

# Market Transparency Report

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

**November 2016**

[www.tradeweb.com](http://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 November 2016

	Median Yield (bps)	Daily Trade Volume	Buy/Sell Ratio
Agency	25	9.2%	-0.2
CD	7	-5.7%	-0.8
Corp	19	8.5%	0.0
Municipal	61	14.9%	0.2
Treasury	28	13.1%	-0.2

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

# Yield Matrix

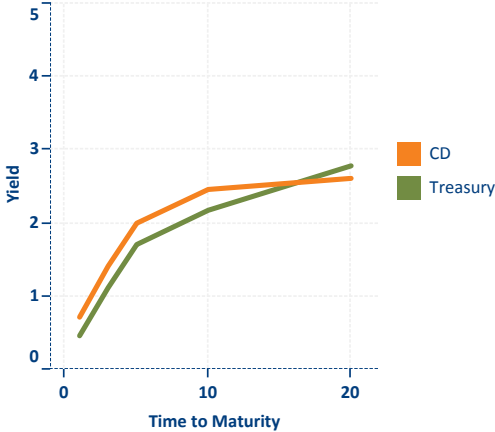
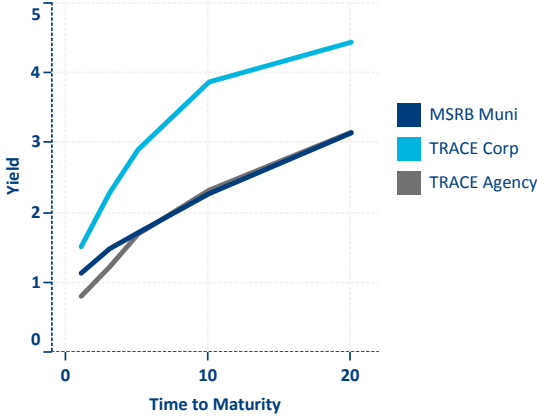
## Average Yield, % for November 2016

Market	TTM					Median Maturity (Years)
	1	3	5	10	20	
MSRB Muni	1.1	1.5	1.7	2.3	3.2	15
TRACE Corp	1.5	2.3	2.9	3.9	4.5	4
TRACE Agency	0.8	1.2	1.7	2.3	3.2	3
CD	0.7	1.4	2.0	2.5	2.7	2
Treasury	0.5	1.1	1.7	2.2	2.8	2

## Asset Class

Market	Category (Filtered)	Rating Key	1	3	5	10	20	Median Maturity (Years)	
TRACE Corp	Financial	AA	1.2	1.8	2.2			2	
		A	1.3	1.9	2.4	3.3	4.5	4	
		BBB	1.6	2.5	3.3	3.9	4.2	4	
		HY	2.4	3.6	4.6	4.8	7.6	2	
	Non-Financial	AAA	1.7	1.9				3.9	4
		AA	0.8	1.6	2.0	3.1	3.8	4	
		A	1.4	1.9	2.5	3.2	4.4	3	
		BBB	1.8	2.4	3.1	4.4	6.3	9	
		HY	3.2	5.4	8.5	8.0	9.6	7	
MSRB Muni	GO	AAA	1.0	1.3	1.5	2.0	2.8	9	
		AA	1.0	1.3	1.6	2.2	3.1	12	
		A	1.1	1.5	1.8	2.4	3.0	10	
		BBB	1.8	2.7	3.0	3.1	4.4	15	
	Revenue	HY	4.4	2.2	2.7	5.6	5.7	13	
		AAA	1.0	1.3	1.5	2.1	2.8	12	
		AA	1.1	1.3	1.6	2.1	3.0	16	
		A	1.2	1.5	1.8	2.4	3.4	20	
		BBB	1.6	2.2	2.4	2.8	3.6	21	
		HY	19.7	19.6	12.1	9.5	7.9	20	

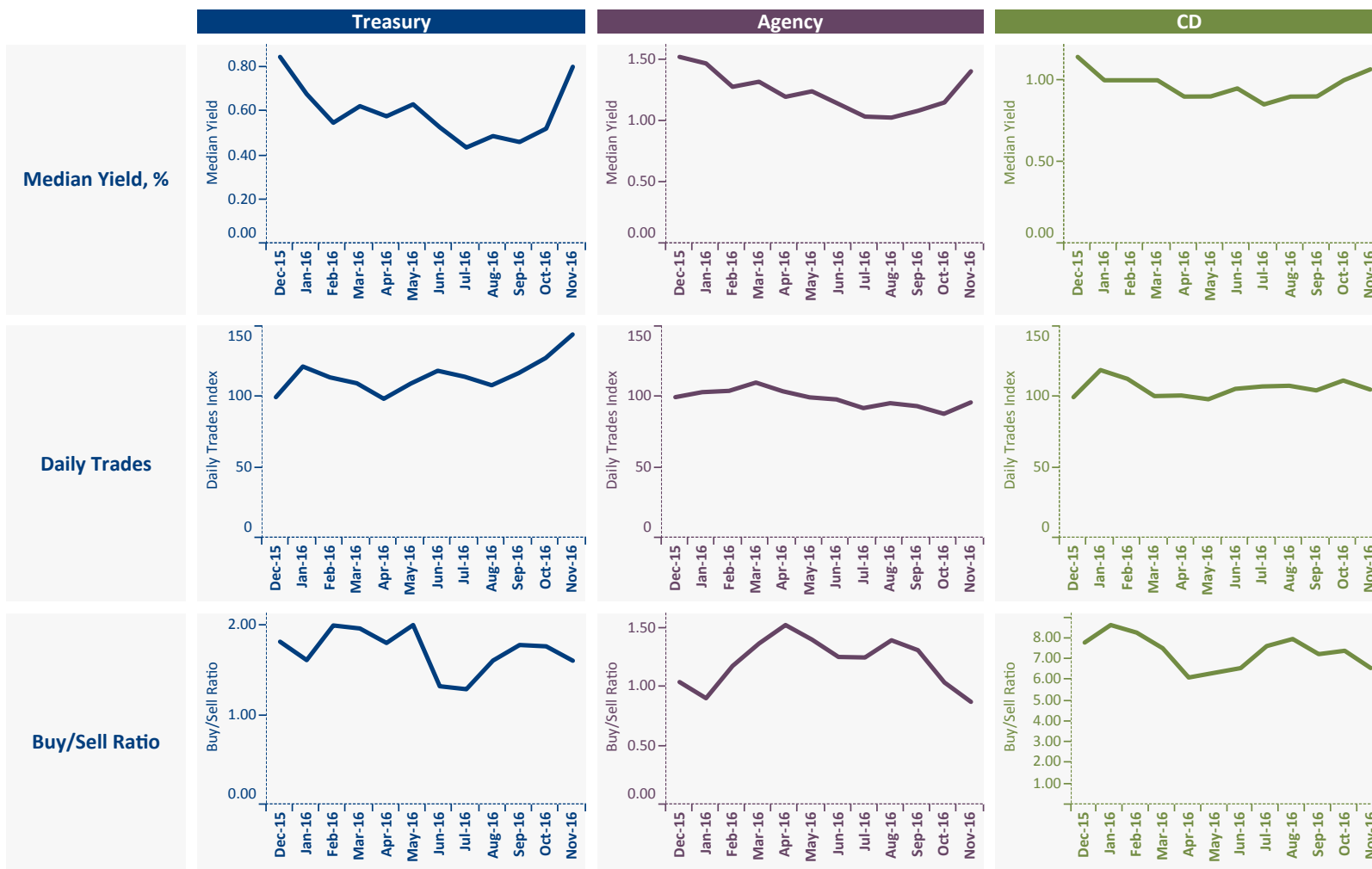
## Average Yield, %



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



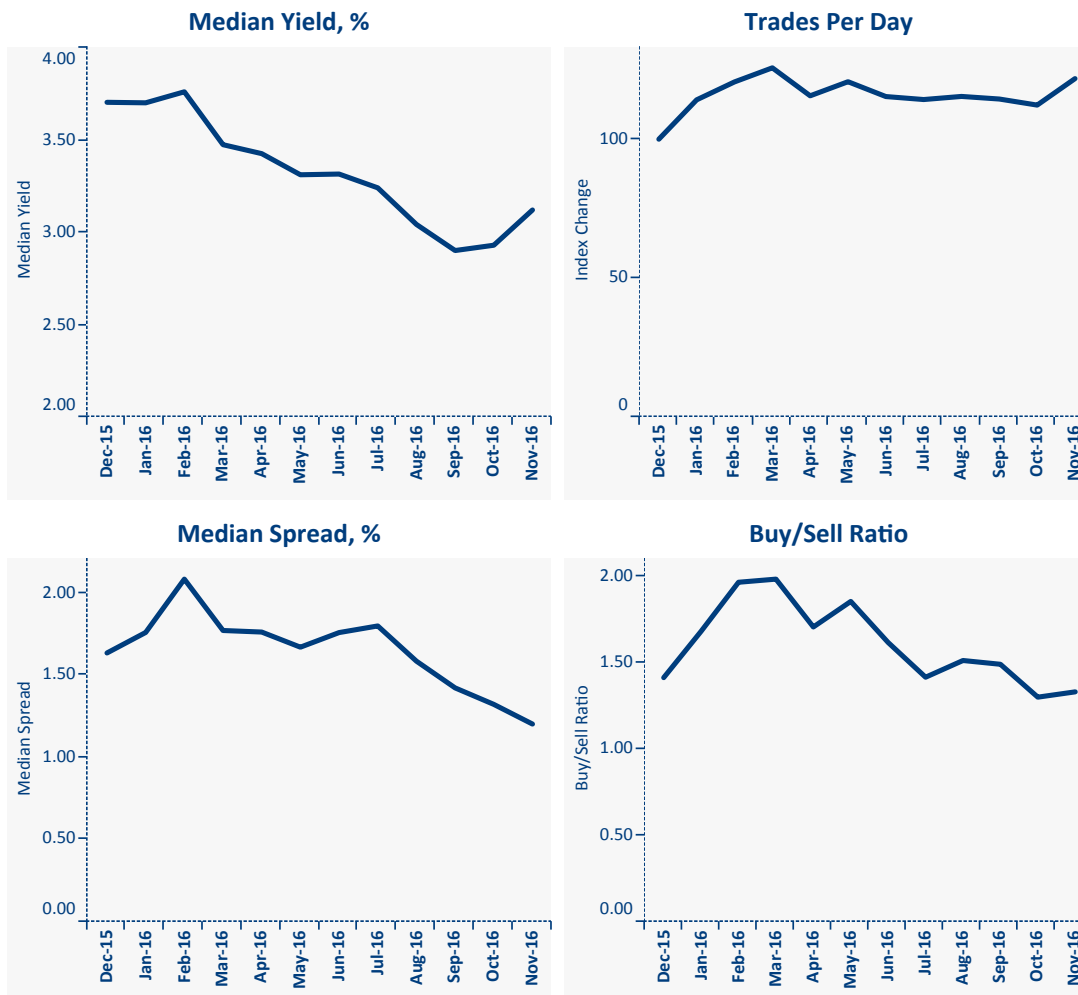
Daily Trades: First month = 100

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



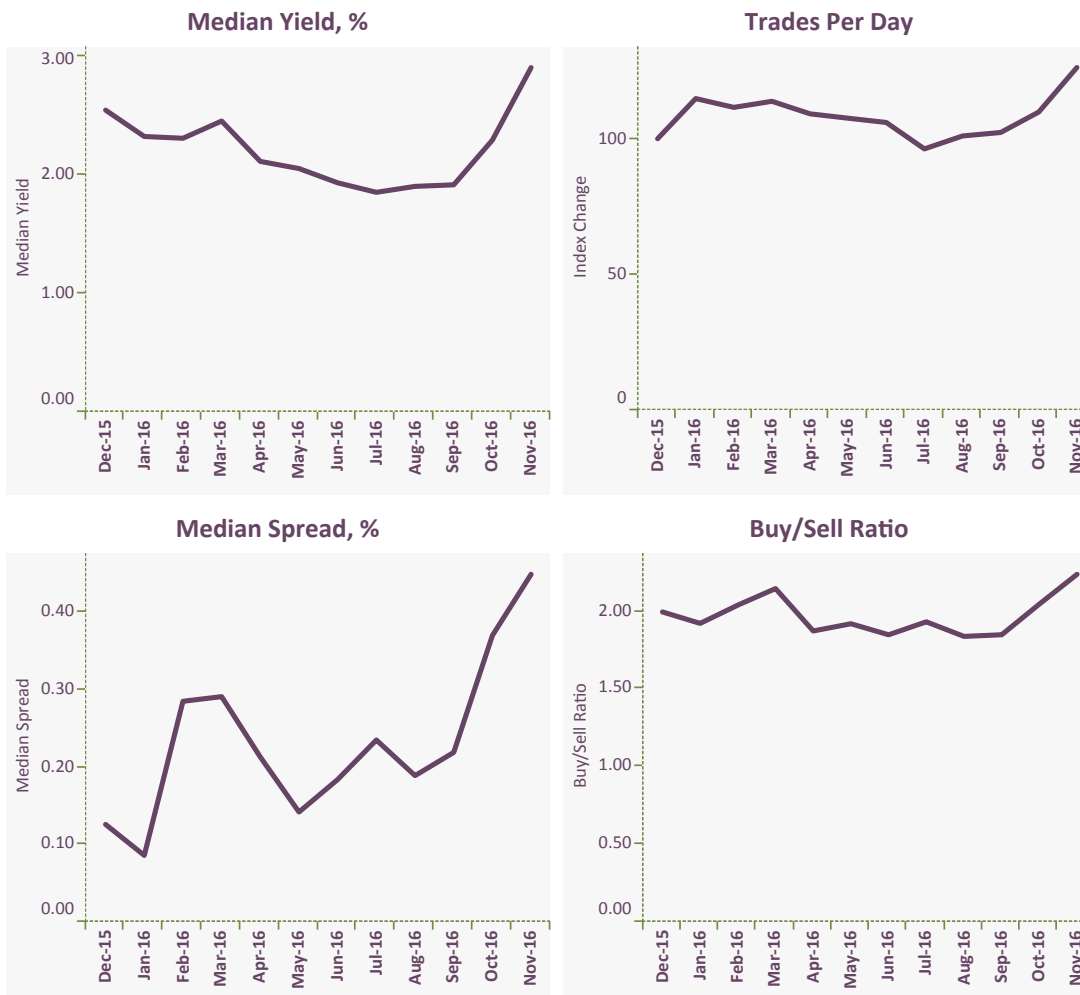
Daily Trades: First month = 100

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

November 2016

Index	Ticker	Comany	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	JPM	JP MORGAN CHASE	A	466	3.2%	13,103	1.6	284	1.3	2.1	2.5	3.3	3.1
2	BAC	BANK OF AMERICA	BBB	494	3.2%	13,020	1.0	251	1.6	2.1	2.6	3.7	4.0
3	GS	GOLDMAN SACHS	BBB	800	3.2%	12,927	1.2	263	1.6	2.3	2.7	3.4	4.4
4	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	AA	395	2.5%	10,211	0.9	186	1.1	1.8	2.3	3.2	3.9
5	C	CITIGROUP	BBB	299	2.4%	9,851	1.8	214	1.5	2.0	2.7	3.8	3.6
6	T	AT&T	BBB	75	2.3%	9,490	2.1	180	1.5	2.2	2.9	3.7	4.7
7	WFC	WELLS FARGO	A	189	2.2%	9,042	1.8	196	1.3	1.9	2.4	3.4	4.4
8	MS	MORGAN STANLEY	BBB	660	1.7%	6,714	1.0	163	1.6	2.0	2.8	3.5	4.2
9	VZ	VERIZON	BBB	63	1.5%	6,214	1.1	109	1.2	2.2	2.6	3.4	4.5
10	AAPL	APPLE INC	AA	34	1.1%	4,540	1.6	91	1.2	1.5	2.1	2.9	3.9
11	BUD	ANHEUSER BUSCH INBEV WORLDWIDE INC	A	40	1.0%	3,874	1.5	68	1.3	1.7	2.5	3.3	4.2
12	BRK	BERKSHIRE HATHAWAY	AA	161	0.9%	3,791	1.2	89	1.2	1.7	2.4	3.1	4.1
13	CTL	CENTURYLINK	BB	31	0.9%	3,608	1.0	74	1.8	3.8	5.8	7.5	7.3
14	FTR	FRONTIER COMMUNICATIONS CORP	B	23	0.8%	3,245	1.7	66		7.1	8.6	10.8	9.9
15	MSFT	MICROSOFT CORP	AAA	35	0.7%	2,989	1.8	65	0.8	1.6	2.2	2.8	3.7
16	AXP	AMERICAN EXPRESS	BBB	35	0.7%	2,987	1.3	67	1.3	1.9	2.2	3.2	4.9
17	HBC	HSBC	N/R	435	0.7%	2,876	1.1	54	1.5	2.6	3.0	3.8	4.6
18	PEMX	PETROLEOS MEXICANOS	BBB	34	0.7%	2,751	2.2	89	2.0	3.8	5.1	5.8	7.2
19	DB	DEUTSCHE BANK	BBB	141	0.7%	2,675	2.3	52	2.3	3.2	3.8	4.4	
20	ORCL	ORACLE CORP	AA	29	0.6%	2,617	1.4	60	1.2	1.6	2.3	3.0	3.9

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 2016

Index	Ticker	Comany	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	119	0.3%	1,392	1,265	127	10.0	10	3.0	4.0			7.0
2	ABT	ABBOTT LABS	BBB	14	0.4%	1,451	1,267	184	6.9	36		2.2	2.9	3.4	4.6
3	AER	AERCAP AVIATION SOLUTIONS B V	BBB	17	0.3%	1,368	1,177	191	6.2	14	1.9	2.5	3.9		
4	PBI	PITNEY BOWES	BBB	7	0.3%	1,076	863	213	4.1	23	1.9	2.4	3.5		5.2
5	IEP	ICAHN ENTERPRISES	BB	5	0.6%	2,290	1,799	491	3.7	49		6.2	6.9		
6	ECOH	ECOPETROL S A	BBB	7	0.3%	1,102	819	283	2.9	34		2.3		5.4	
7	ABBV	ABBVIE INC	BBB	15	0.5%	2,012	1,476	536	2.8	41	1.5	2.0	2.7	3.3	4.5
8	STX	SEAGATE HDD CAYMAN	BBB	6	0.4%	1,467	1,069	398	2.7	34		2.2		5.8	7.1
9	HCA	HCA INC	BBB	23	0.3%	1,355	981	374	2.6	25		3.0	4.2	5.0	6.5
10	ALLY	ALLY FINANCIAL	BB	66	0.3%	1,248	901	347	2.6	29	2.9	3.3	4.1	5.5	6.4
11	GM	GENERAL MOTORS FINANCIAL COMPANY INC	BBB	35	0.5%	2,219	1,595	624	2.6	54	1.9	2.5	3.3	4.2	5.1
12	MRO	MARATHON OIL CORP	BBB	19	0.3%	1,365	975	390	2.5	28		2.8	2.9	4.2	6.2
13	XRX	XEROX CORP	BBB	13	0.3%	1,225	871	354	2.5	25	2.2	2.8	3.1	4.2	6.6
14	TEVA	TEVA PHARMACEUTICAL FIN CO B V	BBB	13	0.3%	1,155	812	343	2.4	27		2.2	2.9	3.8	4.7
15	DB	DEUTSCHE BANK	BBB	141	0.7%	2,675	1,863	812	2.3	52	2.3	3.2	3.8	4.4	
16	ETP	ENERGY TRANSFER PARTNERS L P	BBB	25	0.3%	1,216	844	372	2.3	23		3.1	3.3	4.3	5.4
17	HPQ	HEWLETT PACKARD	BBB	18	0.6%	2,471	1,712	759	2.3	57		1.9	3.0	4.6	6.0
18	PEMX	PETROLEOS MEXICANOS	BBB	34	0.7%	2,751	1,891	860	2.2	89	2.0	3.8	5.1	5.8	7.2
19	LUK	JEFFERIES GROUP INC NEW	BBB	15	0.4%	1,435	985	450	2.2	31	2.2	2.7	3.0	4.6	6.2
20	T	AT&T	BBB	75	2.3%	9,490	6,418	3,072	2.1	180	1.5	2.2	2.9	3.7	4.7

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 2016

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	BTU	PEABODY ENERGY	N/R	6	0.3%	1,044	55	989	0.06	13					
2	CLF	CLIFFS NAT RES INC	C	6	0.3%	1,017	180	837	0.22	20		8.7	8.4		8.9
3	AMT	AMERICAN TOWER CORP NEW	BBB	16	0.3%	1,194	268	926	0.29	18	1.8	2.9	2.9	3.9	
4	BCS	BARCLAYS	N/R	401	0.4%	1,519	458	1,061	0.43	22	3.0	2.8	4.1	4.2	4.2
5	FCX	FREEPORT-MCMORAN COPPER & GOLD INC	B	19	0.4%	1,600	568	1,032	0.55	37	3.4	3.6	4.9	5.7	6.9
6	CS	CREDIT SUISSE	N/R	357	0.5%	2,128	810	1,318	0.61	45	2.4	3.0	3.4	3.8	
7	WMB	WILLIAMS COS INC	BBB	29	0.2%	1,008	392	616	0.64	21		3.3	3.7	4.7	6.2
8	RY	ROYAL BANK OF CANADA	AA	238	0.4%	1,729	679	1,050	0.65	32	1.3	2.0	2.1	3.5	3.8
9	BMO	BANK MONTREAL MEDIUM TERM SR NTS BOOK EN	N/R	50	0.3%	1,199	477	722	0.66	27	1.4	1.9	2.5		3.4
10	X	UNITED STS STL CORP NEW	B	5	0.3%	1,066	430	636	0.68	24	4.8	6.2	7.2		8.4
11	RIG	TRANSOCEAN INC	B	14	0.4%	1,683	725	958	0.76	35	6.0	7.6	9.3	11.5	11.0
12	INTC	INTEL CORP	A	18	0.3%	1,095	491	604	0.81	27	1.2	1.6	2.3	2.8	1.2
13	PTRB	PETROBRAS	B	9	0.4%	1,451	668	783	0.85	49	4.0	4.8	6.1		8.5
14	WMT	WAL-MART	AA	24	0.3%	1,388	638	750	0.85	28	1.3	1.8	2.0	3.0	3.9
15	DUK	DUKE ENERGY	BBB	90	0.3%	1,069	512	557	0.92	24	1.4	2.0	2.1	3.6	4.4
16	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	AA	395	2.5%	10,211	4,906	5,305	0.92	186	1.4	2.1	2.4	3.4	4.1
17	AA	ALCOA	BB	14	0.4%	1,785	867	918	0.94	42		3.9	4.1	5.5	6.3
18	FE	FIRSTENERGY CORP	B	23	0.3%	1,017	506	511	0.99	11	2.1	4.0	31.3	4.2	5.0
19	USB	U S BANCORP MEDIUM TERM NTS- BOOK ENTRY	A	25	0.3%	1,289	646	643	1.00	25	1.4	1.6	2.4	3.2	
20	MS	MORGAN STANLEY	BBB	660	1.7%	6,714	3,375	3,339	1.01	163	1.8	2.2	2.9	3.6	4.4

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 2016

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	Dec-49	A	5.000	1,491	797	2,288	23			103.6	103.1
2	IEP	ICAHN ENTERPRISES	Aug-20	BB	6.000	926	147	1,073	23	6.4	6.7	98.8	97.7
3	C	CITIGROUP	Nov-17	BBB	6.125	753	32	785	6			104.6	104.5
4	HPQ	HEWLETT PACKARD	Sep-41	BBB	6.000	678	220	898	20	6.0	6.2	100.1	97.8
5	IEP	ICAHN ENTERPRISES	Feb-22	BB	5.875	651	154	805	17	6.9	7.3	95.6	93.8
6	JPM	JP MORGAN CHASE	Aug-17	A	2.000	642	112	754	13	1.3	1.5	100.5	100.4
7	JPM	JP MORGAN CHASE	Apr-49	BBB	7.900	631	303	934	19			102.6	102.1
8	AOI	ALLIANCE ONE INTL INC	Jul-21	C	9.875	629	31	660	6	14.7	15.1	84.1	83.1
9	DHI	D R HORTON INC	Feb-18	BBB	3.625	624	3	627	4	1.6	2.4	101.9	101.1
10	DTE	DTE ENERGY CO	Null	Null		614	55	669	4			25.0	24.7
11	AER	AERCAP AVIATION SOLUTIONS B V	Apr-19	BBB	5.875	614	17	631	4	2.5	3.1	107.6	106.3
12	T	AT&T	May-25	BBB	3.400	581	153	734	13	3.7	3.9	98.1	96.7
13	T	AT&T	Feb-26	BBB	4.125	569	135	704	8	3.9	3.9	101.5	101.6
14	C	CITIGROUP	May-49	BB	6.300	554	114	668	15			101.2	99.0
15	HFC	FRONTIER OIL CORP	Apr-26	BBB	5.875	540	39	579	12	5.7	5.8	101.5	100.4
16	BAC	BANK OF AMERICA	Dec-49	BB	6.100	533	468	1,001	17			102.4	100.8
17	COF	CAPITAL ONE FINL CORP	Dec-49	BB	5.550	527	268	795	11			101.3	99.0
18	GT	GOODYEAR TIRE & RUBBER	May-26	BB	5.000	524	225	749	7	5.0	5.1	100.0	99.5
19	WFC	WELLS FARGO	Feb-49	BBB	7.980	503	265	768	14			103.6	102.8
20	MTG	MGIC INVT CORP WIS	Apr-20	BB	2.000	497	21	518	2			140.8	133.3

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

November 2016

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	VZ	VERIZON	Sep-23	BBB	5.150	325	965	1,290	17	3.2	3.4	111.9	110.6
2	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	Dec-49	A	5.000	1,491	797	2,288	23			103.6	103.1
3	AMT	AMERICAN TOWER CORP NEW	Sep-20	BBB	5.050	30	648	678	6	2.5	2.9	109.3	107.7
4	DEPO	DEPOMED INC	Sep-21	N/R	2.500	5	510	515	1			129.4	123.3
5	BAC	BANK OF AMERICA	Dec-49	BB	6.100	533	468	1,001	17			102.4	100.8
6	JPM	JP MORGAN CHASE	Aug-49	BBB	6.750	315	430	745	10			109.0	107.3
7	DYN	AMERENENERGY GENERATING CO	Apr-20	C	6.300	17	364	381	2	46.1	48.3	35.0	33.5
8	BTU	PEABODY ENERGY	Sep-20	N/R	6.500	15	362	377	4			57.4	56.6
9	AAPL	APPLE INC	May-23	AA	2.400	360	336	696	15	2.6	2.7	98.6	98.2
10	CLF	CLIFFS NAT RES INC	Oct-40	C	6.250	29	325	354	7	8.5	8.9	77.1	73.8
11	T	AT&T	Feb-22	BBB	3.000	440	324	764	10	3.0	3.1	100.0	99.5
12	FE	FIRSTENERGY CORP	Aug-39	B	6.800	193	307	500	4	16.9	20.5	36.9	42.1
13	JPM	JP MORGAN CHASE	Apr-49	BBB	7.900	631	303	934	19			102.6	102.1
14	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	Jan-38	AA	5.875	80	290	370	5	4.0	4.1	126.1	125.5
15	BUD	ANHEUSER BUSCH INBEV WORLDWIDE INC	Feb-19	A	2.150	453	287	740	5	1.7	1.7	100.9	100.9
16	PTRB	PETROBRAS	Jan-21	B	5.375	260	287	547	19	5.9	6.1	98.0	97.3
17	EAC	Erickson Air-Crane Incorporated	May-20	D	8.250	61	284	345	2	45.1	47.8	38.1	32.2
18	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	Dec-17	AA	5.250	119	275	394	7	1.1	1.3	104.3	104.0
19	COF	CAPITAL ONE FINL CORP	Dec-49	BB	5.550	527	268	795	11			101.3	99.0
20	WFC	WELLS FARGO	Feb-49	BBB	7.980	503	265	768	14			103.6	102.8

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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