

Market Transparency Report

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

September 2017

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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 September 2017

	Median Yield (bps)	Daily Trade Volume	Buy/Sell Ratio
Agency	2	5.3%	0.2
CD	-3	-3.6%	-1.7
Corp	4	4.8%	0.1
Municipal	-10	-3.1%	-0.1
Treasury	2	-4.0%	0.4

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

Yield Matrix

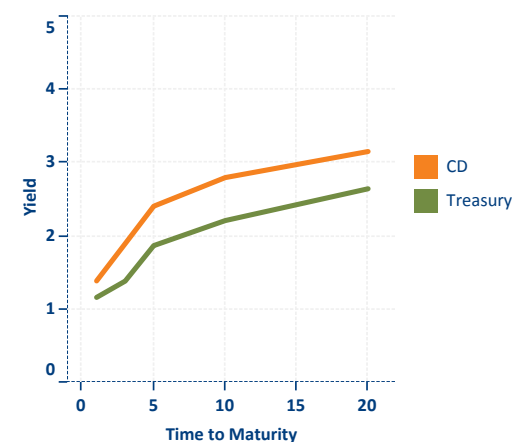
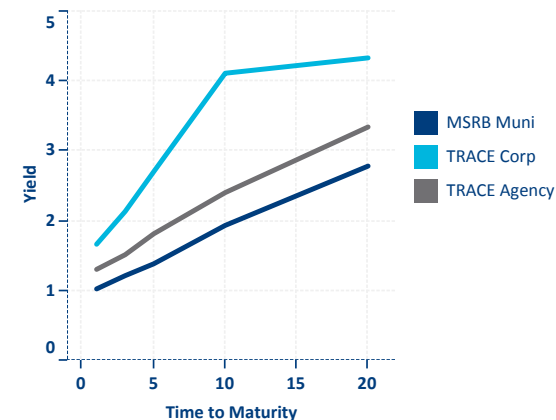
Average Yield, % for September 2017

Market	TTM					Median Maturity (Years)
	1	3	5	10	20	
MSRB Muni	1.0	1.2	1.4	1.9	2.8	13
TRACE Corp	1.7	2.1	2.7	4.1	4.3	4
TRACE Agency	1.3	1.5	1.8	2.4	3.4	3
CD	1.4	1.9	2.4	2.8	3.2	1
Treasury	1.2	1.4	1.9	2.2	2.7	1

Asset Class

Market	Category (Filtered)	Rating Key	1	3	5	10	20	Median Maturity (Years)
TRACE Corp	Financial	AA	1.5	1.9	2.0	3.0		4
		A	1.5	2.0	2.5	3.2	4.0	4
		BBB	1.8	2.3	2.8	3.5	4.2	5
		HY	2.2	2.7	3.6	8.8	6.9	2
	Non-Financial	AAA	1.7	2.0	3.0	3.6		3
		AA	1.4	1.7	2.5	3.3	3.7	2
		A	1.4	1.9	2.6	3.2	4.2	2
		BBB	1.6	2.5	3.1	4.8	5.6	8
		HY	10.2	5.0	4.1	8.5	10.3	9
MSRB Muni	GO	AAA	0.9	1.0	1.2	1.8	2.7	9
		AA	1.0	1.1	1.3	1.9	2.9	13
		A	1.1	1.4	1.6	2.2	3.0	9
		BBB	1.9	2.1	2.6	3.1	3.5	12
		HY	20.3	5.6	6.0	7.6	4.6	7
	Revenue	AAA	0.9	1.1	1.2	1.8	2.6	10
		AA	1.0	1.1	1.3	1.8	2.7	14
		A	1.1	1.3	1.5	2.0	2.7	16
		BBB	1.4	1.9	2.2	2.9	3.2	16
		HY	15.1	12.0	9.5	6.3	6.4	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.

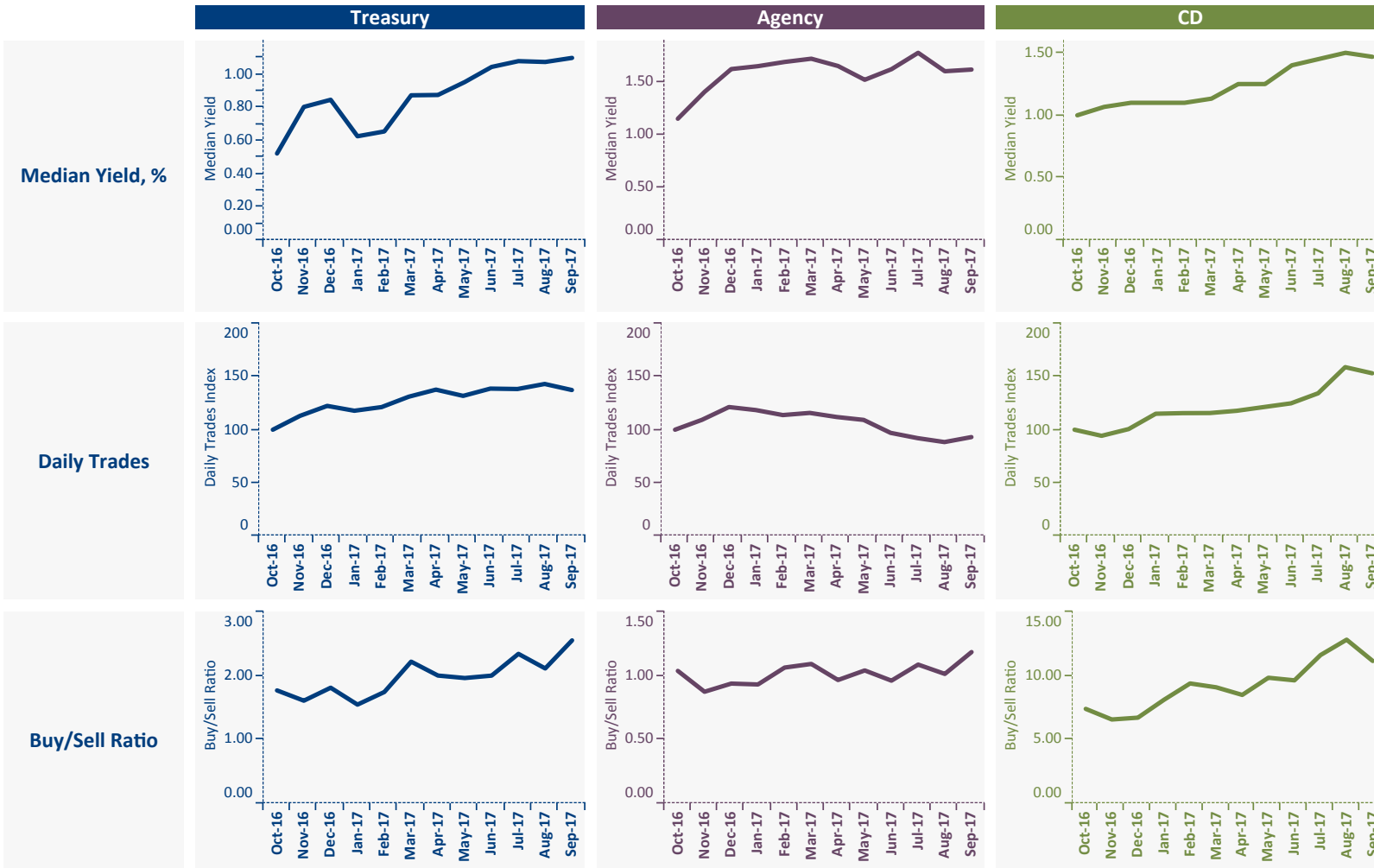
-The weights are based on transaction size.

-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



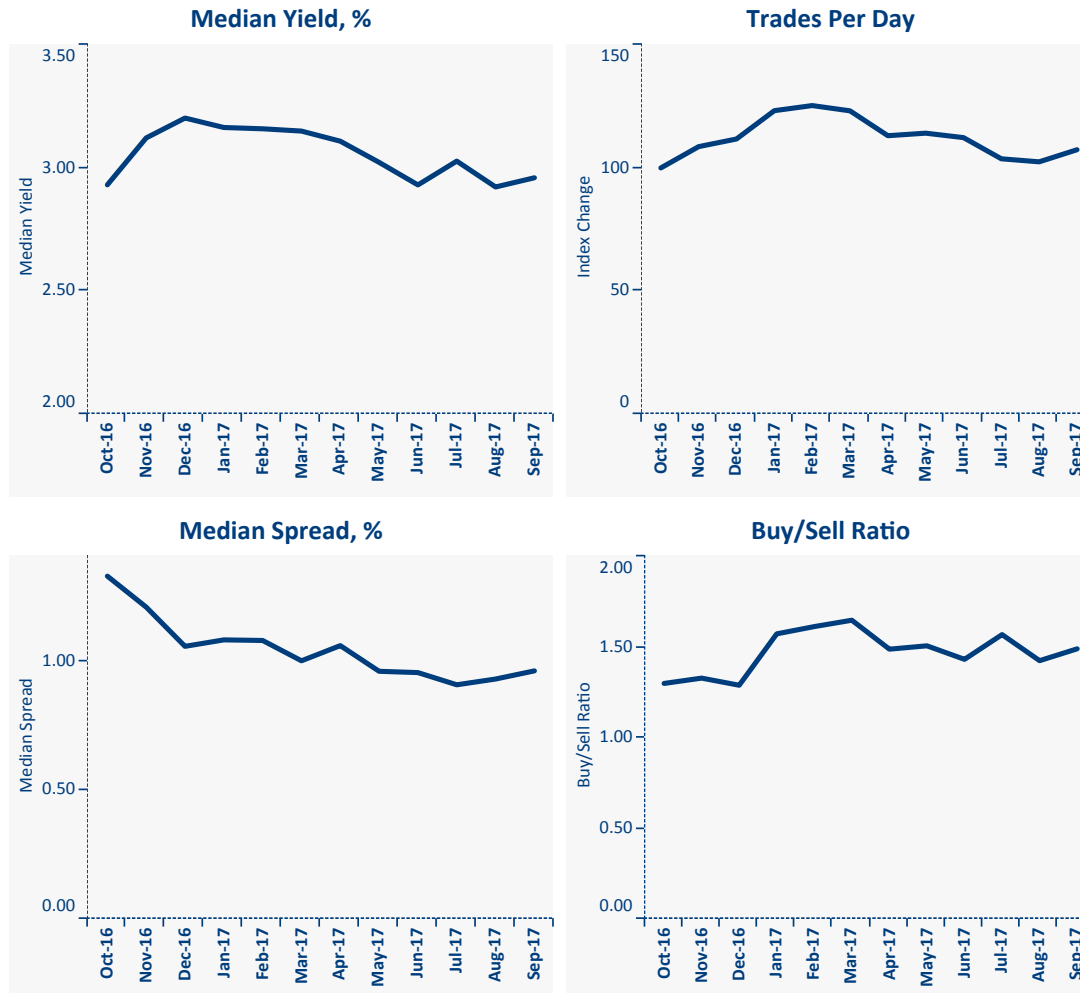
Daily Trades: First month = 100

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.

Corporate Bonds: Odd-Lot Customer Transaction Trend Summary



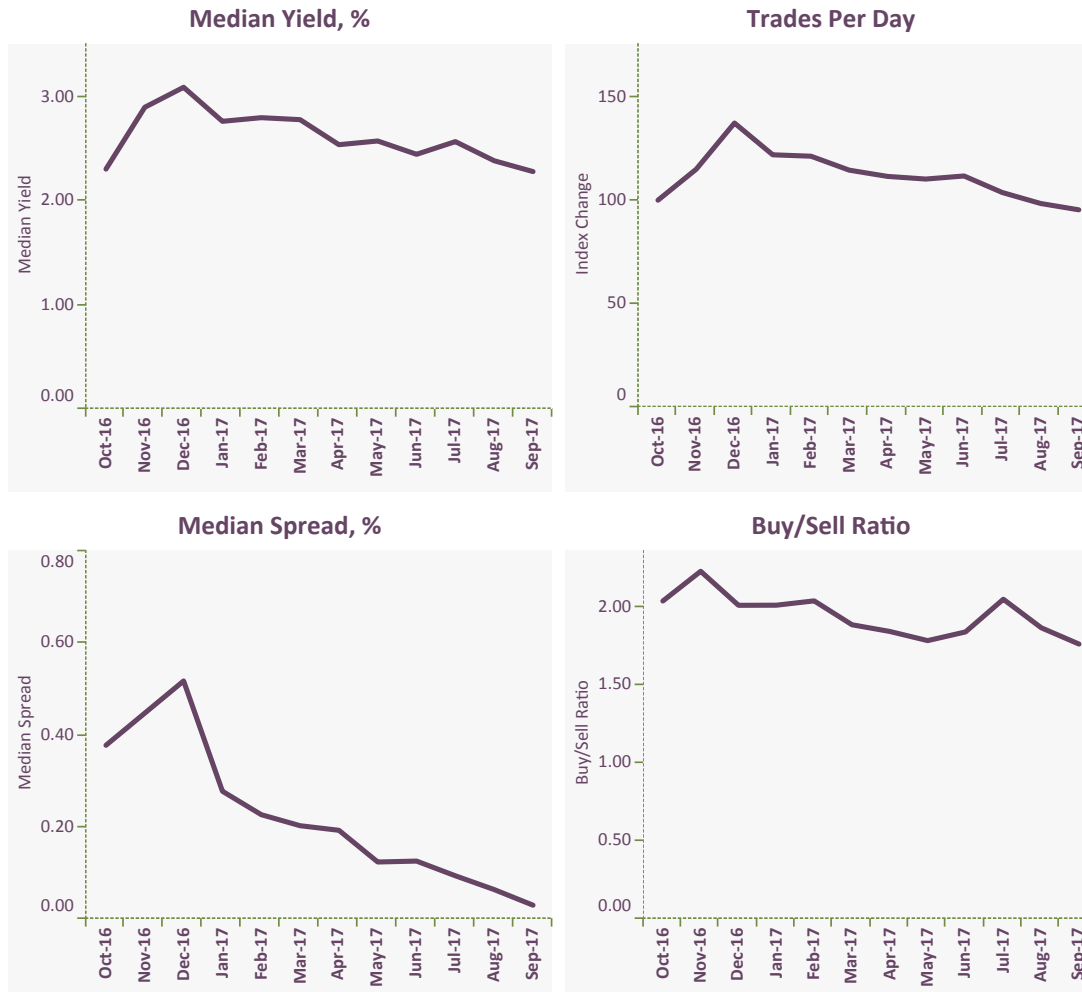
Daily Trades: First month = 100

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...

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 2017

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	BAC	BANK OF AMERICA	BBB	435	3.7%	14,905	1.6	250	1.7	2.2	2.7	3.3	4.0
2	GS	GOLDMAN SACHS	BBB	793	3.2%	12,839	1.4	258	1.7	2.2	2.6	3.4	4.1
3	JPM	JP MORGAN CHASE	A	468	2.9%	11,556	1.4	251	1.5	2.1	2.5	3.2	3.3
4	T	AT&T	BBB	89	2.6%	10,362	2.2	207	1.7	2.2	2.7	3.6	4.8
5	C	CITIGROUP	BBB	379	2.4%	9,819	1.7	217	1.7	2.2	2.6	3.5	3.3
6	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	AA	360	2.1%	8,357	1.1	160	1.5	1.8	2.2	3.2	3.8
7	WFC	WELLS FARGO	A	194	2.0%	8,136	1.7	175	1.7	2.2	2.5	3.2	3.7
8	MS	MORGAN STANLEY	BBB	780	1.9%	7,838	1.5	183	1.7	2.1	2.7	3.3	4.0
9	GM	GENERAL MOTORS FINANCIAL COMPANY INC	BBB	56	1.9%	7,694	7.1	187	1.8	2.4	3.0	3.8	5.0
10	VZ	VERIZON	BBB	91	1.6%	6,415	1.6	128	1.6	2.0	2.6	3.5	4.3
11	AAPL	APPLE INC	AA	53	1.2%	4,878	1.7	112	1.3	1.9	2.3	2.8	3.4
12	AXP	AMERICAN EXPRESS	BBB	37	1.0%	4,065	0.8	69	1.5	1.9	2.4	3.0	4.2
13	F	FORD	BBB	222	0.9%	3,814	2.3	80	1.7	2.5	2.9	3.8	
14	BRK	BERKSHIRE HATHAWAY	A	150	0.9%	3,733	1.4	88	1.4	1.9	2.3	3.3	3.9
15	PTRB	PETROBRAS	B	25	0.9%	3,719	1.0	136		3.7	4.6	5.9	6.7
16	BUD	ANHEUSER BUSCH INBEV WORLDWIDE INC	A	42	0.9%	3,550	1.4	69	1.7	2.0	2.4	3.1	3.8
17	HBC	HSBC	N/R	459	0.8%	3,118	0.8	57	1.7	2.3	2.5	3.5	4.0
18	CTL	CENTURYLINK	BB	27	0.8%	3,061	2.2	68		3.6	5.6	6.3	7.7
19	MSFT	MICROSOFT CORP	AAA	42	0.7%	2,968	1.7	68	1.3	1.7	2.1	2.7	3.4
20	CMCS	COMCAST	A	46	0.7%	2,695	1.3	53	1.5	1.8	2.4	3.0	3.7

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

September 2017

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	MCFH	HARLAND CLARKE HLDGS CORP	C	2	0.5%	1,931	1,870	61	30.7	21		9.8			
2	CHRC	BAYSIDE CMNTY CHURCH SARASOTA INC BRADEN	N/R	92	0.4%	1,471	1,401	70	20.0	11		4.7		6.0	7.0
3	JWN	NORDSTROM INC	BBB	6	0.3%	1,243	1,164	79	14.7	29		2.8	3.1	5.2	5.8
4	WYN	WYNDHAM WORLDWIDE CORP	BBB	8	0.2%	912	841	71	11.9	21	1.4	3.4	3.7	4.0	
5	NBR	NABORS INDS INC	BB	6	0.3%	1,045	928	117	7.9	24		4.8	5.8		
6	GM	GENERAL MOTORS FINANCIAL COMPANY INC	BBB	56	1.9%	7,694	6,738	956	7.1	187	1.8	2.4	3.0	3.8	5.0
7	VIA	VIACOM INC NEW	BBB	33	0.6%	2,566	2,168	398	5.5	61		2.7	2.8	3.4	5.8
8	XRX	XEROX CORP	BBB	12	0.4%	1,583	1,295	288	4.5	35	1.7	3.0	3.6		5.4
9	LTD	LIMITED BRANDS INC	BB	9	0.3%	1,166	926	240	3.9	26		3.4	4.0		7.1
10	BBBY	BED BATH & BEYOND INC	BBB	3	0.2%	897	689	208	3.3	22					5.2
11	STX	SEAGATE HDD CAYMAN	BBB	7	0.4%	1,611	1,224	387	3.2	41	2.0		4.4	5.4	6.2
12	RCII	RENT A CTR INC NEW	C	2	0.3%	1,036	783	253	3.1	7		8.4			
13	ETP	ENERGY TRANSFER PARTNERS L P	BBB	25	0.3%	1,223	918	305	3.0	24	1.8	2.5	3.2	3.9	5.0
14	M	MACYS RETAIL HLDGS INC	BBB	19	0.3%	1,360	1,013	347	2.9	31		3.2	3.7	5.7	5.7
15	STI	SUNTRUST BKS INC	BBB	22	0.3%	1,077	778	299	2.6	26	1.7	2.1	2.4	3.0	
16	PSEC	PROSPECT CAP CORP INTERNOTES BOOK ENTRY	BBB	183	0.3%	1,365	984	381	2.6	25	3.0	4.0	4.7	3.4	0.9
17	TEVA	TEVA PHARMACEUTICAL FIN CO B V	BBB	12	0.6%	2,537	1,828	709	2.6	50	1.8	2.9	3.4	4.1	5.2
18	ABT	ABBOTT LABS	BBB	23	0.2%	1,002	720	282	2.6	24	1.7	1.9	2.5	3.2	4.0
19	X	UNITED STS STL CORP NEW	B	5	0.3%	1,081	774	307	2.5	29		3.4		6.0	6.9
20	COF	CAPITAL ONE FINL CORP	BBB	29	0.4%	1,456	1,034	422	2.5	35	1.7	2.2	2.7	3.7	

Source: TRACE and Tradeweb Direct

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-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 2017

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	TLN	TALEN ENERGY CORP	B	6	0.3%	1,268	215	1,053	0.20	18			10.0	11.6	
2	FITB	FIFTH THIRD BANCORP	BBB	16	0.3%	1,225	290	935	0.31	15	1.8	2.1	2.5		4.4
3	PNC	PNC FDG CORP	A	40	0.3%	1,128	332	796	0.42	19	1.8	2.1	2.4	3.1	
4	BMO	BANK MONTREAL MEDIUM TERM SR NTS BOOK EN	N/R	48	0.3%	1,104	331	773	0.43	27	1.7	2.1	2.3		3.6
5	VALEF	Null	BBB	10	0.3%	1,047	313	734	0.43	41		2.5	3.3	4.5	5.7
6	TGT	TARGET CORP	A	16	0.2%	1,000	359	641	0.56	18	1.7	1.9	2.2	3.0	3.8
7	RIG	TRANSOCEAN INC	B	14	0.3%	1,244	468	776	0.60	27			7.1	7.1	9.0
8	FCX	FREEMONT-MCMORAN COPPER & GOLD INC	B	20	0.3%	1,140	440	700	0.63	30	2.5	3.2	4.2	5.6	5.9
9	DIS	DISNEY WALT CO NEW MEDIUM TERM NTS BOOK	A	32	0.3%	1,336	561	775	0.72	25	1.6	2.0	2.2	2.8	3.9
10	USB	U S BANCORP MEDIUM TERM NTS- BOOK ENTRY	A	25	0.4%	1,795	750	1,045	0.72	29	1.6	1.8	2.4	3.1	
11	GNW	GENWORTH	B	9	0.4%	1,730	728	1,002	0.73	33	5.7	8.2	8.2		8.3
12	CS	CREDIT SUISSE	N/R	341	0.4%	1,561	668	893	0.75	28	5.0	2.2	3.2	3.4	
13	WIN	WINDSTREAM CORP	B	6	0.3%	1,403	602	801	0.75	19		16.3	15.9		
14	AXP	AMERICAN EXPRESS	BBB	37	1.0%	4,065	1,753	2,312	0.76	69	1.6	2.0	2.4	3.1	4.5
15	RY	ROYAL BANK OF CANADA	AA	257	0.4%	1,691	728	963	0.76	37	1.7	2.0	2.1	3.6	3.9
16	HBC	HSBC	N/R	459	0.8%	3,118	1,359	1,759	0.77	57	1.8	2.3	2.6	3.8	4.0
17	MET	METLIFE	A	23	0.5%	2,066	903	1,163	0.78	35	1.8	2.2	2.7	2.9	3.9
18	PBR	PETROBRAS	B	13	0.3%	1,011	442	569	0.78	38		4.2	4.7	5.8	
19	XOM	XTO ENERGY INC	AA	23	0.2%	934	424	510	0.83	20	1.6	1.9	2.2	2.7	
20	DUK	DUKE ENERGY	A	92	0.3%	1,275	581	694	0.84	25	1.7	2.2	2.6	3.2	3.9

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.

Corporate Bonds: Top 20 Most Bought Issues

September 2017

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	GM	GENERAL MOTORS FINANCIAL COMPANY INC	Null	BB	5.750	3,431	36	3,467	95			104.0	103.3
2	BAC	BANK OF AMERICA	Oct-25	BBB	3.093	2,515	15	2,530	16			100.0	99.7
3	MCFH	HARLAND CLARKE HLDGS CORP	Feb-21	C	5.750	1,680	42	1,722	19	9.8	9.6	88.5	89.0
4	PBI	PITNEY BOWES	Mar-24	BBB	4.625	1,267	391	1,658	30	4.9	5.2	98.6	96.9
5	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	Null	A	5.000	1,007	580	1,587	18			106.0	105.4
6	MS	MORGAN STANLEY	Apr-24	BBB	3.875	901	85	986	11	2.9	3.1	105.7	104.9
7	RCII	RENT A CTR INC NEW	Nov-20	C	6.625	774	226	1,000	6	8.4	8.5	95.0	95.0
8	TSLA	TESLA MTRS INC	Aug-25	N/R	5.300	737	53	790	26			99.4	98.6
9	PTRB	PETROBRAS	Jan-28	N/R	5.999	666	66	732	30			100.2	99.4
10	T	AT&T	May-25	BBB	3.400	612	157	769	15	3.4	3.5	99.8	99.2
11	WFC	WELLS FARGO	Null	BBB	5.875	580	142	722	12			111.6	110.7
12	T	AT&T	Aug-27	BBB	3.900	565	73	638	11	3.8	3.8	101.1	100.5
13	X	UNITED STS STL CORP NEW	Aug-25	B	6.875	530	32	562	16	6.0	6.3	103.8	102.3
14	OPY	OPPENHEIMER HLDGS INC	Jul-22	B	6.750	480		480	6	6.1		102.0	
15	WYN	WYNDHAM WORLDWIDE CORP	Mar-22	BBB	4.250	469	25	494	10	3.7	3.9	102.1	101.2
16	C	CITIGROUP	Jul-18	BBB	2.150	431	27	458	7	1.8	1.8	100.3	100.3
17	GM	GENERAL MOTORS FINANCIAL COMPANY INC	Oct-23	BBB	4.875	430	37	467	5	3.4	3.4	107.9	107.8
18	STX	SEAGATE HDD CAYMAN	Dec-34	BBB	5.750	427	109	536	13	6.2	6.5	95.2	92.1
19	CTL	CENTURYLINK	Mar-22	BB	5.800	409	84	493	10	5.7	5.9	100.3	99.6
20	TEVA	TEVA PHARMACEUTICAL FIN CO B V	Oct-26	BBB	3.150	399	55	454	10	4.1	4.2	92.7	92.0

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

September 2017

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	TLN	TALAN ENERGY CORP	Dec-21	B	4.600	71	959	1,030	14		10.0	82.0	80.4
2	AXP	AMERICAN EXPRESS	Null	BBB	5.200	168	791	959	11			103.3	103.0
3	BAC	BANK OF AMERICA	Null	BB	8.125	133	783	916	9			103.3	102.9
4	FITB	FIFTH THIRD BANCORP	Null	BBB	4.900	102	717	819	6			101.8	101.4
5	HBC	HSBC	Jan-21	BBB	6.676	52	606	658	8	2.2	2.3	113.8	113.9
6	PTRB	PETROBRAS	Jan-21	B	5.375	94	606	700	19	3.7	4.1	105.3	104.1
7	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	Null	A	5.000	1,007	580	1,587	18			106.0	105.4
8	VZ	VERIZON	Sep-23	BBB	5.150	284	524	808	12	2.9	3.0	112.1	111.5
9	MET	METLIFE	Sep-23	A	4.368	167	483	650	4	2.6	2.7	109.5	109.1
10	T	AT&T	Feb-18	BBB	5.500	131	476	607	7	1.5	1.7	101.4	101.3
11	TOY	TOYS R US INC	Oct-18	D	7.375	285	448	733	5	52.4	43.9	32.2	42.4
12	CIT	CIT GROUP INC NEW	Aug-22	BB	5.000	21	447	468	5			108.6	107.9
13	PBI	PITNEY BOWES	Mar-24	BBB	4.625	1,267	391	1,658	30	4.9	5.2	98.6	96.9
14	PBR	PETROBRAS	May-23	B	4.375	111	179	290	11	4.6	4.7	99.0	98.6
15	PTRB	PETROBRAS	May-23	B	4.375	165	209	374	14	4.6	4.8	98.8	98.0
16	TGT	TARGET CORP	Jul-20	A	3.875	32	381	413	4	1.8	1.9	105.7	105.4
17	DVA	DAVITA HEALTHCARE PARTNERS INC	Aug-22	B	5.750	70	367	437	6	4.2	4.4	103.2	103.0
18	USB	U S BANCORP MEDIUM TERM NTS- BOOK ENTRY	Oct-19	AA	2.125	1	357	358	3	1.8	1.8	100.6	100.6
19	BUD	ANHEUSER BUSCH INBEV WORLDWIDE INC	Feb-19	A	2.150	336	351	687	4	1.7	1.7	100.7	100.6
20	DIS	DISNEY WALT CO NEW MEDIUM TERM NTS BOOK	May-19	A	1.850	20	328	348	3	1.6	1.7	100.4	100.3

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).

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.)

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