 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	936	3.1%	14,600	1.4	302	2.1	2.3	2.5	3.4	4.1
2	JPM	JP MORGAN CHASE	BBB	639	3.0%	14,216	1.2	304	2.0	2.2	2.4	2.7	3.3
3	BAC	BANK OF AMERICA	A	411	2.5%	12,062	1.3	258	2.0	2.2	2.5	2.8	3.7
4	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	BBB	322	2.4%	11,623	1.4	231	2.5	2.9	3.5	4.2	4.4
5	C	CITIGROUP	BBB	433	2.3%	10,872	1.3	250	2.1	2.2	2.6	3.1	3.3
6	GM	GENERAL MOTORS FINANCIAL COMPANY INC	BBB	102	1.8%	8,423	1.7	185	2.4	2.9	3.2	3.9	5.0
7	WFC	WELLS FARGO	A	223	1.7%	8,101	1.2	179	2.1	2.3	2.4	2.8	3.7
8	F	FORD	BBB	301	1.7%	8,042	1.5	190	3.0	3.4	3.9	5.0	5.7
9	MS	MORGAN STANLEY	BBB	926	1.5%	7,319	1.1	170	2.1	2.3	2.4	3.0	3.5
10	T	AT&T	BBB	114	1.5%	7,292	1.0	160	2.1	2.2	2.5	3.0	4.1
11	AAPL	APPLE INC	AA	53	1.3%	5,964	1.4	133	1.8	1.9	2.0	2.4	3.1
12	CVS	CVS CAREMARK CORP	BBB	44	1.0%	4,859	1.6	105	2.2	2.3	2.6	3.2	4.0
13	PEMX	PETROLEOS MEXICANOS	BBB	42	1.0%	4,846	1.3	161	2.8	3.7	4.5	6.1	6.9
14	VZ	VERIZON	BBB	128	0.9%	4,480	0.9	98		2.1	2.2	2.6	3.3
15	CMCS	COMCAST	A	58	0.9%	4,463	1.5	94	1.9	2.0	2.2	2.6	3.3
16	BRK	BERKSHIRE HATHAWAY	A	150	0.9%	4,415	1.3	119	1.9	2.0	2.2	2.7	3.5
17	DUK	DUKE ENERGY	BBB	103	0.9%	4,129	3.4	110	2.0	2.1	2.3	2.6	3.4
18	AXP	AMERICAN EXPRESS	BBB	38	0.7%	3,266	1.5	72	2.0	2.1	2.3	2.3	3.4
19	UNT	UNIT CORP	B	1	0.7%	3,252	14.1	31					
20	MSFT	MICROSOFT CORP	AAA	36	0.7%	3,193	1.1	74	1.8	1.8	1.8		2.7

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.

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

September 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	UNT	UNIT CORP	B	1	0.7%	3,252	3,037	215	14.1	31					
2	HPT	HOSPITALITY PPTYS TR	BBB	12	0.3%	1,377	1,229	148	8.3	34	2.6	3.2	4.0	4.7	
3	EQT	EQT CORP	BBB	11	0.4%	1,692	1,481	211	7.0	40	2.5	4.1	4.6	5.6	
4	BDX	BECTON DICKINSON & CO	BBB	19	0.3%	1,570	1,312	258	5.1	23	2.2	2.2	2.4	2.8	4.0
5	CAH	CARDINAL HEALTH INC	BBB	14	0.2%	1,143	946	197	4.8	27	2.1	2.3	2.8	3.3	4.6
6	CC	Null	BB	3	0.2%	1,154	930	224	4.2	21		5.2	6.8	7.3	
7	DFS	DISCOVER BK NEW CASTLE DEL	BB	69	0.2%	1,174	940	234	4.0	25		2.4	3.1	3.7	
8	X	UNITED STS STL CORP NEW	B	3	0.4%	1,833	1,419	414	3.4	33			8.6	8.9	
9	DUK	DUKE ENERGY	BBB	103	0.9%	4,129	3,186	943	3.4	110	2.0	2.1	2.3	2.6	3.4
10	FDX	FEDEX CORP	BBB	24	0.3%	1,588	1,221	367	3.3	34		2.2	2.4	3.0	4.0
11	BPL	BUCKEYE PARTNERS	BBB	9	0.4%	1,893	1,444	449	3.2	45	2.9	4.0	4.7	5.6	7.0
12	BBT	BB&T CORP SR MEDIUM TERM NTS BOOK ENTRY	A	31	0.4%	1,916	1,400	516	2.7	51	1.9	2.2	2.3	2.9	
13	WAG	WALGREEN CO	BBB	9	0.3%	1,551	1,108	443	2.5	30		2.2	2.6		4.3
14	TEVA	TEVA PHARMACEUTICAL FIN CO B V	BB	12	0.6%	2,794	1,989	805	2.5	53	4.0	7.1	8.7	9.1	8.6
15	LTD	LIMITED BRANDS INC	BB	10	0.3%	1,351	960	391	2.5	29		3.1	4.0	7.3	8.5
16	DB	DEUTSCHE BANK	BBB	89	0.4%	1,698	1,197	501	2.4	33	2.7	3.0	3.6		
17	ANTM	Null	A	24	0.3%	1,651	1,143	508	2.3	36	2.0	2.3	2.4	3.0	3.9
18	DOW	DOW CHEM CO	BBB	113	0.2%	1,160	796	364	2.2	28	2.2	2.2	2.5	3.5	4.0
19	AMZN	AMAZON COM INC	A	15	0.4%	1,863	1,268	595	2.1	34	1.8	1.8	1.9	2.3	2.8
20	CI	CIGNA CORP	BBB	33	0.4%	1,756	1,192	564	2.1	38	2.1	2.2	2.6	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

September 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	FTR	FRONTIER COMMUNICATIONS CORP	C	23	0.4%	2,135	510	1,625	0.31	25	109.1	41.9	29.8	8.1	17.8
2	MNK	Null	C	1	0.3%	1,470	362	1,108	0.33	5		58.5			
3	STX	SEAGATE HDD CAYMAN	BBB	6	0.4%	2,069	602	1,467	0.41	52		3.4	4.0	4.4	5.7
4	PTRB	PETROBRAS	BB	21	0.5%	2,286	777	1,509	0.51	90	2.8	3.1	3.5	4.5	5.6
5	XRX	XEROX CORP	BB	10	0.3%	1,468	535	933	0.57	28	3.1	3.6	4.0		6.7
6	BCS	BARCLAYS	N/R	526	0.3%	1,494	607	887	0.68	45	3.2	3.2	3.0	3.5	3.7
7	RDS	SHELL	AA	27	0.3%	1,515	685	830	0.83	37	2.1	1.9	2.1	2.3	3.2
8	PEP	PEPSICO	A	31	0.3%	1,572	729	843	0.86	36	2.0	1.9	2.0	2.2	3.1
9	VIA	VIACOM INC NEW	BBB	36	0.3%	1,372	640	732	0.87	32	2.5	2.6	2.7	3.2	4.3
10	VZ	VERIZON	BBB	128	0.9%	4,480	2,078	2,402	0.87	98		2.1	2.3	6.0	3.4
11	HPQ	HEWLETT PACKARD	BBB	19	0.4%	1,726	839	887	0.95	41	2.4	2.3		4.5	5.0
12	CS	CREDIT SUISSE	N/R	378	0.3%	1,355	671	684	0.98	28	2.9	2.5	2.4	3.6	3.8
13	T	AT&T	BBB	114	1.5%	7,292	3,632	3,660	0.99	160	2.2	2.2	2.5	3.0	4.1
14	BUD	ANHEUSER BUSCH INBEV WORLDWIDE INC	BBB	43	0.6%	2,789	1,397	1,392	1.00	64	2.1	2.1	2.3	2.7	3.6
15	CTL	CENTURYLINK	B	34	0.6%	2,706	1,359	1,347	1.01	63	3.5	3.5	4.6	6.5	7.9
16	RY	ROYAL BANK OF CANADA	AA	193	0.3%	1,484	754	730	1.03	37	2.1	2.0	2.3	3.4	
17	CSCO	CISCO	AA	16	0.3%	1,519	778	741	1.05	27	2.0	1.9	1.9		3.0
18	UTX	UNITED TECHNOLOGIES CORP	BBB	37	0.3%	1,392	712	680	1.05	33	2.2	2.1	2.2	2.5	3.3
19	MS	MORGAN STANLEY	BBB	926	1.5%	7,319	3,802	3,517	1.08	170	2.3	2.4	2.5	3.1	3.6
20	BNS	BANK NOVA SCOTIA B C	A	117	0.2%	1,144	597	547	1.09	27	2.1	2.0	2.3	3.8	

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

September 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	UNT	UNIT CORP	May-21	B	6.625	3,037	215	3,252	31	23.5	23.7	78.1	77.8
2	DUK	DUKE ENERGY	Dec-49	BBB	4.875	1,991	45	2,036	59			102.6	101.2
3	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	Null	BBB	5.000	1,818	843	2,661	38	5.3	5.3	95.0	94.3
4	GS	GOLDMAN SACHS	Null	BB	5.300	870	76	946	13	5.0	5.1	105.1	104.9
5	GM	GENERAL MOTORS FINANCIAL COMPANY INC	Null	BB	5.750	817	194	1,011	22	5.9	6.0	97.0	95.9
6	FET	Forum Energy Technologies, Inc.	Oct-21	B	6.250	786	31	817	7	15.5	16.4	84.5	83.2
7	GM	GENERAL MOTORS FINANCIAL COMPANY INC	May-23	BBB	4.250	773	89	862	13	2.9	3.0	104.5	104.3
8	BDX	BECTON DICKINSON & CO	Jun-24	BBB	3.363	648	31	679	6	2.4	2.4	104.0	103.9
9	X	UNITED STS STL CORP NEW	Aug-25	B	6.875	647	206	853	17	8.6	8.1	92.0	94.2
10	DVA	DAVITA HEALTHCARE PARTNERS INC	Jul-24	B	5.125	633	76	709	10	4.3	4.4	102.1	101.8
11	BBT	BB&T CORP SR MEDIUM TERM NTS BOOK ENTRY	Null	BBB	4.800	622	19	641	21			101.1	100.1
12	X	UNITED STS STL CORP NEW	Mar-26	B	6.250	607	115	722	12	9.0	9.5	86.8	84.6
13	DFS	DISCOVER BK NEW CASTLE DEL	Null	BB	5.500	596	70	666	14	5.4	5.5	101.5	100.8
14	CC	Null	May-25	BB	7.000	593	140	733	13	6.8	7.0	100.8	99.9
15	AMZN	AMAZON COM INC	Dec-25	A	5.200	584	43	627	5	2.1	2.1	117.5	117.1
16	JPM	JP MORGAN CHASE	Dec-49	BBB	4.625	558	134	692	19	4.6	4.7	99.8	98.2
17	MET	METLIFE	Jun-27	BBB	3.700	550	74	624	15	3.8	4.0	99.3	97.7
18	CMCS	COMCAST	Oct-28	A	4.150	550	141	691	8	2.6	2.6	112.1	111.9
19	TEVA	TEVA PHARMACEUTICAL FIN CO B V	Feb-36	BB	6.150	544	74	618	9	8.6	8.7	78.8	77.8
20	QCOM	QUALCOMM	May-27	A	3.250	518	57	575	10	2.5	2.6	105.3	104.3

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).

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Corporate Bonds: Top 20 Most Sold Issues

September 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	JPM	JP MORGAN CHASE	Null	BBB	5.300	409	1,346	1,755	20	5.2	5.2	101.3	101.1
2	MNK	Null	Apr-23	C	4.750	362	1,108	1,470	5	53.3	58.5	25.5	22.6
3	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	Null	BBB	5.000	1,818	843	2,661	38	5.3	5.3	95.0	94.3
4	GM	GENERAL MOTORS FINANCIAL COMPANY INC	Mar-21	BBB	4.200	136	759	895	14	2.5	2.6	102.3	102.2
5	STX	SEAGATE HDD CAYMAN	Jun-27	BBB	4.875	189	554	743	14	4.1	4.4	105.0	103.3
6	BAC	BANK OF AMERICA	Null	BBB	6.250	214	521	735	13	5.7	5.7	110.0	108.8
7	WDC	WESTERN DIGITAL CORP	Feb-26	BBB	4.750	410	495	905	14	4.1	4.2	103.6	103.1
8	XRX	XEROX CORP	May-21	BB	4.500	41	494	535	5	2.9	3.1	102.6	102.3
9	WFC	WELLS FARGO	Dec-48	BBB	7.980	283	399	682	7	5.8	5.8	101.3	101.2
10	F	FORD	Dec-26	BBB	4.346	481	397	878	23	4.3	4.4	100.2	99.5
11	SPN	SESI L L C	Dec-21	B	7.125	60	333	393	6	24.6	26.3	71.1	68.9
12	NFLX	NETFLIX INC	Mar-24	BB	5.750	13	321	334	3	3.2	3.3	110.5	110.2
13	JPM	JP MORGAN CHASE	Oct-26	A	2.950	298	313	611	5	2.5	2.6	102.5	102.4
14	AAPL	APPLE INC	May-23	AA	2.400	472	306	778	17	2.0	2.0	101.4	101.5
15	STX	SEAGATE HDD CAYMAN	Dec-34	BBB	5.750	234	295	529	16	5.5	5.7	102.5	100.6
16	VZ	VERIZON	Nov-24	BBB	3.500	267	287	554	7	2.2	2.3	105.8	105.7
17	VOD	VODAFONE	Apr-79	BB	7.000	39	282	321	8			115.0	113.9
18	T	AT&T	Feb-22	BBB	3.000	285	281	566	7	2.1	2.1	102.1	102.0
19	CTL	CENTURYLINK	Sep-39	B	7.600	296	276	572	14	7.7	7.8	99.4	97.8
20	T	AT&T	May-25	BBB	3.400	209	270	479	10	2.5	2.6	104.3	104.1

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

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