

Market Transparency Report

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

November 2021

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 November 2021

	Median Yield (bps)	Daily Trade Volume	Buy/Sell Ratio
Agency	59	63.3%	1.0
CD	9	7.5%	-0.3
Corp	0	1.8%	-0.1
Municipal	-1	-0.7%	0.0
Treasury	4	3.9%	0.2

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

Yield Matrix

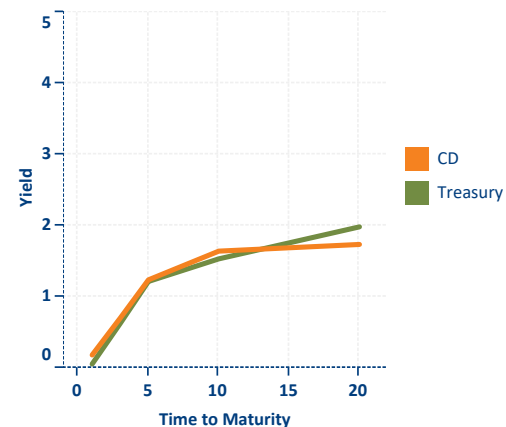
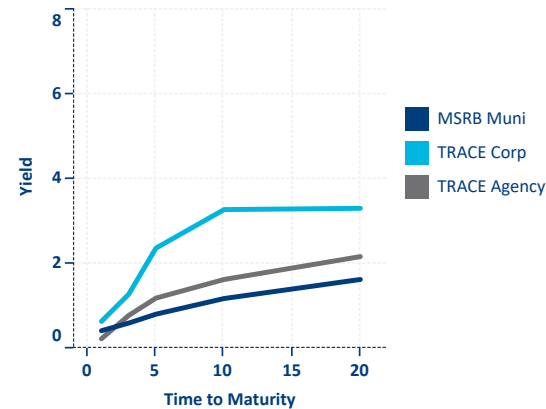
Average Yield, % for November 2021

Market	TTM					Median Maturity (Years)
	1	3	5	10	20	
MSRB Muni	0.4	0.6	0.8	1.2	1.6	8
TRACE Corp	0.6	1.3	2.4	3.3	3.3	3
TRACE Agency	0.2	0.8	1.2	1.6	2.2	9
CD	0.2	0.7	1.2	1.6	1.7	1
Treasury	0.1	0.6	1.2	1.5	2.0	1

Asset Class

Market	Category (Filtered)	Rating Key	1	3	5	10	20	Median Maturity (Years)
TRACE Corp	Financial	AA	0.4	1.2	1.4			1
		A	0.5	1.0	1.5	2.2	3.1	2
		BBB	0.6	1.5	1.9	2.5	3.5	3
		HY	1.5	2.6	5.6	6.2		6
		AAA			0.9	1.8	2.5	8
	Non-Financial	AA		1.0	1.4	1.9	2.5	8
		A	0.4	1.4	1.5	2.1	3.2	4
		BBB	0.6	1.4	2.0	3.0	3.2	5
		HY	1.5	2.7	8.3	5.1	4.3	6
MSRB Muni	GO	AAA	0.4	0.5	0.7	1.1	1.4	6
		AA	0.4	0.6	0.8	1.2	1.7	8
		A	0.5	0.7	0.9	1.2	1.6	7
		BBB	0.7	1.2	1.4	1.6	1.7	6
		HY				2.2	1.9	17
	Revenue	AAA	0.4	0.5	0.7	1.1	1.5	7
		AA	0.4	0.6	0.8	1.2	1.5	9
		A	0.5	0.7	0.9	1.1	1.4	10
		BBB	0.6	1.1	1.3	1.8	1.7	14
		HY	1.2	3.7	3.2	3.8	2.7	10

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.

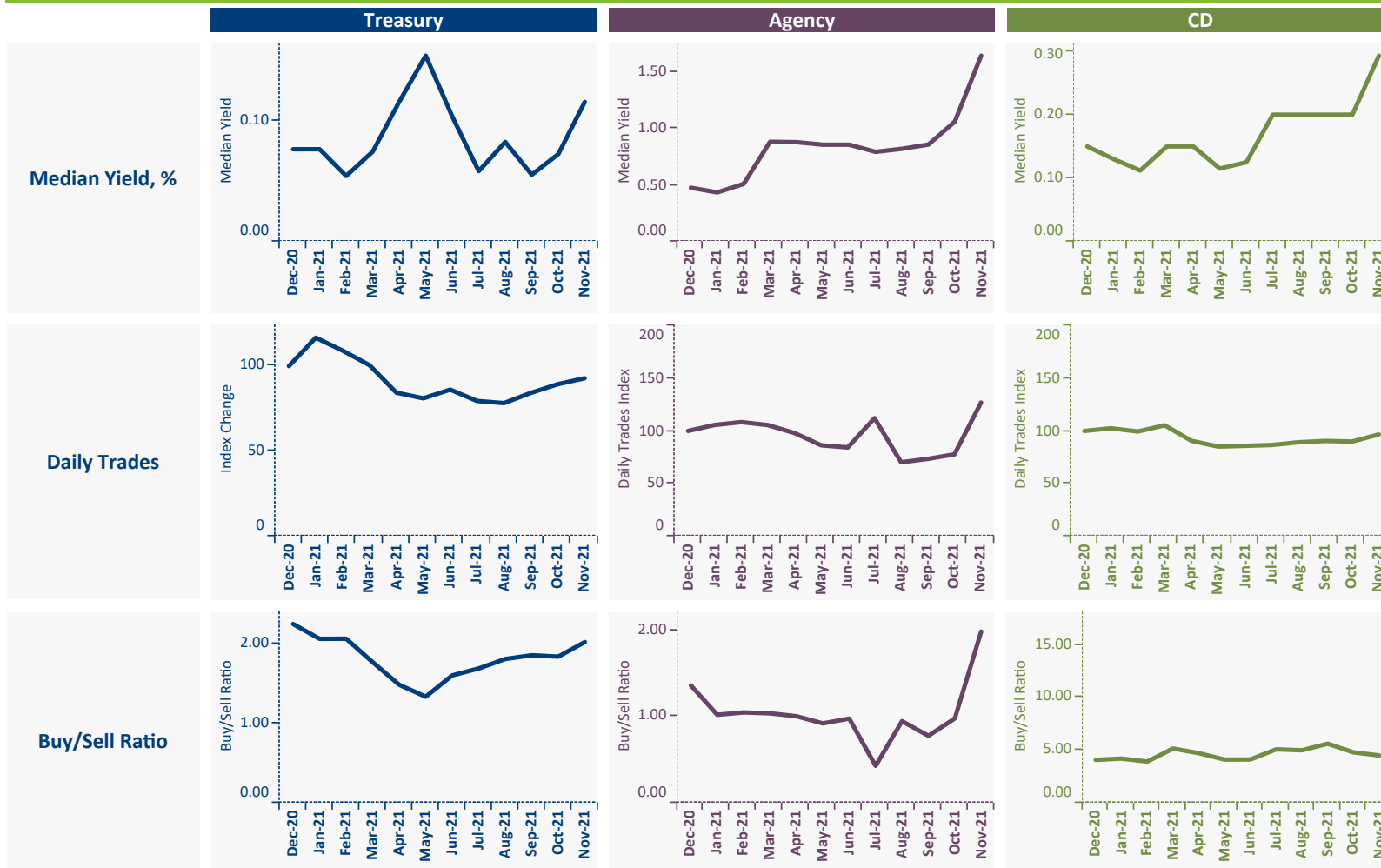
-The weights are based on transaction size.

-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

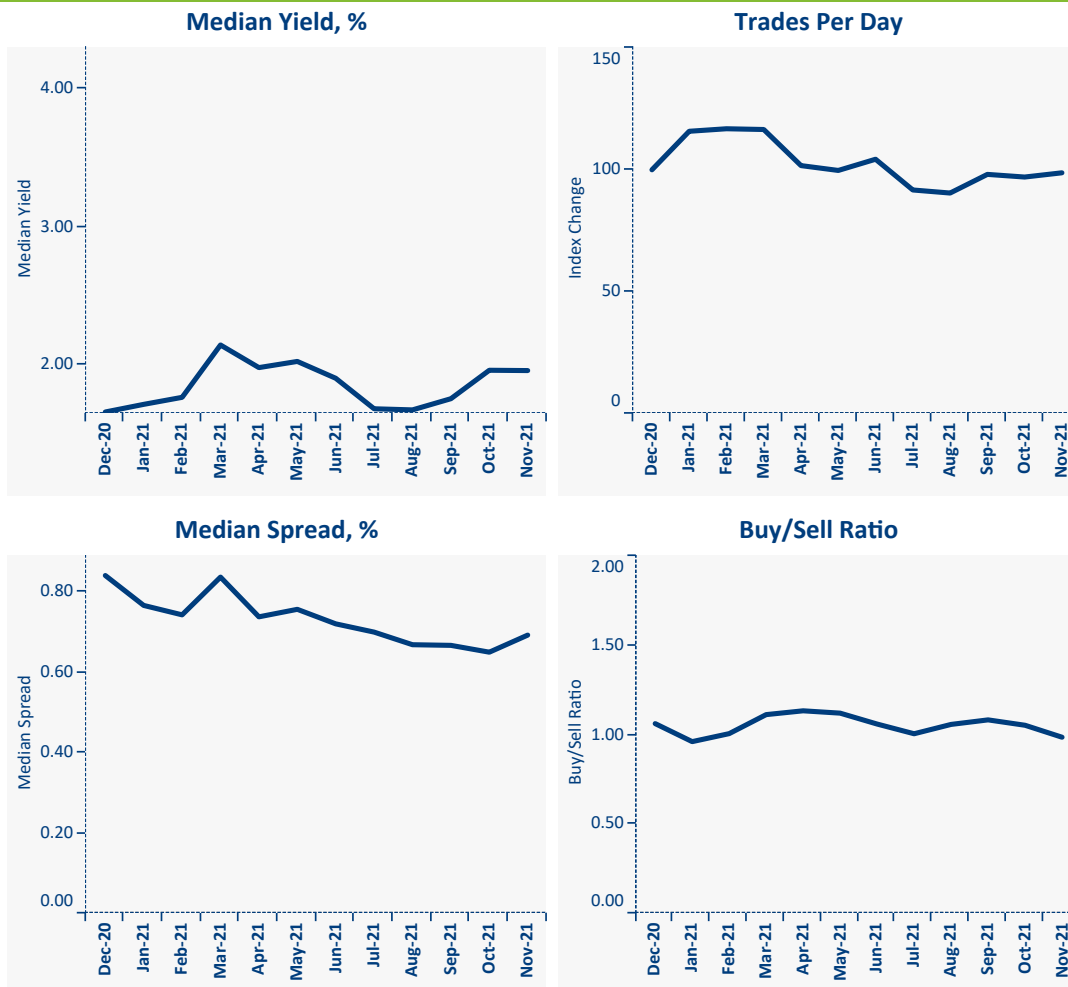
-Treasury and CD are based on transactions on the Tradeweb Direct Platform. Median yields are based on all customer buy transactions.

-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.

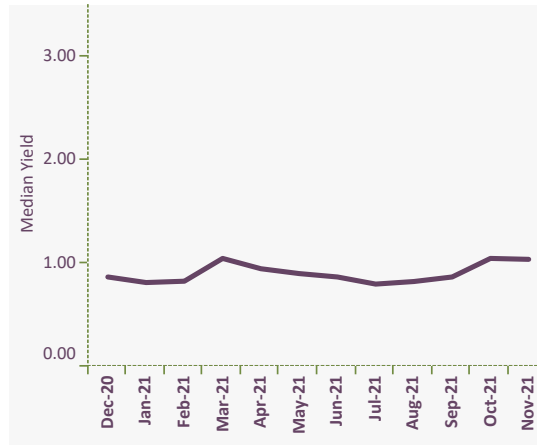
-Median yields and spreads are based on all odd-lot customer buy transactions...

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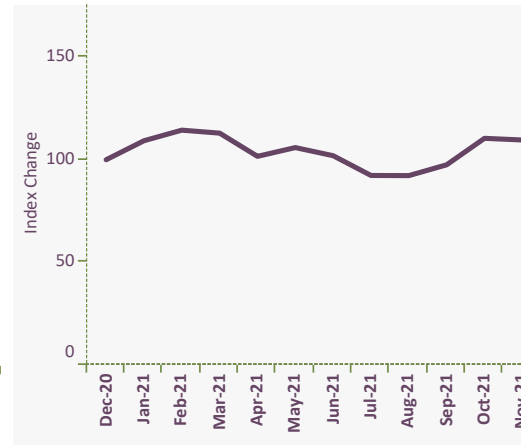


Municipal Bonds: Odd-Lot Customer Transaction Trend Summary

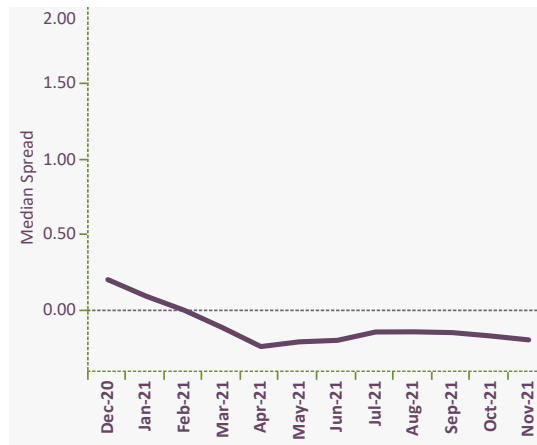
Median Yield, %



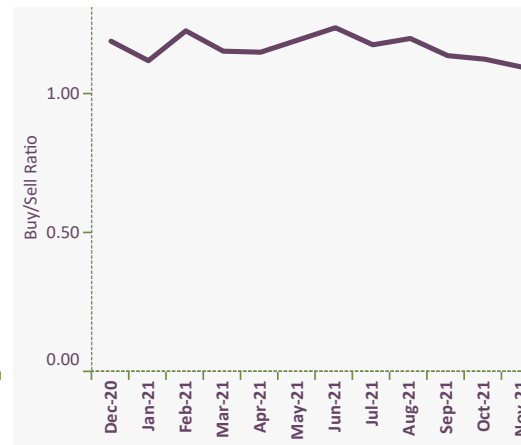
Trades Per Day



Median Spread, %



Buy/Sell Ratio



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 2021

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	JPM	JP MORGAN CHASE	BBB	735	3.3%	13,896	0.9	280	0.5	1.3	1.7	2.1	2.9
2	GS	GOLDMAN SACHS	A	951	2.7%	11,425	0.9	239	0.6	1.3	1.8	2.6	3.3
3	BAC	BANK OF AMERICA	A	293	2.3%	9,879	0.9	197	0.5	1.5	1.8	2.4	3.2
4	C	CITIGROUP	BBB	517	2.3%	9,629	0.8	210	0.5	1.5	1.8	2.3	3.1
5	MS	MORGAN STANLEY	A	708	1.7%	7,365	0.7	166	0.6	1.3	1.8	2.4	2.9
6	WFC	WELLS FARGO	A	138	1.6%	6,876	0.9	132	0.4	1.5	1.8	1.8	3.2
7	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	BBB	271	1.4%	5,813	1.0	127	0.7	1.4	2.0	3.1	2.9
8	VZ	VERIZON	BBB	156	1.4%	5,783	1.0	115	0.4	1.1	1.6	2.4	3.0
9	T	AT&T	BBB	113	1.4%	5,735	0.7	119	0.4	1.1	1.7	2.5	3.4
10	AAPL	APPLE INC	AA	56	1.2%	5,026	0.9	111	0.4	1.1	1.4	2.0	2.7
11	GM	GENERAL MOTORS FINANCIAL COMPANY INC	BBB	83	1.1%	4,816	1.1	113	0.8	1.5	2.1	2.7	3.7
12	ORCL	ORACLE CORP	BBB	35	1.1%	4,816	1.1	93	0.4	1.3	1.9	2.4	3.3
13	CVS	CVS CAREMARK CORP	BBB	46	1.0%	4,268	0.9	87	0.5	1.3	1.8	2.4	3.1
14	CMCS	COMCAST	A	58	1.0%	4,198	0.7	81	0.3	1.2	1.6	2.2	2.9
15	EIX	EDISON MISSION	BBB	45	1.0%	4,099	6.8	47	0.8	1.6	2.8	2.4	3.5
16	BK	BANK NEW YORK INC MEDIUM TERM SR NTS BOO	A	42	0.8%	3,564	1.5	64	0.4	1.0	1.4	2.0	
17	BRK	BERKSHIRE HATHAWAY	A	150	0.8%	3,396	0.6	86	0.4	1.0	1.7	2.1	3.0
18	ABBV	ABBVIE INC	BBB	31	0.7%	3,157	1.1	67	0.5	1.0	1.8	2.3	3.1
19	F	FORD	BB	131	0.7%	2,967	0.8	76	1.4	2.1	2.5	3.2	4.1
20	BA	BOEING CO	BBB	56	0.7%	2,797	1.4	71	0.8	1.6	2.1	2.8	3.5

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 2021

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	SIVB	SVB FINL GROUP	BBB	9	0.5%	2,170	1,921	249	7.7	46		1.5	1.8	2.4	
2	EIX	EDISON MISSION	BBB	45	1.0%	4,099	3,572	527	6.8	47	0.8	1.6	2.8	2.4	3.5
3	ECOH	ECOPETROL S A	BBB	8	0.2%	1,008	816	192	4.3	32		3.2	3.4	4.6	6.0
4	PSEC	PROSPECT CAP CORP INTERNOTES BOOK ENTRY	BBB	95	0.3%	1,319	1,050	269	3.9	28	1.3	2.4	3.2	3.4	2.3
5	TEVA	TEVA PHARMACEUTICAL FIN CO B V	BB	12	0.4%	1,566	1,059	507	2.1	41	1.9	4.3	4.2	5.0	5.1
6	SVC	Null	BB	13	0.3%	1,128	740	388	1.9	24	2.1	4.1	4.9	5.0	
7	PRU	PRUDENTIAL	BBB	45	0.3%	1,437	942	495	1.9	32			1.4	2.2	2.3
8	DAL	DELTA AIR LINES INC DEL	BB	13	0.3%	1,105	715	390	1.8	22	1.6	2.0	3.0	3.5	
9	BMO	BANK MONTREAL MEDIUM TERM SR NTS BOOK EN	BBB	90	0.4%	1,671	1,045	626	1.7	34	0.3	1.0	1.6		
10	PTRB	PETROBRAS	BB	19	0.3%	1,376	856	520	1.7	45		2.4	3.4	4.7	6.1
11	STT	STATE STR CORP	A	21	0.3%	1,345	821	524	1.6	24	0.6	0.7	1.3	2.2	
12	SLM	SLM CORP	B	103	0.3%	1,142	693	449	1.5	23	1.8	3.4	4.3	6.2	6.3
13	BK	BANK NEW YORK INC MEDIUM TERM SR NTS BOO	A	42	0.8%	3,564	2,153	1,411	1.5	64	0.4	1.0	1.4	2.0	
14	PEMX	PETROLEOS MEXICANOS	BB	36	0.5%	2,148	1,282	866	1.5	67	2.6	3.5	5.0	6.3	7.6
15	CS	CREDIT SUISSE	N/R	212	0.2%	979	582	397	1.5	22	0.5	1.5	1.6	2.3	3.2
16	PFE	PFIZER	A	48	0.5%	2,007	1,190	817	1.5	40	0.6	1.3	1.4	2.1	2.7
17	RY	ROYAL BANK OF CANADA	A	204	0.4%	1,880	1,110	770	1.4	40	0.6	1.1	1.6	2.3	
18	BA	BOEING CO	BBB	56	0.7%	2,797	1,636	1,161	1.4	71	0.8	1.6	2.1	2.8	3.5
19	ALLY	ALLY FINANCIAL	BBB	28	0.3%	1,141	663	478	1.4	29	0.5	1.6	1.5	3.2	
20	DISH	DISH DBS CORP	B	10	0.3%	1,075	622	453	1.4	22	2.6	4.8	6.3	6.4	

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 2021

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	HBC	HSBC	N/R	327	0.2%	992	282	710	0.40	28	0.7	1.6	2.3	3.4	3.0
2	EXC	EXELON GENERATION CO LLC	BBB	71	0.2%	1,037	363	674	0.54	26	0.8	1.4	1.7	2.3	4.1
3	RDS	SHELL	AA	29	0.4%	1,666	595	1,071	0.56	34	0.5	1.2	1.4	2.1	2.9
4	HCA	HCA INC	BBB	26	0.3%	1,176	427	749	0.57	32	1.1	1.8	2.1	2.8	3.3
5	BRK	BERKSHIRE HATHAWAY	A	150	0.8%	3,396	1,267	2,129	0.60	86	0.5	1.1	1.4	2.2	3.0
6	BCS	BARCLAYS	N/R	550	0.4%	1,793	690	1,103	0.63	46	1.9	1.7	2.1	2.8	
7	KMI	KINDER MORGAN ENERGY PARTNERS L P	BBB	58	0.3%	1,375	533	842	0.63	32	0.6	1.2	2.0	3.0	3.8
8	PNC	PNC FDG CORP	A	28	0.5%	2,055	809	1,246	0.65	42	0.6	1.0	1.5	2.2	
9	WMT	WAL-MART	AA	31	0.4%	1,551	610	941	0.65	29	0.4	0.9	1.4	1.8	2.5
10	CHTR	CCO HOLDINGS LLC	BBB	39	0.3%	1,127	448	679	0.66	36	0.9	1.7		3.0	3.8
11	PEP	PEPSICO	A	37	0.4%	1,518	609	909	0.67	32	0.5	0.9	1.4	1.9	2.7
12	DELL	DELL	BBB	23	0.3%	1,380	561	819	0.68	35	0.8	1.4	2.0	2.5	4.0
13	T	AT&T	BBB	113	1.4%	5,735	2,354	3,381	0.70	119	0.7	1.2	1.8	2.6	3.5
14	BUD	ANHEUSER BUSCH INBEV WORLDWIDE INC	BBB	41	0.5%	2,128	884	1,244	0.71	52			1.5	2.3	3.3
15	EDP	ENTERPRISE PRODS OPER LLC	BBB	35	0.4%	1,518	629	889	0.71	34	0.6	1.3	1.7	2.3	3.5
16	HPQ	HEWLETT PACKARD	BBB	17	0.3%	1,381	572	809	0.71	34	0.7	1.6	1.9	2.7	3.8
17	MET	METLIFE	A	19	0.3%	1,192	493	699	0.71	24		1.1		2.2	3.0
18	MS	MORGAN STANLEY	A	708	1.7%	7,365	3,050	4,315	0.71	166	0.7	1.3	1.9	2.5	3.0
19	MSFT	MICROSOFT CORP	AAA	34	0.6%	2,476	1,037	1,439	0.72	46	0.5	0.9	1.4		2.6
20	CMCS	COMCAST	A	58	1.0%	4,198	1,791	2,407	0.74	81	0.6	1.2	1.6	2.3	3.0

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

November 2021

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	EIX	EDISON MISSION	Nov-24	BBB	3.550	2,297	24	2,321	6	1.6	1.6	105.6	105.4
2	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	Aug-50	BBB	3.446	1,547	486	2,033	46	3.5	3.5	98.5	97.7
3	SIVB	SVB FINL GROUP	Null	BBB	4.250	795	68	863	15			100.8	100.4
4	JPM	JP MORGAN CHASE	Sep-24	BBB	3.875	728	135	863	8	1.4	1.3	106.8	107.0
5	PRU	PRUDENTIAL	Jun-43	BBB	5.625	603	55	658	13			105.8	105.0
6	SIVB	SVB FINL GROUP	Aug-50	BBB	4.700	602	19	621	16			103.9	101.9
7	TEVA	TEVA PHARMACEUTICAL FIN CO B V	Oct-26	BB	3.150	540	154	694	17	4.2	4.4	95.3	94.6
8	PFE	PFIZER	May-25	A	0.800	519	20	539	2	1.3	1.2	98.4	98.7
9	ECOH	ECOPETROL S A	May-45	BBB	5.875	504	36	540	16	6.0	6.2	98.6	95.7
10	AXP	AMERICAN EXPRESS	Null	BBB	3.550	486	106	592	15			100.2	99.9
11	BMO	BANK MONTREAL MEDIUM TERM SR NTS BOOK EN	May-25	N/R	8.000	458		458	5			100.0	
12	DTE	DTE ENERGY CO	Dec-81	BBB	4.375	457	62	519	3			25.0	24.9
13	SCHW	SCHWAB CHARLES CORP NEW	Null	BBB	4.000	457	117	574	16			101.8	100.2
14	BAC	BANK OF AMERICA	Aug-24	BBB	4.200	449	185	634	9	1.5	1.4	107.3	107.6
15	PBFQ	PBF HLDG CO LLC / PBF FIN CORP	May-23	B	6.875	443	143	586	7	9.0	9.3	97.1	96.7
16	ERJ	EMBRAER S A	Jun-25	BB	5.050	441	51	492	6	3.7	4.0	104.4	103.6
17	DAL	DELTA AIR LINES INC DEL	Jan-26	BB	7.375	435	89	524	7	3.0	2.8	116.4	117.6
18	GS	GOLDMAN SACHS	May-70	BB	4.125	403	17	420	13			100.9	100.2
19	STT	STATE STR CORP	May-23	A	2.653	398	8	406	2			101.0	101.0
20	USB	U S BANCORP MEDIUM TERM NTS- BOOK ENTRY	Aug-50	BBB	3.700	391	22	413	11			100.5	99.3

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

November 2021

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	PNC	PNC FDG CORP	Mar-22	A	3.300	33	508	541	7	0.2	0.2	100.7	100.7
2	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	Aug-50	BBB	3.446	1,547	486	2,033	46	3.5	3.5	98.5	97.7
3	CVS	CVS CAREMARK CORP	Mar-28	BBB	4.300	310	456	766	11	2.1	2.1	112.3	112.5
4	GNW	GENWORTH	Aug-23	B	4.900	14	453	467	8	1.1	1.3	106.6	106.2
5	JPM	JP MORGAN CHASE	Aug-50	BBB	6.750	188	448	636	10	6.2	6.2	109.1	108.0
6	CMCS	COMCAST	Oct-28	A	4.150	194	348	542	11	1.9	1.9	113.8	113.7
7	AAPL	APPLE INC	May-23	AA	2.400	169	339	508	10	0.5	0.6	102.7	102.7
8	JPM	JP MORGAN CHASE	Nov-50	BBB	5.150	131	334	465	5	5.0	5.0	102.8	102.1
9	BAC	BANK OF AMERICA	Jan-23	A	3.300	128	308	436	8	0.5	0.6	103.1	103.1
10	C	CITIGROUP	Jul-28	BBB	3.668	146	297	443	5			108.0	107.9
11	VZ	VERIZON	Nov-24	BBB	3.500	230	290	520	5	1.0	1.1	106.6	106.4
12	VZ	VERIZON	Mar-27	BBB	4.125	73	281	354	8	1.8	1.9	111.6	111.3
13	ORCL	ORACLE CORP	Nov-27	BBB	3.250	289	272	561	6	2.1	2.1	106.5	106.3
14	CTL	CENTURYLINK	Jun-36	BB	7.995	87	267	354	5	6.7	6.7	112.4	112.0
15	JPM	JP MORGAN CHASE	Oct-26	A	2.950	339	257	596	8	1.7	1.7	105.6	105.4
16	GS	GOLDMAN SACHS	Mar-24	A	4.000	166	254	420	9	1.0	1.1	106.7	106.5
17	GILD	GILEAD SCIENCES INC	Feb-25	BBB	3.500	239	237	476	4	1.3	1.3	106.4	106.2
18	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	Jan-38	BBB	5.875	35	230	265	5	2.9	2.8	138.4	139.1
19	ABBV	ABBVIE INC	May-25	BBB	3.600	172	227	399	7	1.4	1.4	107.0	106.9
20	WDC	WESTERN DIGITAL CORP	Feb-26	BBB	4.750	164	226	390	9	2.3	2.3	109.4	109.1

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

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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