

Market Transparency Report

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

November 2017

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.

Page Reference

3. Market Commentary
4. Yield Matrix
5. Treasury, Agency, CD Transaction Trend Summary
6. Corporate Bonds: Odd-Lot Customer Transaction Trend Summary
7. Municipal Bonds: Odd-Lot Customer Transaction Trend Summary
8. Corporate Bonds: Top 20 Most Active Issuers
9. Corporate Bonds: Top 20 Issuers with Highest Buy/Sell Ratio
10. Corporate Bonds: Top 20 Issuers with Lowest Buy/Sell Ratio
11. Corporate Bonds: Top 20 Most Bought Issues
12. Corporate Bonds: Top 20 Most Sold Issues
13. Appendix
14. Disclosures

Market Commentary

Monthly Change Table for November 2017

	Median Yield (bps)	Daily Trade Volume	Buy/Sell Ratio
Agency	14	-5.8%	-0.1
CD	10	-4.7%	-1.4
Corp	8	-0.7%	0.0
Municipal	-1	0.1%	0.1
Treasury	16	10.2%	0.3

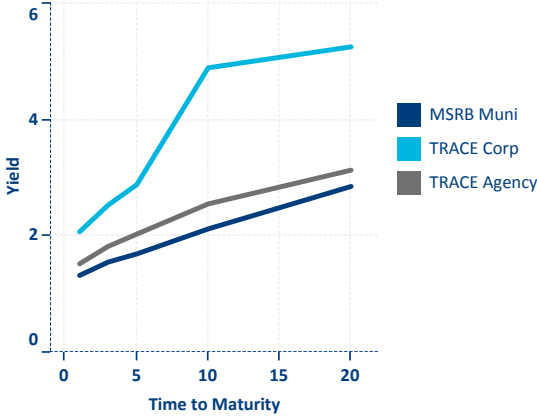
For monthly security trend data, see slides 5, 6 and 7

Yield Matrix

Average Yield, % for November 2017

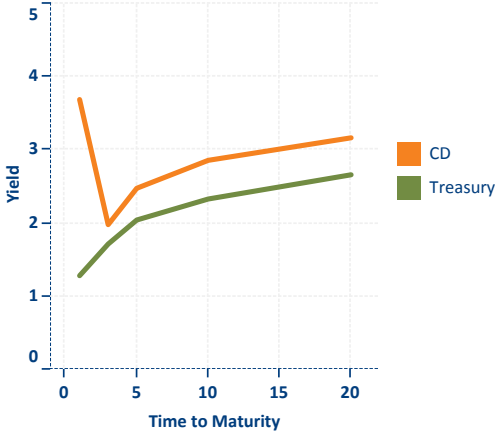
Market	TTM					Median Maturity (Years)
	1	3	5	10	20	
MSRB Muni	1.3	1.6	1.7	2.1	2.9	12
TRACE Corp	2.1	2.5	2.9	4.9	5.3	4
TRACE Agency	1.5	1.8	2.0	2.6	3.1	3
CD	1.5	2.0	2.5	2.9	3.2	1
Treasury	1.3	1.7	2.0	2.3	2.7	1

Average Yield, %



Asset Class

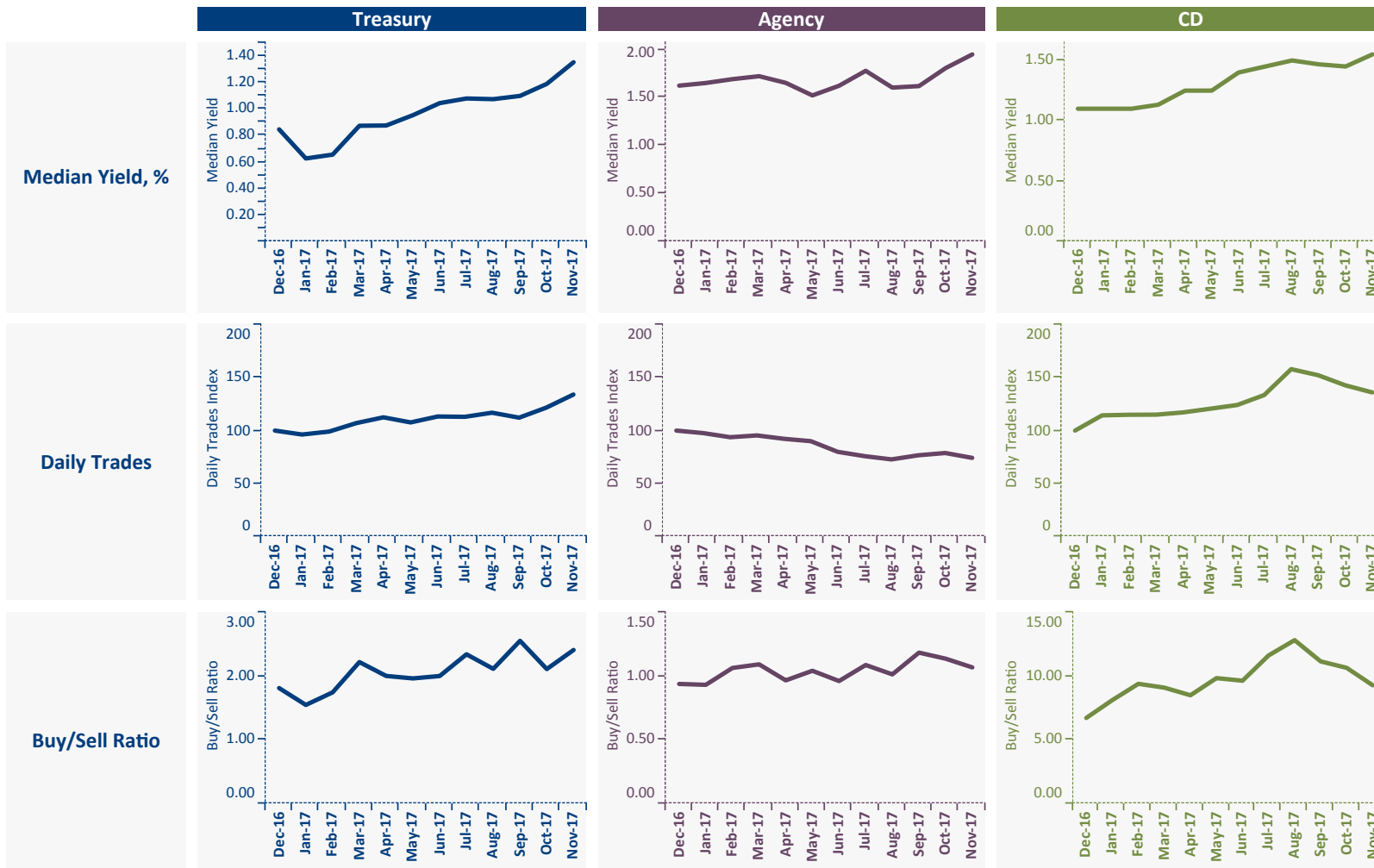
Market	Category (Filtered)	Rating Key	TTM					Median Maturity (Years)
			1	3	5	10	20	
TRACE Corp	Financial	AA	1.8	2.1	2.4	3.1		4
		A	1.8	2.2	2.7	3.2	3.9	4
		BBB	2.1	2.6	3.0	3.6	4.4	6
		HY	2.1	2.9	3.8	6.6	6.9	10
	Non-Financial	AAA	1.7	2.0	2.0	2.9	3.5	3
		AA	1.6	2.1	3.3	3.0		2
		A	1.5	2.3	2.9	3.1	4.0	2
		BBB	1.7	2.6	3.1	4.2	4.3	8
		HY	43.6	8.7	4.5	10.8	12.7	9
MSRB Muni	GO	AAA	1.2	1.4	1.6	2.0	2.8	8
		AA	1.3	1.4	1.6	2.1	2.8	11
		A	1.4	1.8	1.8	2.3	3.0	9
		BBB	2.0	2.3	2.6	3.5	3.8	12
	Revenue	HY	5.1	4.4	5.1	4.9	3.7	8
		AAA	1.3	1.4	1.6	2.0	2.7	9
		AA	1.3	1.5	1.6	2.0	2.7	13
		A	1.4	1.6	1.9	2.2	2.8	15
		BBB	1.6	2.1	2.3	2.7	3.4	17
		HY	15.6	16.6	9.3	6.6	7.0	13



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



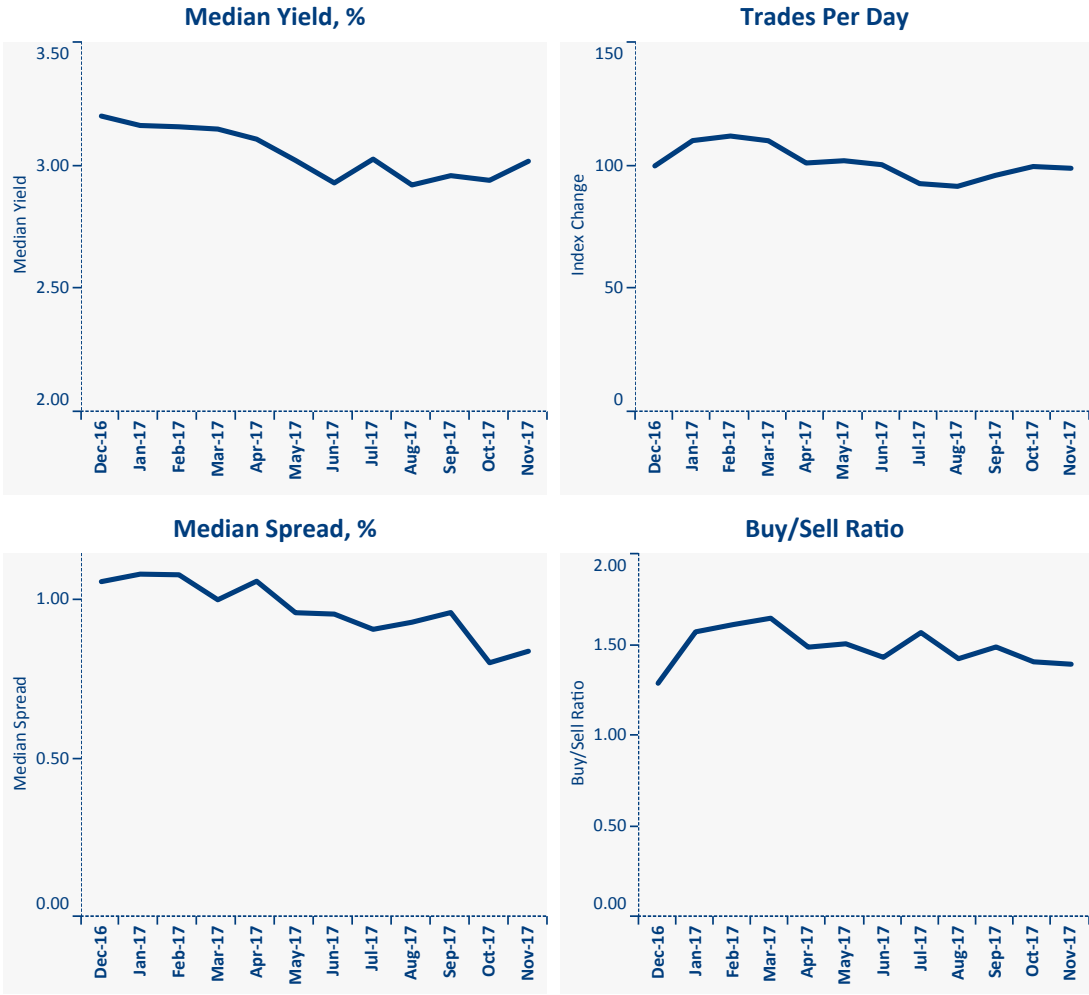
Daily Trades: First month = 100

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

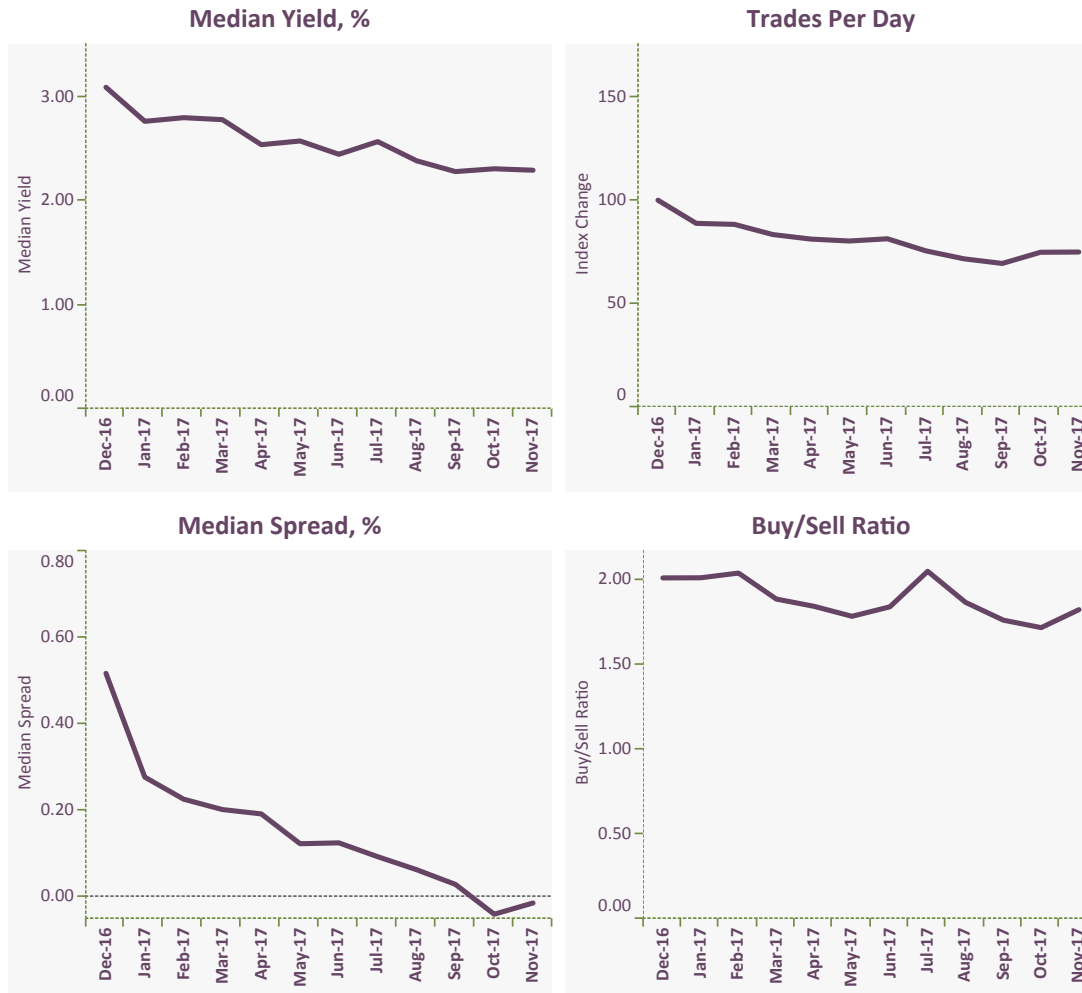


Daily Trades: First month = 100
 Source: TRACE and Tradeweb Direct
 -Based on odd-lot customer transactions (<100M) reported in TRACE.
 -Median yields and spreads are based on all odd-lot customer buy transactions...

©2017 Tradeweb Markets LLC. All rights reserved. The information contained herein: (1) is confidential and proprietary; (2) may not be copied or redistributed; (3) and is not offered as investment, tax or legal advice or an offer to buy or sell securities.



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.

©2017 Tradeweb Markets LLC. All rights reserved. The information contained herein: (1) is confidential and proprietary; (2) may not be copied or redistributed; (3) and is not offered as investment, tax or legal advice or an offer to buy or sell securities.



Corporate Bonds: Top 20 Most Active Issuers

November 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	GS	GOLDMAN SACHS	BBB	811	3.3%	14,241	1.3	293	1.9	2.4	2.8	3.5	4.2
2	JPM	JP MORGAN CHASE	A	491	2.8%	12,281	1.3	254	1.8	2.3	2.7	3.2	3.8
3	BAC	BANK OF AMERICA	BBB	430	2.6%	11,374	1.2	214	1.9	2.4	2.8	3.3	4.0
4	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	AA	366	2.5%	11,027	1.0	209	1.7	2.3	2.7	3.5	3.9
5	T	AT&T	BBB	92	2.5%	11,011	1.8	216	1.9	2.4	2.8	3.8	4.7
6	C	CITIGROUP	BBB	375	2.5%	10,895	1.7	236	1.9	2.4	2.8	3.5	3.6
7	WFC	WELLS FARGO	A	202	1.9%	8,225	1.5	175	1.9	2.3	2.7	3.4	3.0
8	MS	MORGAN STANLEY	BBB	634	1.8%	7,668	1.1	177	2.0	2.5	3.0	3.4	4.0
9	VZ	VERIZON	BBB	101	1.5%	6,660	1.8	142		2.4	2.7	3.5	4.3
10	AAPL	APPLE INC	AA	59	1.5%	6,453	2.0	147	1.5	2.2	2.5	3.0	3.4
11	TEVA	TEVA PHARMACEUTICAL FIN CO B V	BBB	12	1.3%	5,502	2.2	112	2.4	4.7	5.1	5.2	6.3
12	CTL	CENTURYLINK	B	29	1.2%	5,264	0.9	106		5.9	6.1	7.6	8.2
13	BUD	ANHEUSER BUSCH INBEV WORLDWIDE INC	A	41	1.1%	4,793	1.9	81	1.9	2.2	2.6	3.2	3.9
14	GM	GENERAL MOTORS FINANCIAL COMPANY INC	BBB	58	1.0%	4,477	3.2	114	2.0	2.6	3.1	3.9	4.7
15	BRK	BERKSHIRE HATHAWAY	A	154	1.0%	4,213	1.4	102	1.6	2.1	2.5	3.3	3.9
16	FTR	FRONTIER COMMUNICATIONS CORP	B	21	0.9%	3,939	0.5	60	8.7	15.5	16.0	16.1	13.9
17	MSFT	MICROSOFT CORP	AAA	42	0.8%	3,661	1.9	91	1.5	1.9	2.3	2.8	3.4
18	ORCL	ORACLE CORP	AA	33	0.8%	3,484	2.0	73	1.8	2.3	2.5	3.1	3.6
19	PTRB	PETROBRAS	BB	24	0.7%	3,156	1.2	119			4.5	5.7	6.7
20	AXP	AMERICAN EXPRESS	BBB	36	0.7%	3,089	1.4	65	1.6	2.2	2.6	3.2	4.2

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

November 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	ASCMA	Null	C	1	0.3%	1,295	1,181	114	10.4	13		17.1			
2	DFS	DISCOVER BK NEW CASTLE DEL	BB	58	0.2%	1,002	893	109	8.2	26	1.4	2.7	3.1	3.7	
3	SCHW	SCHWAB CHARLES CORP NEW	BBB	10	0.2%	1,068	950	118	8.1	24	1.6	2.1	2.6	3.0	
4	CHRC	BAYSIDE CMNTY CHURCH SARASOTA INC BRADEN	N/R	140	0.3%	1,111	982	129	7.6	9	5.1				7.0
5	MAT	MATTEL INC	BB	7	0.3%	1,207	1,046	161	6.5	20	3.0	3.9	4.6		6.0
6	RAD	RITE AID CORP	C	5	0.3%	1,362	1,180	182	6.5	18		7.0		10.5	
7	CBL	CBL & ASSOCS LTD PARTNERSHIP	BBB	3	0.3%	1,290	1,071	219	4.9	26				6.6	
8	STI	SUNTRUST BKS INC	BBB	26	0.5%	2,203	1,810	393	4.6	45	1.8	2.2	2.6	3.4	
9	XRX	XEROX CORP	BBB	13	0.5%	2,224	1,824	400	4.6	49	1.7	3.3	4.0		6.3
10	MCFH	HARLAND CLARKE HLDGS CORP	C	3	0.2%	1,052	856	196	4.4	12		14.3			
11	QCOM	QUALCOMM	A	16	0.7%	3,060	2,468	592	4.2	71	1.7	2.4	3.0	3.4	4.1
12	M	MACYS RETAIL HLDGS INC	BBB	19	0.5%	2,077	1,649	428	3.9	46		3.1	4.6	6.0	6.3
13	BDX	BECTON DICKINSON & CO	BBB	17	0.2%	972	767	205	3.7	20		2.3	2.9	3.6	4.1
14	ICON	ICONIX BRAND GROUP INC	N/R	1	0.5%	2,036	1,566	470	3.3	22					
15	VIA	VIACOM INC NEW	BBB	34	0.6%	2,625	2,005	620	3.2	59		2.7	3.0	3.6	5.7
16	CELG	CELGENE CORP	BBB	18	0.3%	1,153	880	273	3.2	20	1.7	2.3	2.8	3.3	4.5
17	GM	GENERAL MOTORS FINANCIAL COMPANY INC	BBB	58	1.0%	4,477	3,407	1,070	3.2	114	2.0	2.6	3.1	3.9	4.7
18	JCP	JC PENNEY	B	9	0.3%	1,103	800	303	2.6	13		10.2		10.3	12.7
19	PM	PHILIP MORRIS INTL INC	A	31	0.3%	1,236	878	358	2.5	28	1.6	2.2	2.6	3.0	4.0
20	WAG	WALGREEN CO	BBB	10	0.3%	1,253	884	369	2.4	25	2.0	2.2	2.9	3.6	4.2

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

November 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	SHLD	SEARS HLDGS CORP	C	8	0.3%	1,480	252	1,228	0.21	13	38.8	42.5		20.4	
2	BMO	BANK MONTREAL MEDIUM TERM SR NTS BOOK EN	N/R	43	0.3%	1,298	369	929	0.40	32	2.0	2.4	2.7		3.7
3	FTR	FRONTIER COMMUNICATIONS CORP	B	21	0.9%	3,939	1,226	2,713	0.45	60		16.3	16.6	16.4	14.4
4	SFTBF	SPRINT	B	16	0.2%	1,046	330	716	0.46	26	3.5	5.2	5.9	6.7	
5	GNW	GENWORTH	B	9	0.3%	1,424	609	815	0.75	25	7.2	8.5	8.3		8.5
6	EDP	ENTERPRISE PRODS OPER LLC	BBB	32	0.3%	1,103	478	625	0.76	23	2.2	2.4	2.8	3.4	4.4
7	RY	ROYAL BANK OF CANADA	AA	236	0.3%	1,492	656	836	0.78	30	2.0	2.3	2.4	3.6	3.8
8	RIG	TRANSOCEAN INC	B	13	0.2%	992	443	549	0.81	21		5.4	6.6	7.4	9.0
9	CTL	CENTURYLINK	B	29	1.2%	5,264	2,418	2,846	0.85	106		5.8	6.0	8.6	8.8
10	CS	CREDIT SUISSE	N/R	370	0.4%	1,853	866	987	0.88	38	23.0	2.6	3.1	3.6	
11	DELL	DELL	BB	12	0.3%	1,417	678	739	0.92	33	2.8	3.4	4.1	5.6	6.3
12	MET	METLIFE	A	23	0.4%	1,567	749	818	0.92	31	2.0	2.3	2.8	3.0	3.9
13	MCD	MCDONALDS	BBB	24	0.3%	1,386	666	720	0.93	28	2.0	2.2	2.5	3.1	4.0
14	BCS	BARCLAYS	N/R	411	0.5%	2,089	1,049	1,040	1.01	48	2.9	2.3	3.4	3.9	4.0
15	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	AA	366	2.5%	11,027	5,565	5,462	1.02	209	2.2	2.4	2.9	3.7	4.0
16	KMI	KINDER MORGAN ENERGY PARTNERS L P	BBB	68	0.4%	1,550	789	761	1.04	37	2.3	2.7	3.1	3.7	5.1
17	HBC	HSBC	N/R	482	0.7%	2,930	1,502	1,428	1.05	66	1.9	2.6	2.7	3.6	3.9
18	PRU	PRUDENTIAL	A	44	0.3%	1,170	599	571	1.05	25	1.9	2.3		4.1	4.0
19	DUK	DUKE ENERGY	BBB	92	0.3%	1,143	593	550	1.08	27	2.1	2.3	2.6	3.3	3.8
20	BP	BP	A	43	0.5%	2,124	1,109	1,015	1.09	42	1.9	2.3	2.6	3.2	

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

November 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	ICON	ICONIX BRAND GROUP INC	Mar-18	N/R	1.500	1,566	470	2,036	22	55.3	61.2	84.9	83.5
2	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	Null	A	5.000	1,392	1,034	2,426	31			103.9	103.4
3	ASCMA	Null	Apr-20	C	9.125	1,181	114	1,295	13	17.1	17.4	84.9	84.4
4	TEVA	TEVA PHARMACEUTICAL FIN CO B V	Feb-36	BBB	6.150	1,001	49	1,050	24	6.3	6.4	98.9	97.7
5	RAD	RITE AID CORP	Feb-27	C	7.700	921	80	1,001	11	10.5	10.3	83.7	84.9
6	PBI	PITNEY BOWES	Mar-24	BBB	4.625	904	677	1,581	27	6.6	7.4	90.0	86.2
7	STI	SUNTRUST BKS INC	Null	BBB	5.125	896	32	928	22			100.6	98.1
8	GS	GOLDMAN SACHS	Null	BB	5.000	800	26	826	19			99.9	99.6
9	T	AT&T	Mar-27	BBB	4.250	734	93	827	14	3.9	3.9	102.4	102.3
10	GM	GENERAL MOTORS FINANCIAL COMPANY INC	Null	BB	5.750	664	28	692	20			105.3	103.8
11	OII	Null	Nov-24	BBB	4.650	653	11	664	10	5.0	5.1	98.2	97.5
12	BUD	ANHEUSER BUSCH INBEV WORLDWIDE INC	Feb-26	A	3.650	628	261	889	14	3.2	3.3	103.4	102.7
13	C	CITIGROUP	Sep-18	BBB	2.500	595	72	667	14	1.9	2.0	100.5	100.4
14	MCFH	HARLAND CLARKE HLDGS CORP	Feb-21	C	5.750	591	148	739	8	14.3	15.0	78.5	76.9
15	MAT	MATTEL INC	Mar-23	BB	3.150	547	26	573	7	4.6	4.8	93.1	92.2
16	JPM	JP MORGAN CHASE	Null	BBB	6.750	537	378	915	8			115.4	113.9
17	TSLA	TESLA MTRS INC	Aug-25	N/R	5.300	532	60	592	18			96.5	94.7
18	HPQ	HEWLETT PACKARD	Oct-25	BBB	4.900	530	88	618	13	4.0	4.1	105.8	104.9
19	T	AT&T	May-25	BBB	3.400	529	207	736	15	3.5	3.7	99.2	98.3
20	CBL	CBL & ASSOCS LTD PARTNERSHIP	Dec-26	BBB	5.950	528	59	587	13	6.6	6.9	95.7	93.6

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).

Corporate Bonds: Top 20 Most Sold Issues

November 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	SHLD	SEARS HLDGS CORP	Oct-18	C	6.625	201	1,104	1,305	12	27.5	38.8	83.8	77.3
2	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	Null	A	5.000	1,392	1,034	2,426	31			103.9	103.4
3	PBI	PITNEY BOWES	Mar-24	BBB	4.625	904	677	1,581	27	6.6	7.4	90.0	86.2
4	FTR	FRONTIER COMMUNICATIONS CORP	Apr-24	B	7.625	25	577	602	5	14.7	14.0	71.3	73.5
5	TEVA	TEVA PHARMACEUTICAL FIN CO B V	Feb-26	BBB	0.250	39	514	553	2	2.3	2.3	85.0	84.8
6	ICON	ICONIX BRAND GROUP INC	Mar-18	N/R	1.500	1,566	470	2,036	22	55.3	61.2	84.9	83.5
7	BUD	ANHEUSER BUSCH INBEV WORLDWIDE INC	Feb-19	A	2.150	374	387	761	3	1.9	1.9	100.3	100.2
8	JPM	JP MORGAN CHASE	Null	BBB	6.750	537	378	915	8			115.4	113.9
9	BMO	BANK MONTREAL MEDIUM TERM SR NTS BOOK EN	Jan-18	N/R	0.000	5	374	379	9			103.0	103.3
10	FTR	FRONTIER COMMUNICATIONS CORP	Sep-21	B	6.250	127	360	487	6		16.4	75.0	73.9
11	T	AT&T	Feb-22	BBB	3.000	412	331	743	7	2.7	2.9	101.1	100.5
12	CTL	CENTURYLINK	Sep-39	B	7.600	190	306	496	10	9.1	9.5	85.5	82.9
13	PTRB	PETROBRAS	May-23	BB	4.375	213	302	515	18	4.5	4.6	99.5	98.8
14	QCOM	QUALCOMM	May-22	A	3.000	514	299	813	16	3.0	3.0	100.2	100.0
15	AAPL	APPLE INC	May-23	AA	2.400	389	296	685	15	2.5	2.6	99.3	99.0
16	MS	MORGAN STANLEY	Jul-21	BBB	5.500	98	283	381	5	2.6	2.6	110.2	110.3
17	JPM	JP MORGAN CHASE	Null	BBB	7.900	173	282	455	11			102.3	101.8
18	VZ	VERIZON	Sep-23	BBB	5.150	245	281	526	11	3.0	3.1	111.2	110.8
19	FTR	FRONTIER COMMUNICATIONS CORP	Aug-31	B	9.000	36	275	311	5	13.7	14.0	71.1	69.9
20	GNW	GENWORTH	Sep-21	B	7.625	185	270	455	8	8.4	8.6	97.6	97.0

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).

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.

Fixed income securities are subject to increased loss of principal during periods of rising interest rates. Fixed-income investments are subject to various risks including changes in credit quality, market valuations, liquidity, prepayments, early redemption, corporate events, tax ramifications and other factors. Defaults on interest payments and/or principal may also occur. Projections, results and assumptions contained herein reflect past performance of the referenced securities and asset classes. Past performance is no guarantee of future results. The investment return and principal value of an investment will fluctuate such that an investment, if and when redeemed, may be worth more or less than its original cost.

This information is intended for general informational purposes only, and should not be used as the sole basis for any investment decisions. None of the information in the report constitutes an offer or solicitation to buy or sell any security or financial product, a recommendation concerning any security, financial product or asset class, or an offer to provide investment advice or any other service. Where appropriate, please consult with a qualified financial and tax professional.