

Market Transparency Report

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

December 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 December 2017

	Median Yield (bps)	Daily Trade Volume	Buy/Sell Ratio
Agency	13	9.1%	0.1
CD	16	7.8%	0.2
Corp	-7	-0.2%	0.0
Municipal	-3	8.5%	-0.1
Treasury	11	15.1%	0.0

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

Yield Matrix

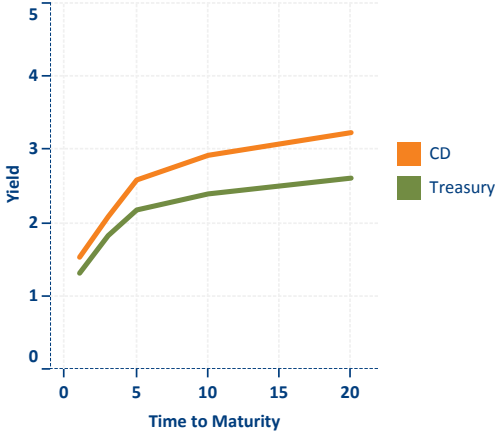
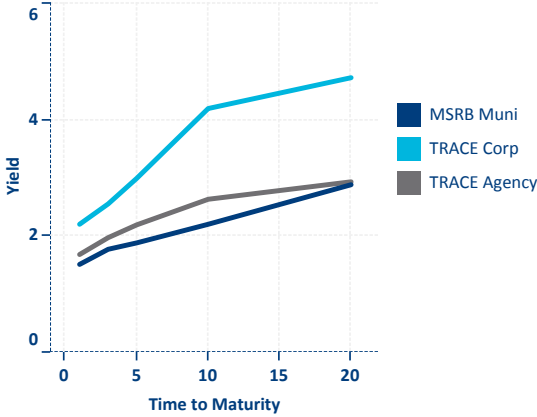
Average Yield, % for December 2017

Market	TTM					Median Maturity (Years)
	1	3	5	10	20	
MSRB Muni	1.5	1.8	1.9	2.2	2.9	11
TRACE Corp	2.2	2.6	3.0	4.2	4.7	4
TRACE Agency	1.7	2.0	2.2	2.6	2.9	3
CD	1.5	2.1	2.6	2.9	3.2	1
Treasury	1.3	1.8	2.2	2.4	2.6	1

Asset Class

Market	Category (Filtered)	Rating Key	1	3	5	10	20	Median Maturity (Years)
TRACE Corp	Financial	AA	1.8	2.2	2.4			2
		A	1.9	2.4	2.7	3.3	3.9	4
		BBB	2.3	2.8	3.1	3.6	4.2	6
		HY	2.6	3.1	3.8	6.7	6.9	5
		AAA	1.7	2.1	2.1	3.0	3.4	3
	Non-Financial	AA	1.7	2.3	2.6	3.1		1
		A	1.7	2.4	2.7	3.4	3.8	8
		BBB	2.0	2.7	3.3	4.4	5.4	6
		HY	47.4	7.3	4.8	11.2	14.1	9
MSRB Muni	GO	AAA	1.4	1.6	1.7	2.0	2.7	8
		AA	1.4	1.7	1.8	2.1	2.8	10
		A	2.0	2.1	2.0	2.5	3.0	8
		BBB	2.1	2.7	3.1	3.4	3.8	11
		HY	5.0	4.5	8.3	4.9	4.6	10
	Revenue	AAA	1.4	1.6	1.7	2.0	2.6	8
		AA	1.5	1.7	1.8	2.1	2.7	12
		A	1.6	1.8	2.1	2.3	2.9	15
		BBB	1.8	2.2	2.4	3.0	3.3	16
		HY	18.2	26.5	18.3	7.1	9.6	14

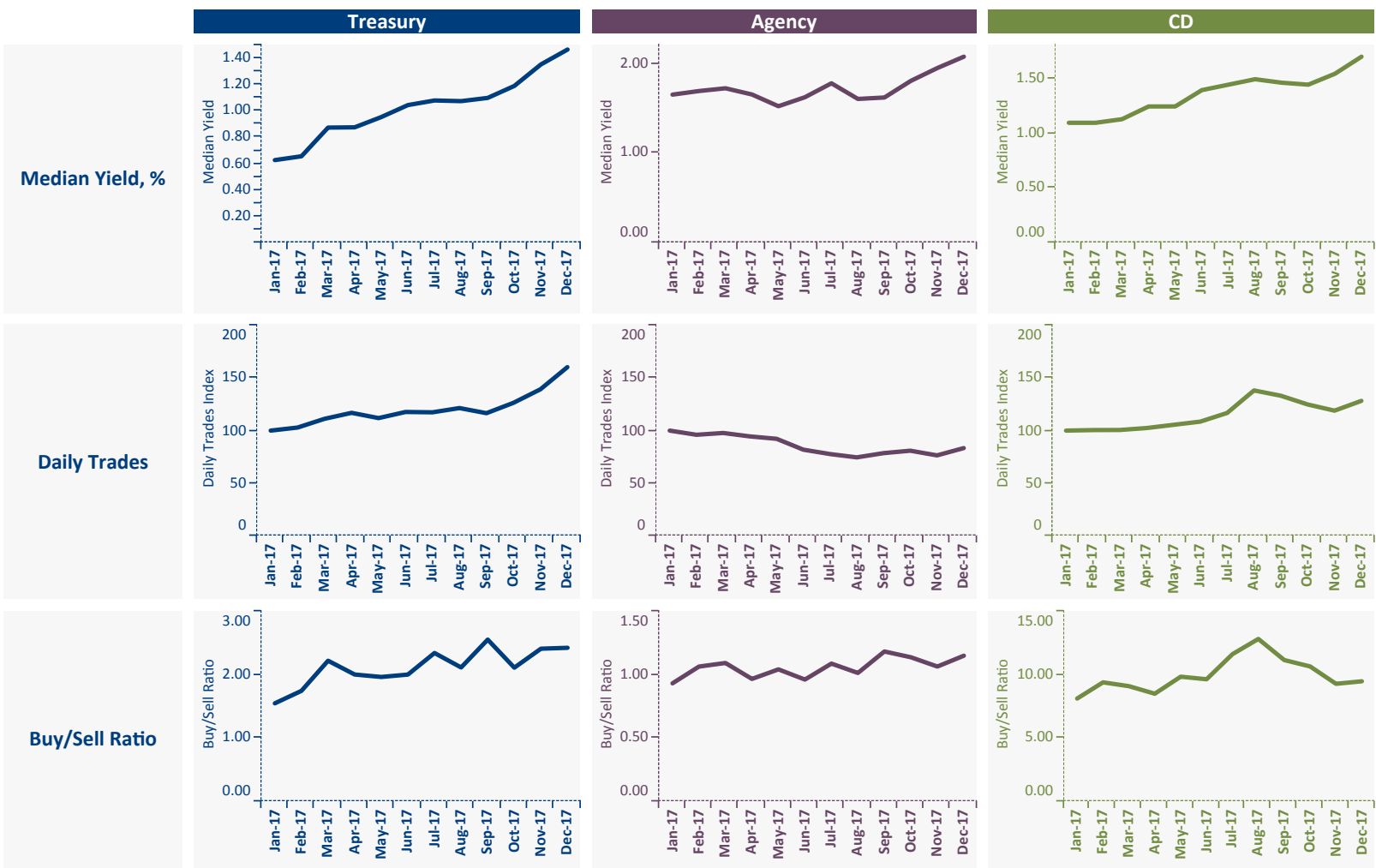
Average Yield, %



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



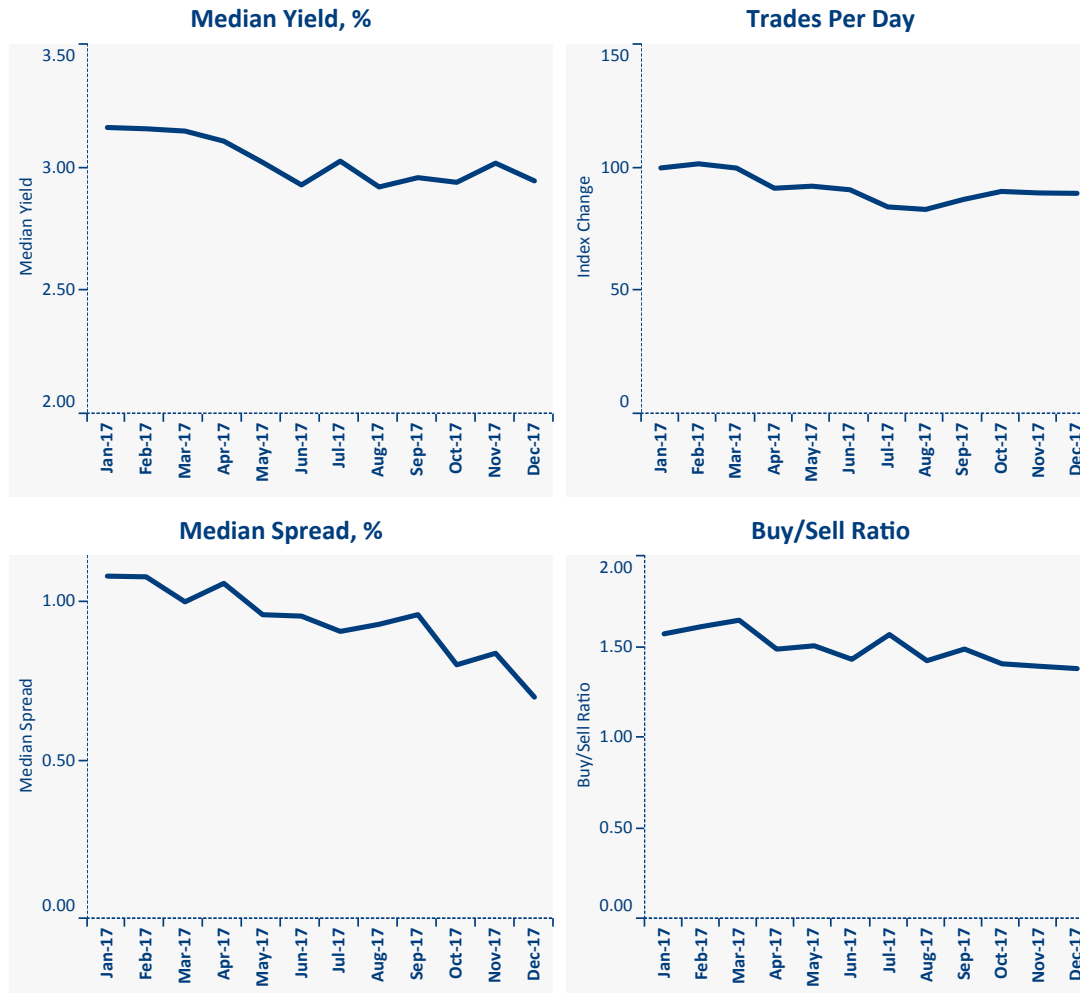
Daily Trades: First month = 100

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



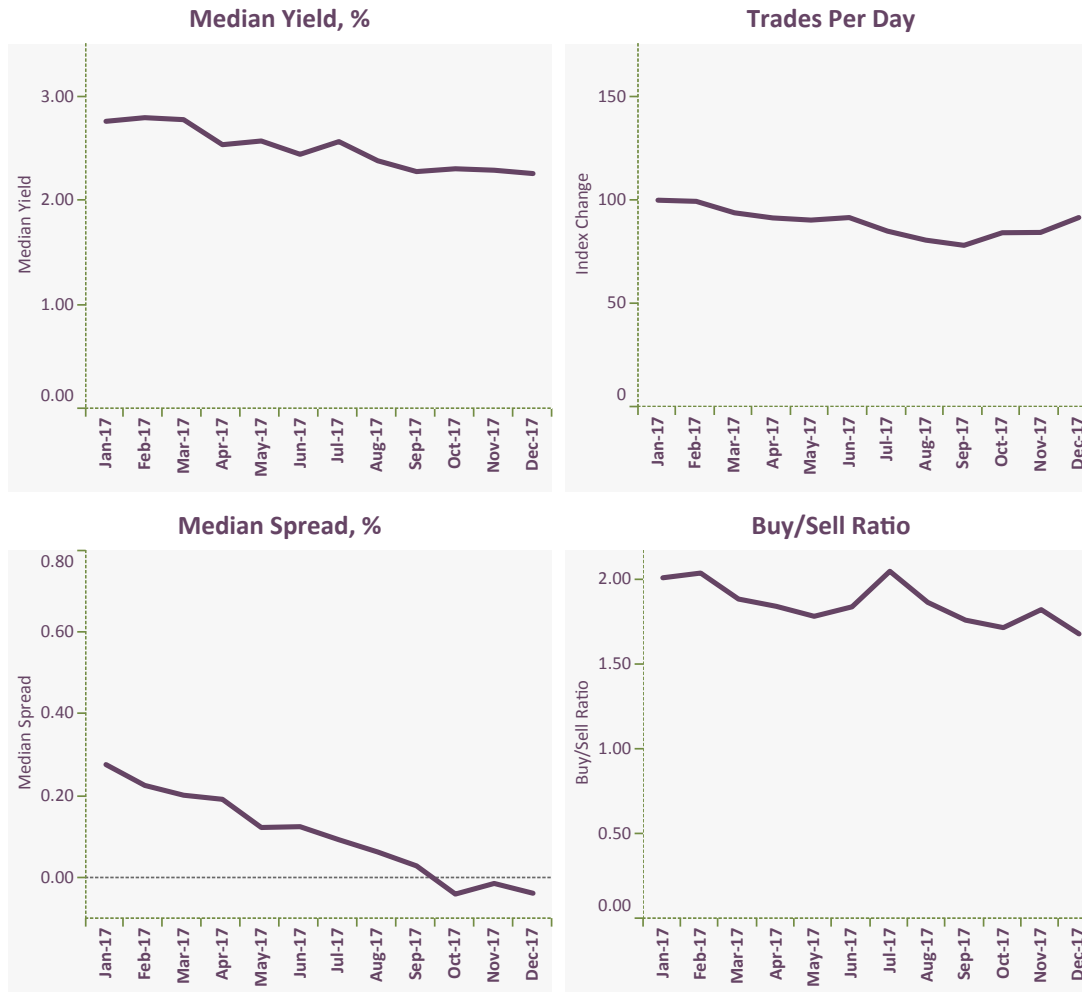
Daily Trades: First month = 100

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.

©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

December 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	862	3.2%	13,314	1.2	278	2.1	2.5	2.9	3.5	4.2
2	JPM	JP MORGAN CHASE	A	533	2.9%	12,116	1.3	251	2.0	2.4	2.7	3.2	3.7
3	BAC	BANK OF AMERICA	A	440	2.6%	10,745	1.1	217	2.0	2.4	2.7	3.2	4.0
4	C	CITIGROUP	BBB	369	2.5%	10,211	1.6	225	1.9	2.5	2.9	3.5	3.6
5	T	AT&T	BBB	89	2.5%	10,167	1.8	213	2.0	2.5	2.9	3.8	4.7
6	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	A	365	2.3%	9,563	1.2	186	2.0	2.4	2.7	3.5	4.0
7	WFC	WELLS FARGO	A	227	2.0%	8,149	1.5	187	2.0	2.5	2.8	3.2	3.7
8	MS	MORGAN STANLEY	BBB	867	1.8%	7,606	1.1	186	2.1	2.5	3.0	3.4	4.0
9	VZ	VERIZON	BBB	106	1.6%	6,546	1.7	147	2.0	2.5	2.8	3.5	4.2
10	AAPL	APPLE INC	AA	58	1.5%	6,356	1.8	149	1.8	2.3	2.5	3.0	3.4
11	BRK	BERKSHIRE HATHAWAY	A	146	1.1%	4,479	1.3	110	1.9	2.3	2.6	3.2	3.7
12	BUD	ANHEUSER BUSCH INBEV WORLDWIDE INC	A	39	1.1%	4,368	1.5	83	2.0	2.2	2.7	3.2	3.8
13	GM	GENERAL MOTORS FINANCIAL COMPANY INC	BBB	63	1.0%	4,056	2.9	103	2.1	2.6	3.1	3.8	4.7
14	CTL	CENTURYLINK	B	29	0.9%	3,735	1.2	79		5.1	6.7	7.5	8.1
15	MSFT	MICROSOFT CORP	AAA	41	0.9%	3,679	1.6	90	1.7	2.0	2.4	2.8	3.3
16	TEVA	TEVA PHARMACEUTICAL FIN CO B V	BBB	12	0.8%	3,471	2.5	72	2.1	4.6	5.1	5.3	5.9
17	AXP	AMERICAN EXPRESS	BBB	36	0.8%	3,409	1.6	74	1.9	2.3	2.7	3.1	3.8
18	ORCL	ORACLE CORP	AA	32	0.8%	3,297	1.3	68	1.9	2.3	2.6	3.0	3.5
19	FTR	FRONTIER COMMUNICATIONS CORP	B	22	0.8%	3,136	0.6	51			17.0	16.7	14.2
20	HBC	HSBC	N/R	500	0.7%	3,012	1.1	76	2.6	2.6	2.8	3.7	3.8

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

December 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	CHRC	BAYSIDE CMNTY CHURCH SARASOTA INC BRADEN	N/R	170	0.4%	1,771	1,642	129	12.7	17			5.5		6.8
2	STI	SUNTRUST BKS INC	BBB	23	0.6%	2,330	1,962	368	5.3	48	2.0	2.3	2.7	3.7	
3	CBL	CBL & ASSOCS LTD PARTNERSHIP	BBB	3	0.2%	1,003	836	167	5.0	19			6.1	6.7	
4	QCOM	QUALCOMM	A	17	0.6%	2,361	1,910	451	4.2	58	2.1	2.4	3.0	3.4	4.1
5	M	MACYS RETAIL HLDGS INC	BBB	20	0.4%	1,817	1,448	369	3.9	41		3.2	4.1	5.9	5.8
6	PSEC	PROSPECT CAP CORP INTERNOTES BOOK ENTRY	BBB	181	0.4%	1,584	1,208	376	3.2	22	2.6	4.2	4.9	4.6	6.1
7	ETP	ENERGY TRANSFER PARTNERS L P	BBB	28	0.4%	1,497	1,137	360	3.2	32	2.0	2.7	3.5	4.1	5.0
8	MAT	MATTEL INC	BB	8	0.3%	1,108	841	267	3.2	26	3.1	4.5	5.8		6.8
9	BDX	BECTON DICKINSON & CO	BBB	17	0.2%	1,009	753	256	2.9	22	2.2	2.6	3.0	3.7	
10	GM	GENERAL MOTORS FINANCIAL COMPANY INC	BBB	63	1.0%	4,056	3,019	1,037	2.9	103	2.1	2.6	3.1	3.8	4.7
11	PBI	PITNEY BOWES	BBB	8	0.5%	1,980	1,443	537	2.7	40	2.8	5.2	6.1		5.9
12	LUK	JEFFERIES GROUP INC NEW	BBB	28	0.5%	1,995	1,447	548	2.6	45		2.8	3.4	3.8	5.1
13	TEVA	TEVA PHARMACEUTICAL FIN CO B V	BBB	12	0.8%	3,471	2,480	991	2.5	72	2.1	4.6	5.1	5.3	5.9
14	PM	PHILIP MORRIS INTL INC	A	30	0.3%	1,287	880	407	2.2	31	2.0	2.3	2.7	3.1	3.9
15	WAG	WALGREEN CO	BBB	10	0.3%	1,221	835	386	2.2	24	2.0	2.7	2.9	3.6	4.1
16	HPQ	HEWLETT PACKARD	BBB	18	0.6%	2,577	1,750	827	2.1	56	2.0	2.8	3.1	4.1	5.4
17	STX	SEAGATE HDD CAYMAN	BBB	7	0.3%	1,320	895	425	2.1	33	2.0		4.4	5.3	5.9
18	ABV	ABBVIE INC	BBB	14	0.3%	1,420	961	459	2.1	38	1.9	2.3	2.8	3.2	3.8
19	VIA	VIACOM INC NEW	BBB	33	0.5%	2,139	1,445	694	2.1	51		3.2	3.3	3.7	5.7
20	XRX	XEROX CORP	BBB	12	0.4%	1,563	1,050	513	2.1	35		3.1	3.9		6.1

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

December 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	INTC	INTEL CORP	A	25	0.4%	1,853	683	1,170	0.58	37	1.9	2.3	2.5	2.9	3.3
2	GNW	GENWORTH	B	9	0.2%	1,027	385	642	0.60	18		8.3	8.2		8.4
3	FTR	FRONTIER COMMUNICATIONS CORP	B	22	0.8%	3,136	1,189	1,947	0.61	51		15.9	17.3	16.5	14.7
4	AA	ALCOA	BB	10	0.2%	945	384	561	0.68	23		3.2	3.8	4.4	5.3
5	RY	ROYAL BANK OF CANADA	AA	237	0.4%	1,686	687	999	0.69	33	2.1	2.4	2.5	3.6	3.9
6	BMO	BANK MONTREAL MEDIUM TERM SR NTS BOOK EN	A	61	0.3%	1,425	600	825	0.73	34	2.1	2.5	2.7		3.7
7	MET	METLIFE	A	24	0.3%	1,395	598	797	0.75	28	2.1	2.4	2.9	3.1	3.7
8	RIG	TRANSOCEAN INC	B	11	0.2%	956	413	543	0.76	20				6.9	8.9
9	EDP	ENTERPRISE PRODS OPER LLC	BBB	32	0.3%	1,104	479	625	0.77	23	2.5	2.5	2.9	3.4	4.3
10	PNC	PNC FDG CORP	A	43	0.2%	946	414	532	0.78	21	2.3	2.4	2.7	3.2	
11	CS	CREDIT SUISSE	N/R	337	0.4%	1,744	830	914	0.91	32	2.4	2.7	3.7	3.6	
12	BCS	BARCLAYS	BBB	406	0.5%	2,029	987	1,042	0.95	46	3.2	2.3	2.9	3.4	4.0
13	DELL	DELL	BB	12	0.3%	1,367	674	693	0.97	34	3.0	3.4	4.1	5.6	6.3
14	BP	BP	A	40	0.5%	2,007	1,002	1,005	1.00	43	2.0	2.4	2.7	3.2	
15	PRU	PRUDENTIAL	A	42	0.3%	1,080	541	539	1.00	26	2.2	2.5		3.9	3.9
16	NRX	NATIONAL RURAL UTILS COOP FIN CORP	A	194	0.2%	1,023	515	508	1.01	19	2.2	2.5	2.7	3.4	
17	WMT	WAL-MART	AA	27	0.3%	1,231	628	603	1.04	29	1.9	2.2	2.5	3.0	3.4
18	BAC	BANK OF AMERICA	A	440	2.6%	10,745	5,576	5,169	1.08	217	2.2	2.4	2.8	3.3	4.1
19	PTRB	PETROBRAS	BB	25	0.6%	2,453	1,290	1,163	1.11	89		4.0	4.6	5.9	6.8
20	HBC	HSBC	N/R	500	0.7%	3,012	1,591	1,421	1.12	76	2.1	2.7	2.8	3.5	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.

Corporate Bonds: Top 20 Most Bought Issues

December 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	LUK	JEFFERIES GROUP INC NEW	Dec-37	BBB	6.000	1,045	3	1,048	25			100.0	100.0
2	STI	SUNTRUST BKS INC	Null	BBB	5.125	976	10	986	23			100.0	98.2
3	PBI	PITNEY BOWES	Mar-24	BBB	4.625	686	335	1,021	18	6.5	6.6	90.6	90.1
4	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	Null	BBB	5.000	672	603	1,275	21			103.3	102.8
5	T	AT&T	May-25	BBB	3.400	631	198	829	16	3.6	3.7	98.9	98.2
6	COWN	Null	Dec-27	N/R	7.350	611	20	631	4			25.0	24.9
7	C	CITIGROUP	Sep-18	BBB	2.500	607	107	714	10	2.0	2.2	100.4	100.2
8	JPM	JP MORGAN CHASE	Null	BBB	6.750	588	114	702	6			114.3	113.6
9	GM	GENERAL MOTORS FINANCIAL COMPANY INC	Null	BB	5.750	568	37	605	16			105.5	103.5
10	RILY	Null	Dec-27	N/R	7.250	546		546	3			25.0	
11	JPM	JP MORGAN CHASE	Null	BBB	4.625	525	27	552	15			99.9	97.1
12	OII	Null	Nov-24	BBB	4.650	509	23	532	10	5.0	5.2	98.0	96.9
13	WMGI	WRIGHT MED GROUP INC	Feb-20	N/R	2.000	502	21	523	3	0.5	0.7	103.2	103.1
14	PSEC	PROSPECT CAP CORP INTERNOTES BOOK ENTRY	Jul-22	BBB	4.950	493	22	515	3	4.9	5.3	100.1	98.8
15	DFS	DISCOVER BK NEW CASTLE DEL	Null	BB	5.500	488	15	503	12			104.9	102.8
16	HPQ	HEWLETT PACKARD	Oct-25	BBB	4.900	462	67	529	11	4.1	4.2	104.9	104.4
17	STI	SUNTRUST BKS INC	Null	BBB	5.625	460	49	509	3			104.6	104.0
18	T	AT&T	Feb-22	BBB	3.000	437	318	755	7	2.9	2.9	100.4	100.2
19	C	CITIGROUP	Jul-18	BBB	2.150	434	40	474	12	1.9	2.0	100.2	100.1
20	UA	UNDER ARMOR	Jun-26	BB	3.250	428	181	609	10	5.0	5.1	88.0	87.3

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).

Corporate Bonds: Top 20 Most Sold Issues

December 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	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	Null	BBB	5.000	672	603	1,275	21			103.3	102.8
2	INTC	INTEL CORP	Dec-35	A	2.950	1	561	562	4			161.5	165.4
3	BUD	ANHEUSER BUSCH INBEV WORLDWIDE INC	Feb-19	A	2.150	364	369	733	5	2.0	2.1	100.2	100.1
4	PBI	PITNEY BOWES	Mar-24	BBB	4.625	686	335	1,021	18	6.5	6.6	90.6	90.1
5	AAPL	APPLE INC	May-23	AA	2.400	341	320	661	14	2.6	2.6	99.1	98.8
6	T	AT&T	Feb-22	BBB	3.000	437	318	755	7	2.9	2.9	100.4	100.2
7	JPM	JP MORGAN CHASE	Null	BBB	7.900	291	307	598	17			101.7	101.4
8	BUD	ANHEUSER BUSCH INBEV WORLDWIDE INC	Feb-26	A	3.650	330	292	622	13	3.2	3.2	103.2	103.0
9	BMO	BANK MONTREAL MEDIUM TERM SR NTS BOOK EN	Jan-18	N/R	0.000	1	285	286	9			98.4	103.1
10	FTR	FRONTIER COMMUNICATIONS CORP	Sep-21	B	6.250	122	279	401	6		15.8	73.6	72.6
11	WFC	WELLS FARGO	Null	BBB	7.980	138	278	416	10			101.5	101.0
12	VZ	VERIZON	Sep-23	BBB	5.150	205	267	472	10	3.0	3.0	111.4	111.0
13	FTR	FRONTIER COMMUNICATIONS CORP	Apr-20	B	8.500	93	266	359	6			91.3	85.0
14	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	Jan-38	A	5.875	64	263	327	5	3.8	3.9	128.4	127.7
15	MU	MICRON TECHNOLOGY INC	Nov-43	BB	3.000	10	247	257	2	1.0	1.1	148.3	148.7
16	GS	GOLDMAN SACHS	Jan-22	BBB	5.750	158	245	403	6	2.9	2.9	111.1	110.9
17	SHLD	SEARS HLDGS CORP	Oct-18	C	6.625	83	243	326	4	28.8	29.8	84.6	84.0
18	KND	KINDRED HEALTHCARE INC	Apr-22	B	6.375	34	240	274	7	7.1	6.0	97.2	100.8
19	VZ	VERIZON	Nov-24	BBB	3.500	425	239	664	9	3.2	3.2	101.9	101.6
20	GILD	GILEAD SCIENCES INC	Feb-25	A	3.500	250	230	480	3	3.0	3.0	103.2	102.9

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.